

The Canberra Brickworks and Environs
Planning and Development Strategy
September 2013, including the preferred option

*Prepared by Hill Thalys Architecture + Urban Projects with Jane Irwin Architecture
for the Land Development Agency September 2013*

Yarralumla Residents Association

Submission

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1. Executive Summary

This is a submission in response to the Land Development Agency's (LDA) 'The Canberra Brickworks and Environs Planning and Development Strategy September 2013, including the preferred option, prepared by Hill Thalys Architecture + Urban Projects with Jane Irwin Architecture for the Land Development Agency September 2013' (referred to in this document as 'the proposed development' and cited as LDA 2013).

The proposed development strategy document (LDA 2013) released in May 2014 is very limited in detail and provides only a small scale plan of the site. The nature of the proposed development is an outline of the layout superimposed on an aerial photograph of the area. The reports and analyses that underpin the proposed development and preferred option were not released as part of the consultation process in mid May 2014. Some of this information was released in mid June 2014 following a 'Freedom of Information' request. The period for submissions closes on 14 July 2014.

The Yarralumla Residents Association Submission is based on a detailed analysis of 20 reports by government agencies and consultants, publically available information and information released by the LDA under 'Freedom of Information'. The 2013 feasibility study by MacroPlan Dimasi cited by the Land Development Agency (LDA) has not been made available to the public.

The submission is informed by consultation with the Yarralumla and Deakin communities and the Inner South Canberra Community Council (ISCCC). Consultation included public meetings convened by the Yarralumla Residents Association and the ISCCC, held on 3 June 2014 and 7 July 2014 respectively, which attracted approximately 150 local residents and over 150 attendees respectively. Further support has been demonstrated by a petition currently signed by more than 1000 residents. This submission is also informed by discussion with technical experts, and past employees involved with the operation and use of the Canberra Brickworks from the early 1970s to date.

The submission will demonstrate that the proposed development strategy and preferred option (LDA 2013) comprehensively fails to fulfil its own objectives and claims, and fails on five of the seven principles set out in the Canberra Spatial Plan 2004. There are significant issues associated with the feasibility of the development. The need for a development of this scale and density is highly questionable given the decline in housing demand that is being reflected in the LDAs land release program and the forecast one third reduction in LDA land sale revenue. Its economic, social and environmental impact on the community has not been taken into account.

The constraints of the proposed development site have not been addressed in terms of: roads and civil infrastructure, traffic congestion, elimination of critically endangered species. inter-town centre buffer zones and connected open green space, bushfire protection, public transport, community facilities and importantly, the preservation and adaptive re-use of the historic Canberra Brickworks.

The overall cost of the proposed development will be far more than the \$140 to \$160 million gained from land sales revenue and this will place an additional cost burden on Canberra ratepayers of around \$188 million.

Scale and Scope of Development

The proposed development is for urban 'infill' of a type and scale that is without precedent for a Canberra suburb. It is not infill of a couple of blocks but a 42ha in the middle of an existing community. The density of the proposed development is ten times that of Belconnen Town Centre and will more than double the population of Yarralumla from 2922 to 6762. The dwelling density of the proposed development is four times that of the existing suburb and is predominantly high density with 47% of the dwellings being four to eight storey. This compares to Yarralumla that has 75% single storey dwellings, 23% semi-detached, and less than 3% apartments.

Thus the scale of the proposed development is similar to a town centre such as Woden or Belconnen, but with none of their services or amenities. There is a stark contrast in scale, dwelling height, dwelling mix, net dwelling density and population per hectare with the existing suburb of Yarralumla. The density of dwellings is disproportionate and at odds with the built character of Yarralumla. Thus the stated goal of integration that 'builds on and extends the character of Yarralumla' cannot be achieved under the proposed development.

There is a significant decline in housing demand that has resulted in a major reduction of 3000 dwellings from the LDA's land lease program and a reduction in revenue of 32% or \$719m between 2013-14 and 2016-17. Thus urban infill of this scale cannot be justified on the basis of current and future housing demand.

Roads, Civil Infrastructure, Traffic and Transport

There is a need for very significant investment in roads, infrastructure and services within and adjacent to the proposed development. A comprehensive assessment of these requirements is lacking and the costs estimates where available are generally underestimated by between four and a hundred fold as all the relevant factors have not been taken into account.

The proposed development only makes provision for roads within the developed area and the costs of these are severely underestimated. There is no provision for the upgrade of any connecting roads in Yarralumla or the intersections to major routes. The forecast increase in population of up to 5100 and some 2870 cars, from the proposed and future stage developments, will bring a significant increase in traffic congestion, commuter 'rat running' through the suburb from the Adelaide Avenue corridor and car and pedestrian safety issues..

The technical reports prepared for the LDA clearly show that without investment in the roads of the existing suburb, and the upgrade of the intersection with Adelaide Avenue and Cotter Road, the existing roads will be overwhelmed. Access to the main roads will be grid locked; impacting on commuters with major 'rat running' through the suburb; and traffic through the proposed development will be unsustainable. These reports understate the severity of the situation as they are based on 2010 data. A traffic flow assessment of eastbound Dudley Street on 30 June 2014 at 8.30am has the traffic flow at 800 cars per hour, a threefold increase from 2010.

The proposed development is not viable without major investment in road upgrades. The construction of the Interchange for Adelaide Avenue and Cotter Road, at a cost of \$104m, is essential.

There are no new community facilities proposed to service the proposed development – no schools, community spaces or retail outlets close to the new housing. The 15,000sqm of commercial space planned is located on the south side of Adelaide Avenue (across a six lane highway) and is intended to service the West Deakin business area.

The local Yarralumla Centre (Bentham St Shops) has one small supermarket and parking for 46 cars. According to the ACT Government Territory and Municipal Services, the existing parking does not meet Australian Standards and has a high accident rate, including involving pedestrians. No consideration is given to how an additional population of 3840 will be able to access and park at the closest shops. Without adequate provision of retail and community facilities close to the proposed development there will be significant access and traffic safety issues at the Yarralumla Centre.

The proposed development promises, but fails to deliver, easy access to public transport. The Peak Express bus service is proposed to be available in 2031 some 15 years hence, but even this is questionable as the technical engineering design advice to the LDA states there are substantial operational and safety risks with the proposed Adelaide Avenue bus stops, including the high risk of stopping buses adjacent to high speed traffic lanes.

The edge of the proposed development is more than 500 metres from the proposed Adelaide Avenue bus stop; the centre of the proposed development is over 750 metres away. Access for the elderly and the disabled is questionable and heavy patronage of a bus service when, and if, it becomes available seems unlikely.

The proposed development is based on the assumption that the existing infrastructure, services (roads, electricity, water, stormwater, sewerage, gas and telecommunications) are adequate to accommodate the connection of 1600 new dwellings. It makes no provision for new infrastructure or upgrades within or adjacent to the site and makes no provision for the required Asset Protection Zones for bushfire protection. This is likely impact on the design layout and number of dwellings.

The technical information and reports publicly available indicate that this assumption is not correct and that significant investment in upgrades to roads infrastructure and services is essential. Moreover, the estimates for the costs of work that support the proposed development are significantly underestimated. The need for these upgrades must be taken into account and will add significant cost to the proposed development and may make it financially unviable.

Storm water requirements have not been comprehensively assessed. Technical reports advise that there is a conflict between the road layout and landform that will require extensive and expensive earthworks, and that the rigid grid design of the proposal provides little scope for directing stormwater into appropriate flow paths. The stormwater detention volume estimate needs to be updated to apply the recently revised Bureau of Meteorology rainfall intensity guidance to the Australian Standards (AS/NZS 3500.3). When this is done the volume nearly

doubles. Also no open areas have been set aside for the necessary detention ponds in the layout of the blocks.

The main Telstra telecommunications backbone for Canberra runs down Kent and Novar streets and relocation would be necessary as part of intersection signalisation in the absence of an Interchange. This would be high cost and high risk with liability for outages running in the millions of dollars per minute. The need to move the high pressure gas line running adjacent to Dudley Street also needs to be considered.

The existing Yarralumla sewerage infrastructure was built in the 1940s; previous studies and advice from ACTEW AGL suggest that existing sewer and water infrastructure is incapable of handling the demands of a development any greater than 25 dwellings. To upgrade the main sewers would require digging up the length of Novar Street; the suburb's main access road; digging across The Royal Canberra Golf Course or trenching several kilometres across the Curtin horse paddock. In addition, Yarralumla has ageing power infrastructure and regular outages. No assessment of the capacity of the existing electricity infrastructure to meet the additional requirements of the proposed development has been made or costed. The high voltage power lines crossing the site will need relocation. This has also not been assessed or costed.

The bulk earthworks for the proposed development site are early indicative estimates. These could well nearly double to around \$6.5m when all factors, such as geology, bulking, transport and the load bearing requirements of the road are taken into account. Similarly the total cost of road construction for the proposed development is likely to be in the order of \$62m to \$83m, based on comparable road works in the area in 2012, for 800 metres of the Cotter Road near Streeeton Drive which cost \$14m.

Community and Environmental Impacts

The proposed development does not take into account the social, economic and environmental impact on the community. Land release and construction of the proposed development is intended to take place over a period of eight to ten years and the development site is part of Yarralumla. The community will be subject to congestion through traffic, heavy construction haulage, asbestos removal, and fit-out traffic for this entire period. The ongoing noise and traffic from this construction will impact on the liveability of the suburb. There will be an impact on house values and properties may become unliveable and unsellable. Compensation from the ACT government may be sought as well as financial assistance for noise mitigation. Inadequate attention to these issues may result in legal action.

The proposed development is based on the assumption that loss of 38ha of urban open space in Yarralumla will not have significant impact on the amenity and biodiversity of the suburb. However, as the Australian Bureau of Statistics (ABS) data shows, Yarralumla comprises 1.8% urban open space when compared to Forde (38.7%), Amaroo (28.7%) and Crace (13.3%) (ACT Government 2011). Some 77% of Yarralumla is 'designated land' that is adjacent to Lake Burley Griffin, and is under Commonwealth control through the National Capital Authority, and cannot be developed for residential purposes.

The proposed development provides several small disconnected parks of about 1ha in total that are designed solely for passive recreation. The high density housing development removes 38ha of urban open space in Yarralumla. Overall this is a significant loss of open green space and active recreation amenity. This includes the loss of the area most highly

valued by the community for active recreation. This 'green circuit', which includes the historic Uriarra Track, is used by families, children and adults for walking, cycling, running, and exercising dogs. It is clearly defined and can be seen on Google Earth. Indeed being able to go around the 'green circuit' is the most highly valued aspect of this open space identified in community consultation.

The proposed development also builds over Griffin's green buffer between central Canberra and the satellite towns of Woden, Weston Creek and Belconnen. This area includes the area's ridge line and part of the original Westbourne Woods. Building out this buffer severely compromises city planning principles. The proposed development also eliminates the block zoned PRZ1 Urban Open space between Kintore Crescent, Novar Street and Dudley Street.

The proposed development also results in the loss of key biodiversity habitat. The whole 1.5ha of natural temperate grassland that is the specific habitat of the critically endangered Golden Sun Moth is subject to development. Both the grassland and the Golden Sun Moth are protected under both ACT and Commonwealth legislation. The loss of more than 0.5ha of its specific habitat requires referral as a matter of National Environmental Significance under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Canberra Brickworks

The Canberra Brickworks is of major historical value as a rare example of industrial manufacturing, for building materials for construction in the ACT from 1913 to 1976. The Brickworks is registered on the ACT Heritage Places Register. The ACT Government's listings also include the Brickworks railway and the Brickpits which are an important geological fossil containing formation in the grounds of the Brickworks.

The proposed development has at its heart the stated outcome of 'Restoration of the Canberra Brickworks to create a major new destination in Canberra' and 'conservation of local heritage by the restoration of the Brickworks'. Contrary to the stated aim, this cannot be delivered by the strategy and funding framework for the proposed development.

The commercial adaptive re-use of the Brickworks contemplated in the 2010 proposed development has now been assessed as unviable by the MacroPlan Dimasi 2013 feasibility study (not in the public domain). Moreover, the proposed development is not a feasible strategy for the Brickworks site based on the environmental audits to date; the investigations for housing development undertaken in relation to the liquidation of the Alan Marr estate in 1981; and the 2010 Conservation Management Plan developed for the LDA.

The environmental audits show the site to have significant contamination including an Asbestos Dump, blue asbestos, and hydrocarbons. The site is also subject to considerable areas of uncompacted, loose fill that is prone to collapse upon disturbance. Many of the geotechnical sampling bore holes collapsed during sample drilling and technical advice is that removal of fill will be required for any development of the area.

Comprehensive decontamination of the site is required to make it safe and fit for housing construction and parkland. In addition, stabilising the site to make the areas of loose fill suitable for housing and parkland will be necessary. Both of these will be costly.

The survey undertaken for the Canberra Brickworks Conservation Management Plan 2010 identified 97 remedial works required to make the buildings stable and conserve the buildings by slowing further deterioration. The works would not restore any of the buildings. Some of the works are quite significant and costly. The Staffordshire Kiln, which is of particular heritage value, has significant structural issues. Many of the kiln chambers are distorted; the arched entrance brickwork is failing and appears to have inadequate footings. The remedial works recommend rebuilding these in the near future.

A total of \$1.5m is available from the LDA to make safe the Brickworks for public access and \$2.9m from the ACT Government for the decontamination of the site. These amounts are likely to be inadequate by a factor of ten to a hundred fold based on current information. There is no provision for funding the 97 items to prevent further deterioration of the Brickworks heritage buildings. The proposed budget is not sufficient to remove contaminated soil from the site for the purposes of constructing the proposed two storey high rise buildings on top of the existing Asbestos Dump. Nor is it sufficient to decontaminate the remainder of the site. It is insufficient to 'make safe' the site for public access, stop further decay of the heritage buildings or stabilise the quarry park area for housing development and parkland.

The proposed development for the Canberra Brickworks therefore merely allows 'managed decay' of the heritage Brickworks buildings and minimal decontamination of the site. It cannot deliver the stated intent of conservation of local heritage and restoration of the Canberra Brickworks to create a major new destination in Canberra.

Any proposed development should preserve, make accessible and enhance the heritage sites in the area, particularly the Canberra Brickworks site. The legal and governance framework under which the LDA and the ACT Government operate, however, impose constraints that militate against the remediation, decontamination, make safe, restoration and adaptive re-use of the Brickworks site and its heritage buildings.

The overall costs of the proposed development need to be paid for by revenue from the land sales by the LDA and the LDA is required to deliver a 20% return on investment to the ACT Government. The revenue remaining from LDA land sales after expenses have been paid goes to consolidated revenue and cannot be hypothecated for the purposes of the Brickworks. Thus the LDA's legal and governance framework does not provide a mechanism for the LDA to directly fund and manage restoration of the Canberra Brickworks or its adaptive re-use. Any funding for the Brickworks would be subject to the ACT Government's Budget process and be in competition with health and education and for the 2014-15 \$300m Budget deficit.

Conclusion

A significant concern with the proposed development and the consultation process is that the major issues raised in the 2010 consultations and submissions have not been addressed. The changes that have been made create further significant impact and as such the 2013 proposed development is a regression from the 2010 proposal.

The analysis provided in this submission shows that the proposed development of the Canberra Brickworks and Environs fails on most of the seven principles in the Canberra Spatial Plan 2004. These are: locating new residential areas close to town centres and transport routes, providing good travel connections, and protecting important assets and areas of high conservation value from the impact of development.

The scale and density of the proposed development seem to be driven by the need for revenue from land sales. It maximizes the dwellings per hectare at a level that is unprecedented for urban infill for Canberra, or indeed for any existing town centre in the ACT. Given the trend in reducing demand housing and reduction land revenues, the case for infill of the Canberra Brickworks and Environs on this scale and density is not made.

The proposed development does not provide for the 'Restoration of the Canberra Brickworks to create a major new destination in Canberra' and this is unacceptable to the community. Moreover when the full costs of the proposed development to Canberra are considered there is a negative impact on Canberra ratepayers of over \$188m.

On the basis of this detailed analysis in this submission, which directly addresses the Community's concerns; the Yarralumla Residents Association calls for the current proposed development strategy and preferred option (LDA 2013) for the Canberra Brickworks and Environs to be withdrawn. A comprehensive analysis must be undertaken of the area and the issues identified in this and other submissions fully and transparently addressed. These issues include the scale and scope, impacts on the community, heritage and environment, the overall cost, feasibility and viability.

2. Introduction and Yarralumla Residents Association Consultations

- 2.1 This is a submission in response to the Land Development Agency's (LDA) 'The Canberra Brickworks and Environs Planning and Development Strategy September 2013, including the preferred option, prepared by Hill Thalys Architecture + Urban Projects with Jane Irwin Architecture for the Land Development Agency September 2013' (referred to in this document as 'the proposed development' and cited as LDA 2013).
- 2.2 The proposed development strategy document (LDA 2013) released in May 2014 is very limited in detail and provides only a small scale plan of the site. The nature of the proposed development is an outline of the layout superimposed on an aerial photograph of the area. The reports and analyses that underpin the proposed development and preferred option were not released as part of the consultation process in mid May 2014. Some of this information was released in mid June 2014 following a 'Freedom of Information' request. The period for submissions closes on 14 July 2014.
- 2.3 The Yarralumla Residents Association Submission is based on a detailed analysis of 20 reports by government agencies and consultants, and of publically available information. The submission is informed by consultation with the Yarralumla and Deakin communities and the Inner South Canberra Community Council (ISCCC). Consultation included public meetings convened by the Yarralumla Residents' Association and the ISCCC, held on 3 June 2014 and 7 July 2014 respectively, which attracted approximately 150 local residents and over 150 attendees respectively. The Yarralumla Residents Association has further demonstrated support for this submission through a petition signed by more than 1000 residents to date. This submission is also informed by discussion with technical experts, and past employees involved with the operation and use of the Canberra Brickworks from the early 1970s to date.
- 2.4 On the basis of the detailed analysis in this submission, the Yarralumla Residents Association calls for the current proposed development (LDA 2013) for the Canberra Brickworks and Environs to be withdrawn. A comprehensive analysis must be undertaken of the study area and the issues identified in this and other submissions fully and transparently addressed. These issues include the community impact, environmental impact, overall cost, feasibility and viability.

3. Background - Planning Process and Context

- 3.1 The Canberra Brickworks and Environs Planning and Development Strategy September 2013 (LDA 2013) identifies an area for proposed development comprising 42ha of Yarralumla, with the Canberra Brickworks site comprising 4.5ha or 11% of the total area.

3.2 The proposed development strategy (LDA 2013) states that it will ‘guide the reuse and adaptation of the Canberra Brickworks as well as the planning and development of associated lands’. The proposed site is identified as ‘One of the best infill opportunities currently available in inner Canberra’ [because it]:

- Extends open space networks and improves opportunities for active and passive recreation
- Utilises existing amenity and urban facilities
- Contributes to conservation of local heritage by the restoration of the Brickworks
- Links to existing and future planned public transport systems
- Is a plan informed by and extends the key planning principles of Inner Canberra in terms of street and open space types. (LDA 2013 Pages 6 and 26).

3.3 The Land Development Agency (LDA) website states that:

‘The ACT Government has provided in-principle support for development of the land defined in the current Strategy for the Canberra Brickworks and Environs, subject to relevant ACT and Commonwealth statutory processes. Cabinet has approved a strategy that will facilitate restoration of the historic Canberra Brickworks.

The outcome of the planning process is a Planning Strategy that will act as a framework to guide future land use, traffic and transport planning, and infrastructure investment for the Canberra Brickworks and Environs.

Once the strategy development is complete, the statutory processes will be undertaken. This includes the draft variation to amend the Territory Plan, amendment to the National Capital Plan, referral under the Environment Protection and Biodiversity Conservation Act 1999, and Environmental Impact Statement under the Planning and Development Act 2005.

Subject to the outcomes of the formal land use and environmental statutory processes, the LDA will prepare an Estate Development Plan (EDP) for lodgement with the Environment and Sustainable Development Directorate (ESDD) for consideration. Further formal consultation will also take place as part of this process.

The LDA is responsible for development outcomes across the full study area, including the Brickworks. The LDA will be responsible for designing and delivering all aspects of the Canberra Brickworks and Environs development

The specific nature of any individual developments within the study area is yet to be determined – once a suitable option has been agreed which will dictate use, density, form of development and urban design quality, it will be possible to consider more specific market values of any individual dwellings. It is anticipated that there will be a range of dwelling types, with an appropriate range of values.

The Canberra Brickworks and Environs Planning and Development Strategy (2013) including the preferred option has been developed on the basis of previous community consultation and further technical studies including a Conservation Management Plan, traffic and feasibility modelling. Only the Conservation Management Plan has been publically released with the proposed development.

Commercial feasibility studies undertaken by MacroPlanDimasi in 2012-13 indicate that independent private sector investment in the adaptive reuse of the Brickworks heritage buildings (as in the Draft Strategy for the Brickworks put forward in 2010) is unlikely to be viable.'

- 3.4 The 2013 proposed development is stated to facilitate the restoration of the historic Canberra Brickworks and the development of high quality public facilities, provide a range of housing options, provide commercial space primarily located in Deakin to support the West Deakin Business Park, and provide a transit orientated design and infrastructure [that will] provide excellent access to improved public transport for the future population.
- 3.5 The 2013 proposed development for the Canberra Brickworks and Environs has been put forward based on feasibility studies conducted in 2013, but which are not currently in the public domain. However, based on information that is available in existing public reports and statistics, this submission will demonstrate that the proposed development strategy and preferred option (LDA 2013) comprehensively fails to fulfil its own objectives and claims.

4. Scale and scope of the proposed development

Key Points

The proposed development is for urban 'infill' of a type and scale that is without precedent in Canberra – not infill of a couple of blocks, but a 42ha Greenfields site within an existing community.

The density of the proposed development is ten times that of Belconnen Town Centre and will have nearly four times more people per hectare than Turner. It is double the dwelling density of Denman Prospect in Molonglo.

The developments will more than double the population of Yarralumla taking it to 6762 from its current 2922. It adds 3840 people in an area of just 42ha that is only one third the size of Yarralumla's current residential use area of 146ha.

The 'Future Stage' part of the Proposal would increase the new population by another 1,260 people (a total change of 2922 to 8022 within eight to ten years).

The high density development with 47% of dwellings between 4 and 8 storeys is in stark contrast to the built character of the suburb of Yarralumla, which is 75% single occupancy dwellings, 23% semi detached and less than 3% are apartments.

- 4.1 A stated objective of the proposed development preferred option (LDA 2013) is to integrate the proposed development with the existing suburb of Yarralumla: However, the proposal is the equivalent of a major town centre but with none of the community facilities. The contrast in scale, dwelling mix, net dwelling density and population per hectare between Yarralumla and the proposed development is extreme. The roads of the existing and new development will be overwhelmed. The stated goal of 'Urban walkable streets that build on and extend the character of Yarralumla and provide generous pedestrian connections to the existing streets and facilities' (LDA 2013 page 25) is unachievable under this proposal.
- 4.2 The proposed site is 42ha, currently zoned as CZ6 Leisure and Recreation for the Canberra Brickworks site and the 'Environs' component is zoned as PRZ2 Restricted Access Recreation and PRZ1 Urban Open Space. Three quarters of the site is bounded by National Capital Plan designated land with Yarralumla on the eastern side.

Fig. 1 - The Canberra Brickworks and Environs Planning and Development Strategy 2013 – Preferred Option



Profile of proposed development

Study Area 45 ha	Canberra Brickworks Site 4.5ha (11% of the total area)
Proposed Dwellings:	1600 (4 to 8 storeys 47%; 3 storeys 38%; single storey 0%)
Additional:	3840 Population 2240 Cars

- 4.3 The proposed urban ‘infill’ is of a type and scale that is without precedent in Canberra. Urban infill within a 10km radius of the centre of Canberra has to date been a combination of knock down and rebuild of single occupancy dwellings, or consolidation of several blocks for a stand-alone larger scale development of medium to high density. Examples include:
- The Veridian in Kingston (173 dwellings on 1.19ha giving a site density of 145 dwellings/ha);
 - Kingston Tower (27 dwellings on 0.5ha with dwelling density of 53 dwellings/ha);
 - Turner Haig Tower (48 dwellings on 0.13ha with dwelling density of 346/ha); and
 - Belconnen Miramar (72 dwellings on 0.67ha and dwelling density of 106/ha).
- 4.4 The proposed strategy is to undertake an essentially Greenfields development that has more dwellings and people than the current suburb; this proposed development is for 1,600 dwellings in an area of 42ha. Yarralumla has 1,307 dwellings in a gross area of 820ha and a residential use area of 146ha (ABS 2011). The proposed development is four times the dwelling density of Yarralumla. The proposed development has 1.3 times the number of dwellings in an area that is 30% of the size of the area for residential use in Yarralumla.
- 4.5 The population of Yarralumla is 2,922 (ABS 2011) with a net residential dwellings density of 8.5/ha (ACT Government 2011). The population of the proposed development would be 3,840, with a gross dwelling density of 38/ha and estimated net dwelling density 240/ha.
- 4.6 The new development is thus 131% of the Yarralumla population and 28 times the net dwelling density.
- 4.7 Yarralumla currently comprises 75% single occupancy dwellings; 23% semi-detached or town houses; and 2.6% apartments (ABS 2011). By comparison, the proposed development has housing of three to eight storeys in 18 major blocks of more than 300sqm each. The composition of the development is 47% dwellings at four to eight storeys; 38% at three storeys and no single storey dwellings.
- 4.8 The dwelling density and height of buildings is unprecedented for a Canberra suburb and can currently only be found at major town centres such Belconnen. The density of the proposed development is ten times that of Belconnen Town Centre (which in 2010 had 3,821 people in 440ha) (ACT Government 2011). It is nearly four times denser than Turner, which has a population of 3,821 in 150ha that is 25 persons/ha, compared to 91 persons/ha for the new development. The second stage suburb Denman Prospect in Molonglo—also on the 10km radius from the centre of Canberra—has 1,700 dwellings in 107ha that is a dwelling density of 16/ha, compared with the proposed Canberra Brickworks and Environs development of 240 dwellings per hectare.

- 4.9 Thus the scale of the proposed development is similar to a town centre such as Woden or Belconnen, but with none of their services or amenities. There is a stark contrast in scale, dwelling height, dwelling mix, net dwelling density and population per hectare with the existing suburb of Yarralumla. The density of dwellings is disproportionate and at odds with the built character of Yarralumla. Thus the stated goal of integration with the existing suburb of Yarralumla cannot be achieved under the proposed development.

5. Future Stage Development Not Considered

Key Points

The 'Future Stage' part of the proposed development would increase the new population by another 1260 people (a total change of 2922 to 8022 within eight to ten years).

No traffic Interchange at Cotter Road/Adelaide Avenue is planned in the 2014 proposed development. Consequently 15ha of land is withheld from the development site, to allow for future realignment of the roads.

To achieve the originally planned target of 1600 dwellings, 454 dwellings have been forced into the remaining area, significantly increasing the building height and density per hectare.

- 5.1 The 2013 proposed development includes a significant area that is labelled for 'Future Stage' (see Fig.1). This has been excised from the previous proposed development put forward by the LDA which included an Interchange. As can be seen from Figure 2, the area marked 'Future Stage' shows that land previously earmarked for 454 dwellings (Blocks 6,9,12 and 15) and a block on the West Deakin side of Adelaide Avenue earmarked for 71 dwellings (Block 21) have been removed from the current proposal.
- 5.2 The 2013 proposed development does not include an Interchange on Cotter Road/Adelaide Avenue. Until a decision on the Interchange or alternative traffic arrangements is made, the 'Future Stage' area cannot be built upon because it would significantly compromise a realignment of Cotter Road.
- 5.3 The consequence has been to increase the number of dwellings in the 2013 Canberra Brickworks and Environs proposed development to reach the 1600 dwellings number. This has increased the density of the development to 47% four to eight storey buildings, as well as reducing the size of Westridge Park by a third since the 2010 proposal.
- 5.4 When the 'Future Stage' area is built, this will add a further 525 dwellings and some 1260 residents. This further increase has not been factored in to any of the assessments in terms of infrastructure, traffic and community facilities.

Fig. 2 - Canberra Brickworks and Environs Master Plan 1600 dwellings March 2013 - Blocks 6,9,12 and 15 have been removed in the September 2013 proposed development



6. Declining Housing Demand

Key Points

The ACT Government removed 3000 dwellings through the Land Release Program over the next four years (a reduced target of 13500 dwellings) because of lower than forecast demand. The Belconnen, Molonglo and Gungahlin land releases were scaled back.

Falling demand for new housing has been reflected in the land revenue results for the LDA: estimates of \$484m for 2013-14 compared with actuals of \$228m. That is a loss of \$256m. The forecasts for the out years have also been reduced for 2014-15 from \$553m to \$354m; for 2015-16 from \$658m to \$453m and for 2016-17 from \$556m to \$497m.

Urban infill of this scale and density cannot be justified on the basis of unmet current and projects housing demand.

- 6.1 There is no demonstrated claim that urban infill of this scale and density is required to satisfy unmet housing needs in the ACT.

- 6.2 Housing demand in the ACT is falling: in June 2014 the ACT Government's budget showed that 3000 dwellings had been removed from the Land Release Program over the next four years and the target reduced to deliver 13500 dwellings because of lower demand.
- 6.3 The LDA have scaled back Belconnen, Molonglo and Gungahlin releases. Stage 2 of Molonglo alone is designed to accommodate 1800 future residents.
- 6.4 Estimated land revenue for the LDA was \$484m for 2013-14, whereas the result was a loss of \$256m with revenue being only \$228m. The forecasts for the three out years have also fallen for 2014-15 from \$553m to \$354m; for 2015-16 from \$658m to \$453m and for 2016-17 from \$556m to \$497m.
- 6.5 Urban infill of this scale and density cannot be justified on current projections.

7. Special Zoning Provisions Required

Key Points

The proposal is for high density multi-storey development on land currently zoned as CZ6, PRZ2 and PRZ1. The development as proposed cannot occur under the existing zoning provisions.

If rezoned to RZ4 or RZ5 the proposed development would not meet the zoning requirements of the Multi Unit Development Code as height and proximity requirements are as it has 47% of buildings between four to eight storeys.

A specific Precinct Code would need to be approved to enable a development of this height and density to proceed.

- 7.1 The proposed development does not align with the zoning provisions in the Multi Unit Development Code, which for RZ4 has a maximum plot ratio of 80% and a maximum number of three storeys and for RZ5 a maximum number of four storeys where the building is within 30 metres of the boundaries of blocks in RZ4, and in all other cases a maximum of six storeys.
- 7.2 The proposed development would not be allowed under the existing RZ4 or RZ5 zoning provisions, as it exceeds the limits on numbers of storeys. For the proposed development to be allowed, rezoning and the making of a specific precinct code to cover this high density and elevated storey development would be required.

8. Unworkable Traffic Flows and Congestion

Key Points

The forecast increase in population of 3840 plus 1260 from the proposed and future stage developments will bring a significant increase in traffic congestion.

A short-term increase of 2240 plus 835 cars and insufficient traffic planning and infrastructure will result in significant car and pedestrian safety issues, with significant commuter 'rat running' through the suburb from the Adelaide Avenue and Cotter Road corridor and intersections gridlocked.

Traffic studies undertaken to date show the intersections with the main linking roads of Adelaide Avenue and Cotter Road are already over capacity and will be overwhelmed in the absence of an Interchange.

The same traffic studies undertaken for the proposed development consider that these traffic volumes to be unsustainable for the undivided two lane suburban streets.

The traffic impact of the proposed development on the suburb of Yarralumla will be extreme.

The proposed development is not viable without construction of the Cotter Road/Adelaide Avenue Interchange and significant road upgrades. These must be costed into the proposed development.

No new community facilities or services are provided in the proposed development area in Yarralumla. The population increase will overwhelm the Yarralumla Centre (Bentham St Shops), which has 46 parking spaces and a history of traffic accidents, and with no provision for pedestrian safety.

- 8.1 The LDA has provided a comparison table of its Draft Strategy in 2010 (which was the subject of community consultation in 2010) and its 2013 proposed development (LDA Site Analysis Report: <http://www.lda.act.gov.au/canberra/the-study-area>). This shows that the 2010 proposals were 'contingent' on building the Adelaide Avenue-Cotter Road Interchange. The current proposal is stated to be 'not contingent' on the Interchange and does not include any road upgrades or new road infrastructure.
- 8.2 Five transport studies were undertaken for the LDA on traffic flows through the suburb of Yarralumla, the proposed development, and major linking roads. These clearly show that the intersections with the main linking roads of Adelaide Avenue and Cotter Road are already over capacity and will be overwhelmed without the construction of an Interchange. The studies show that traffic volumes will be unsustainable for the undivided two lane suburban streets of the proposed development as well as the exiting suburb. These studies include:
- *SMEC Transport Management Study 2013 undertaken for the LDA (SMEC 2013 a)*
 - *SMEC (2011) Final Report – Options and Evaluation Canberra Brickworks and Environs Planning Strategy: Traffic, Transport + Infrastructure*
 - *SMEC (2013b) Final Report Canberra Brickworks and Environs Options & Evaluation Report Update for Land Development Agency, 17 December 2013*
 - *SMEC (2013c) Draft Preliminary Geotechnical Site investigation for the Canberra Brickworks*

- *AECOM (2012) Mint Interchange Pre-Feasibility Study Report*

- 8.3 The layout of the streets in the proposed development requires access and egress to the major roads through Dudley Street or, if Dudley Street is removed, through Kintore Crescent and the Dudley Street and Novar Street mini roundabout. This is a roundabout that is already overwhelmed in 2014. Access from the new development to the existing suburb and Yarralumla Centre (Bentham Street) would be through Abbott Street, Denman Street, Maxwell Street and Kintore Crescent.
- 8.4 Traffic back-ups are already occurring in Yarralumla. They will increase further with completion in 2014 of the second stage suburb Denman Prospect in Molonglo (1700 dwellings bringing a further 2380 cars and 14280 vehicle movements per day). The proposed development for Yarralumla will add a further 2240 cars and an additional 13400 car movements a day through the existing streets.
- 8.5 Cotter Road and Adelaide Avenue are already under extreme pressure because of the Deakin West Equinox development on Kent Street and increased traffic from the Ambassador development in Deakin. At present the mini roundabout at the junction of Dudley Street and Novar Street is gridlocked between 8am and 9am and again from 5pm to 6pm each weekday (see Fig.3). The westbound exit ramp from Adelaide Avenue on to Kent Street similarly has tail backs onto Adelaide Avenue each morning.
- 8.6 A traffic census undertaken between 8am and 9am on 30 June 2014 revealed a traffic flow of 800 vehicles per hour eastbound on Dudley Street: this is three times the level of 274 per hour level used in the traffic modelling for the proposed development, which is based on earlier traffic census data.

Fig.3 - 27 May 2014 Dudley Street 8.45am showing tail back from Novar Street all the way to the Cotter Road



- 8.7 The five traffic studies demonstrate that the problem of traffic flows and congestion is severe and the June 2014 traffic census highlights that this traffic modelling based on 2010 data underestimates the current situation. The SMEC (2013b) report provides an analysis of traffic flows and it predicts that between 2010 and 2031 Dudley Street traffic will nearly double without the proposed development and that with the proposed development this increases further,
- ‘Without other road network connectivity improvements, such as a full interchange connecting the Cotter Road , Adelaide Avenue and Deakin to provide more favourable route options, these volumes are unsustainable for an undivided two lane urban street’ (LDA 2013 page 20)
- ‘to elaborate on the origins or destinations of the traffic using Dudley Street.....44% of eastbound traffic is actually destined for Adelaide Avenue’ (LDA 2013 page 12)
- The report finds that at present
- ‘some parts of the road network surrounding the proposed development area are already over capacity particularly the Cotter Road eastbound.....the ongoing duplication of the Cotter Road will not serve to relieve this congestion rather it will allow even more traffic to enter the area’ (LDA 2013 page 31)
- Dennison Street shows substantial traffic increase [with the development]...due to the additional commercial floor space and employment along its northern edge. This additional traffic also puts further stress on Kent Street as it is already over capacity.’
- In relation to future impact, the report shows that there will be significant ‘rat running’ through the existing suburb of Yarralumla:
- ‘In the future the strategic transport modelling indicates that the traffic demand will overwhelm the existing on ramp from the Cotter Road to Adelaide Avenue which results in substantially more traffic using Dudley Street as an alternative. In contrast the removal of Dudley Street ...is likely to result in this large volume of traffic using the roads within the development itself’ (LDA 2013 page31)
- ‘The strategic transport and intersection modelling results suggest that the increased future traffic overloads the roads in the development area and necessitates an upgrade to access arrangement between Cotter Road, Adelaide Avenue and surrounding suburbs..... the construction of the Cotter Road Adelaide Avenue Interchange should be considered necessary to support the viability of the Canberra Brickworks and Environs development’ (LDA 2013 page 32)
- 8.8 The conclusion that can be drawn is that the proposed development is only viable from a traffic management standpoint if the Cotter Road Adelaide Avenue Interchange is built and significant road upgrades carried out, and conversely, that the proposed development is not viable without them. SMEC has estimated the cost of the Interchange at \$79m to \$104m (AECOM 2012, SMEC 2013a).
- 8.9 Given these traffic assessments it appears that the Interchange may have been removed from the proposal because of its high cost. Such a major outlay would significantly reduce the LDA’s revenue from the proposed land sales and affect the

LDA's required 20% return on investment for the development (ACT Government 2012, LDA 2014).

- 8.10 As designed, the proposed development imposes severe and unacceptable traffic loads, congestion and risks on current and future residents of the suburb – as well as commuters from newly built suburbs along the Adelaide Avenue and Cotter Road corridor. The proposed development will result in significant 'rat-running' through narrow suburban streets in Yarralumla. The proposed development is not viable without the Cotter Road Adelaide Avenue Interchange and significant road upgrades and traffic management. The costs must be included and form part of the assessment of the proposed development's feasibility and viability.

9. Absence of Accessible Public Transport

Key Points

The proposed development promises, but fails to deliver, easy access to public transport.

A rapid transit bus service, Peak Express Service and Coverage Line Services are proposed for 2031 – in 15 years' time.

Additional bus stops are proposed for Adelaide Avenue, but the general engineering design assessment finds significant safety and operational issues and substantial safety risks for stopping buses adjacent to high speed traffic lanes.

The edge of the proposed development is more than 500 metres from the proposed Adelaide Avenue bus stop; the centre of the proposed development is over 750 metres away. Access for the elderly, the disabled is questionable and heavy patronage of a bus service when and if it becomes available seems unlikely.

- 9.1 The proposed development suggests that the proposed development will enable residents to readily access public transport because:
- 'Transit orientated design and infrastructure principles underpin the layout and provide excellent access to improved public transport for the future population (LDA 2013.' Page 25).
- 9.2 Yet no improvements or additions to existing bus services to the suburb are planned for the next 15 years:
- 'Transport for Canberra envisages that in 2031 the Canberra Brickworks and Environs will be serviced by a rapid transit line bus service, a Peak Express bus service and a Coverage Line bus service.' (LDA 2013 page 29)
- 9.3 The centre of the proposed development is more than 750m from a proposed Adelaide Avenue bus stop, so as a practical matter buses will be inaccessible to the elderly and the disabled, and unlikely to be used by a significant proportion of future residents.

- 9.4 The SMEC (2013 a) and AECOM (2012) reports assesses the construction of the Cotter Road Adelaide Avenue Interchange. This includes a proposal for Adelaide Avenue bus stops for access by Deakin and Yarralumla residents, and those from the proposed development. However, the general engineering design considerations state that there are safety and operational issues related to the bus stops that would be challenging and substantial safety risks for stopping buses adjacent to high speed traffic lanes.
- 9.5 The proposed development will thus not provide the stated ready access to public transport, and thus not alleviate the projected traffic congestion, thus reinforcing the need for the road Interchange and road upgrades.

10. Inadequate Provision for Roads & Civil Infrastructure

Key Points

The proposed development is based on the assumption that the existing infrastructure and services (roads, electricity, water, stormwater, sewerage, gas and telecommunications) are adequate to accommodate the connection of 1600 new dwellings. It makes no provision for new infrastructure or upgrades within or adjacent to the site as this has not been assessed.

The technical information available indicates that the base assumption that no new or upgraded infrastructure and services are needed is not correct. Upgrades to roads infrastructure and services must be taken into account. This will add significant cost to the proposed development and may make it financially unviable.

There is a conflict between the road layout and landform that will require extensive and expensive earthworks. The rigid grid design of the proposal provides little scope for directing stormwater into appropriate flow paths.

The Telstra Canberra telecommunications backbone is adjacent to the site. This would most likely need to be moved as part of the infrastructure works; these costs have not been considered. Also the need to move the high pressure gas line running adjacent to Dudley Street has not been considered.

The stormwater detention volume, when revised to apply the recently updated Bureau of Meteorology guidance, is nearly doubled. No open areas have been set aside in the layout for the necessary detention ponds.

Existing sewerage infrastructure was built in the 1940s; previous studies and advice from ACTEW AGL suggest that existing sewer and water infrastructure is incapable handling the demands of a development any greater than 25 dwellings. Upgrade of the main sewer lines would require digging up the Royal Canberra Golf Course and Novar Street – the suburb's main access road.

Yarralumla has ageing power infrastructure and regular outages. No assessment of the capacity of the existing electricity infrastructure to meet the additional requirements of the new development has been made or costed. The high voltage power lines crossing the site will need relocation – also not assessed or costed.

The costs of road construction for the proposed development could be in the order of \$62m to \$83m based on recent projects.

- 10.1 The proposed development assumes adequate existing roads, transport services, electricity, potable water, storm water, and gas and sewerage services. No assessment has been made of the need for any upgrades and thus no provision made for any such costs.
- 10.2 Existing data and analysis show that existing infrastructure is likely to require additional significant investment:
- *ACTPLA (2005) The Yarralumla Brickworks and Environs Planning Review for ACT Planning & Land Authority Prepared by Susan Conroy & Munn Sly Architects.*
 - *NCA (2012) National Capital Authority 'Assessment of Three Sites for Diplomatic Use' Report by SGG Economics & Planning*
 - *SMEC (2011) Final Report – Options and Evaluation Canberra Brickworks and Environs Planning Strategy: Traffic, Transport + Infrastructure*
 - *SMEC (2013b) Final Report Canberra Brickworks and Environs Options & Evaluation Report Update for Land Development Agency 17 December 2013*
- 10.3 The costs of such investment will add significantly to the overall cost of the development and are likely to affect its financial viability.
- 10.4 In regard to storm water there and the building layout (SMEC 2013b) advises, 'the earthwork required for the proposed layout, to confine drainage to the road network and allow for adequate sight distance at intersections, is likely to be extensive because of the conflict between the road layout and landform. The grid system provides little scope for directing stormwater into appropriate flow paths away from potential building pod areas.' (page 40-41).
- 10.5 There is a requirement that 'The development of the study area will require post development stormwater discharges to be less than or equal to the pre-development conditions.' (SMEC 2011; SMEC 2013a). The stormwater detention volumes are estimated in the reports. The reports suggest stormwater detention basins could be located at the extension of Maxwell Street and on either side of Dunrossil Drive. This would apply the principles of best practice water sensitive urban design (WSUD). The stated alternative would be underground Atlantis Cells. The proposed development has not set aside areas and it has not been taken into account in the costing.
- 10.5 If the Australian Standard AS/NZS 3500.3 Clause 3.3.5 is applied, using the recently updated Bureau of Meteorology rainfall intensity tables, then the detention volume would be between 4781 cubic metres for a 50 year period and 5628 cubic metres for the 100 year period. This would nearly double the volume and if this is the case would impact on the stormwater and detention pond infrastructure required. The stormwater mains in Yarralumla run through the Royal Canberra Golf course and down the length of Novar Street – the suburb's main street. The impact and associated of any upgrade costs have not been taken into account.

- 10.6 In regard to road works and road infrastructure the proposed development requires 4.8km of roads which is costed at \$18.5m (SMEC 2013b). If a 20% contingency is added would be about \$22m. This is \$3875 linear metre for total road construction costs. The preliminary estimate for the bulk earthworks for 200 000 cubic metres is \$3.5m.
- 10.7 More detailed assessments including the geology, bulking, transport and load bearing capacity (Californian Bearing Ratio which determines the type of road) will impact on the type of construction required and cost. The cost of earthworks for the proposed development site for example could well nearly double to around \$6.5m when all such factors are taken into account.
- 10.8 An assessment the likely final road construction costs for the proposed development can be made based on recent road works in the area. The recent completion in 2012 of the work on Cotter Road between Streeton Drive and Tuggeranong Parkway cost \$14m for 800 metres of road (Canberra Times 2012). Half of the roads in the proposed development are of similar dimensions of between 20m and 30m wide and relocation of services will be required. This gives an estimate of total road costs for the proposed development of \$62m to \$83m. Such costs would further impact on the feasibility and viability of the proposed development.
- 10.9 Regarding communications the SMEC (SMEC 2013b) report goes on to state that ‘the remainder of the study area comprises undeveloped land and road reserves areas....[that] has some significant ICON (high security telecommunications) fibre optic cabling crossing the site....development is expected to require the relocation of these services in the perimeter of the study area’ (page 48).
- 10.8 The costs of relocating ICON are unknown but could be up to \$5. Similarly the main Telstra telecommunications backbone for Canberra runs down Kent and Novar Streets and relocation may be necessary as part of intersection signalisation in the absence of an Interchange. This would be high cost and high risk with liability for outages running in the millions of dollars per minute, and should be taken into account in costing the proposed development.
- 10.9 In regard to electricity there has been no assessment to date of the civil infrastructure costs likely to be incurred in getting power to the site. The report (SMEC 2013b) states that ‘further investigations will be required to ascertain the energy requirements of the development and if network upgrades are required’ (Page 54).... Additionally there are high voltage overhead lines crossing through the undeveloped area which will similarly require relocation’ (page 48).
- 10.10 In regard to water there has been no detailed assessment of requirements. For example one report (SMEC 2013b) ‘expects the existing water distribution network will be adequate to accommodate the proposed development’ (page 50).

- 10.11 Another earlier report ACTPLA (2005) report comments that
 ‘ActewAGL has confirmed the adequacy of the existing 100 & 150~ mains supply the likely demands of the proposed multi-unit development. There is however some evidence that the existing infrastructure would not be capable of handling the demands of a development significantly greater than 25 dwellings in size’ (page 39).
- 10.12 In regard to sewerage the SMEC report (2013b) comments that
 ‘The existing sewerage facilities in the surrounding area are also understood to be adequate to accommodate the development with infrastructure existing to the northeast and within Yarralumla and to the south on the southern side of Yarralumla Creek’ (Page50).
- 10.13 Two reports (NCA 2012, ACPLA 2005) point to the need for a major upgrade to the sewer infrastructure. The National Capital Authority (NCA2012) report advises that in regard to the area that there is ‘no existing sewer within the site’ and there are four 150mm pipes in adjacent housing areas (page 68-69) and concludes that ‘a sewer servicing constraint will mean high costs on part of the site’ (page 73).
- The ACTPLA (2005) report states
 ‘ActewAGL has confirmed the adequacy of the existing 100 & 150~ mains supply the likely demands of the proposed multi-unit development. There is however some evidence that the existing [sewer] infrastructure would not be capable of handling the demands of a development significantly greater than 25 dwellings in size’ (page 39).
- 10.12 The sewerage infrastructure in Yarralumla dates from the 1940s. Many dwellings are still connected through end of life clay pipes that are cracked at the junction with the main sewer. A number of dwellings adjacent to the proposed development are not even connected to the stormwater system. Stormwater and sewers regularly block and flood at present that is without the addition of 1600 new dwellings.
- 10.13 To upgrade the main sewers would require digging up the length of Novar Street, across The Royal Canberra Golf Course or trenching several kilometres across the Curtin Horse Paddock, which is where the main sewer lines are located.
- 10.14 Overall it seems unlikely that the existing services would be adequate for the proposed development and that a comprehensive assessment is essential to identify the investment in upgrades would be necessary and should be included in the costs of the proposed development.

11. No Provision of Retail or Community Facilities & Inadequate Parking at Yarralumla Centre

Key Points

There are no new community facilities proposed to service the proposed development – no schools, community spaces or retail outlets close to the new housing.

The 15000sqm of commercial space planned is located on the south side of Adelaide Avenue (across a 6 lane highway) and is intended to service the West Deakin business area.

The local Yarralumla Centre (Bentham St Shops) has one small supermarket and parking for 46 cars. No consideration is given to how an additional population of 3840 will be able to access and park at the closest shops.

Without adequate provision of retail and community facilities close to the proposed development, it will overwhelm the existing Yarralumla suburb facilities and pose significant access and traffic safety issues at Yarralumla Centre.

- 11.1 The proposed development provides no new community facilities (e.g. schools, community spaces). The only additional retail facilities proposed are 15000sqm of commercial space (apparently equivalent in size to a Bunning's Warehouse), to be located on the south side of Adelaide Avenue, and thus inaccessible to the proposed development, except by car. This retail development is intended to service the West Deakin business area.
- 11.2 The proposed development therefore relies on existing retail outlets and services in 'Yarralumla Centre' Bentham Street. The Yarralumla Centre and parking facilities are not adequate to cope with the proposed development.
- 11.3 The core of the local Yarralumla Centre is a small supermarket and parking for just 46 cars. Based on its current commercial space, it requires an estimated 255 car parking spaces within a 200m radius. Current congestion in the surrounding streets has led to significant accident and safety issues. The ACT Government Territory and Municipal Services (TMS ID 790973 April 2014) has advised that:
- 'The supplied accident data for Bentham St (Jan 2008 -Dec 2012) revealed a significant crash history involving parking/reversing vehicles (total of 40 crashes, one involving a pedestrian).
- Referring to the Australian Standards for on street parking (copy attached), the geometry of Bentham St does not comply with the minimum requirements for 90 degree angle parking (existing), or a two-way 60 degree angle parking scheme.'
- 11.4 In its current configuration, the Yarralumla Centre would not be able to service an additional 3840 people and 2240 cars parking. In addition there will be a need to upgrade intersections in the suburb to avoid major congestion and gridlock.

- 11.5 The streets of the proposed development will connect through the existing suburb streets of Maxwell-Weston Street and Abbott Street that intersect with Novar Street. These streets will become a through route and be heavily used for access to the Yarralumla Centre by residents of the new development. Abbott Street is narrow and winds and is unsuitable as a major thoroughfare. The Maxwell Street and Weston Street intersection with Novar Street has only Stop/Give way signage there is no roundabout and already has a high accident rate. Novar Street is the suburb's main street and has very heavy traffic so vehicles from the new area will have difficulty both turning into Novar Street and crossing it.
- 11.6 There are no pedestrian crossings in Yarralumla, so residents who already experience great difficulty in crossing Novar Street will find it dangerous in future with increased traffic flows around the Yarralumla Centre.
- 11.7 A development of this size requires community and retail facilities within the proposed development's residential area: without these, there will be significant traffic, parking and safety risks that will overwhelm the Yarralumla Centre.

12. Loss of Open Spaces and Active Recreation (Green Circuit and Burley Griffin Buffer Zone)

Key Points

Yarralumla comprises only 1.8% urban open space (ACT Government 2011). There is only one suburb that has less open urban space (Forrest at 0.6%); Forde has 38.7%, Amaroo 28.7% and Crace 13.3%.

Some 77% of Yarralumla is 'designated land' that is adjacent to Lake Burley Griffin is under Commonwealth control through the National Capital Authority and cannot be developed for residential purposes.

The proposed development will remove 38 ha of urban open space. This includes the area most highly valued by the community for active recreation: the 'green circuit' and the Burley Griffin buffer zone separating town centres.

The proposed development offers a few small disconnected parks of about 1 ha in total designed solely for passive recreation. Overall this is a significant loss of open green space and active recreation amenity.

The proposed development builds over Griffin's green buffer between central Canberra and the satellite towns of Woden, Weston Creek and Belconnen, including part of the original Westbourne Woods. City planning principles are severely compromised by building houses on a ridge line and eliminating the visual and environmental green buffer zone between Canberra and its town centres.

The proposed development eliminates the block zoned PRZ1 Urban Open space between Kintore Crescent, Novar Street and Dudley Street.

- 12.1 The proposed development starts from a premise that loss of 38ha of urban open space in Yarralumla will not have significant impact on the amenity and biodiversity of the suburb:
- ‘Yarralumla is well provided with local open spaces, including sports fields, urban open space and green corridors supporting pedestrian networks through the suburbs and to Lake Burley Griffin’ (LDA 2013 page 9 and 16).
- 12.2 ABS Census data shows that Yarralumla comprises only 1.8% urban open space, 0.7% community facilities and 1.9% commercial use; the total area of residential land is 16.5%, with designated land that is subject to control by the Commonwealth Government and cannot be used for development occupying 77% of the suburb (ACT Government 2011). A comparison with other suburbs is revealing. There is only one suburb Forrest that has less open urban space at 0.6%, whereas Forde has 38.7%, Amaroo 28.7% and Crace 13.3%.
- 12.3 The proposed development will remove 38ha of urban open space in Yarralumla, including the area most highly valued by the community for active recreation: the ‘green circuit’. This area of PR22 land is open woodland and grassland and is heavily used by the community for active recreation during the day and late evening.
- 12.4 Part of the ‘green circuit’ is the historic ‘Uriarra Track’, which along with the other clearly defined tracks are used by families, adults and children for walking, cycling, running and exercising dogs. These tracks are used by the community as an active exercise circuit that can be clearly seen from Google earth (see Fig.4). Being able to go around a green circuit is the most highly valued aspect of this open space identified in community consultation.

Fig.4 - Current active recreation track – green circuit (white line) is highly valued by the community



Fig.5 - Development eliminates green circuit – (black line)



- 12.5 LDA in the 2014 FAQ's ([http://www.lda.gov.au/Canberra/the study area](http://www.lda.gov.au/Canberra/the_study_area)) states:

'We understand that open space is highly valued as an important community asset in the Yarralumla / Deakin area. A Canberra-wide survey found that 75 per cent (of the 800 respondents) believed open space should remain an important part of the Canberra Brickworks and Environs. ...Members of the community have also told us that they value the 'untamed' nature of existing open space areas.'
- 12.6 Existing regular use by the community of this open space is disregarded in the proposed development. Instead, the proposed development provides a linear formal park, (West Ridge Park) and a separate but totally disconnected quarry park at the Canberra Brickworks Quarry. These provide for passive recreation (e.g. sitting, picnicking). The public land between the Brickworks site and the Royal Canberra Golf Course appears to be retained as public open space. Some footpaths through high density housing may provide access between these individual elements, but the continuum open green spaces is lost and they are now disconnected (see Fig.5)).
- 12.7 The proposed development also eliminates the block zoned PRZ1 Urban Open Space between Kintore Crescent, Novar Street and Dudley Street which is treed parkland.
- 12.8 The proposed development also disregards the basis for the green zone to the west of Yarralumla, which is part of the original Westbourne Woods and Burley Griffin's planned buffer between inner Canberra and the satellite towns of Woden, Weston Creek and Belconnen. As with other Canberra buffer zones, this area contains a ridge line and it compromises city planning principles to build houses on this ridge top, thereby eliminating this buffer zone, which provides visual separation between town centres.
- 12.9 The proposed development removes a highly used and highly valued community asset -- the green space circuit for active recreation—as well as eliminating the Burley Griffin buffer zone, which provides visual separation between town centres and the Kintore Crescent parkland. These community amenities should be preserved, not removed. The strategy and the LDA acknowledge the importance of this green open space but it is neither maintained nor enhanced by the proposed development.

13. Loss of Biodiversity – Natural Temperate Grassland and Golden Sun Moth (*Synemon plana*)

Key Points

The proposed development area comprises 1.5ha of Natural Temperate Grassland that is the habitat of the Golden Sun Moth. Both the grassland and the Golden Sun Moth are protected under Commonwealth and ACT legislation.

The Golden Sun Moth is listed as critically endangered and loss of more than 0.5ha of its specific habitat requires referral as a matter of National Environmental Significance under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

The proposed development will result in the complete loss of the full 5ha of Natural Temperate Grassland community habitat of the Golden Sun Moth which has had a significant and long term historical presence on this site.

- 13.1 The proposed development will eliminate an area of 1.5ha of Natural Temperate Grassland that is habitat for the critically endangered Golden Sun Moth (NCA (2012) (see Fig.6). Its specific habitat is native grasslands and grassy woodlands containing wallaby grass (*Austrodanthonia* spp.), speargrass (*Austrostipa* spp.), and *Bothriochloa*, as well as in degraded grasslands dominated by the exotic Chilean needlegrass (*Nassella nessiana*). The Natural Temperate Grassland between Denman and Dudley Streets is dominated by *Austrostipa* (Speargrass) and *Austrodanthonia* (Wallaby Grass)
- 13.2 The Golden Sun Moth is sensitive to development activities that result in loss of habitat due to its limited dispersal ability; specific floristic and structural habitat requirements; isolated and fragmented distribution; seasonal lifecycle (making it cryptic for many months of the year) and; short adult lifespan and limited mobility of the females.
- 13.3 The Golden Sun Moth is listed as critically endangered under the Australian Government *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Listed threatened species and ecological communities are a matter of National Environmental Significance. Under the EPBC Act an action will require approval from the Minister if the action has, will have, or is likely to have a 'significant impact' on a matter of National Environmental Significance. This applies to grassland and open grassy woodland habitat across the current and historic range of the golden sun moth, including the Natural Temperate Grassland of the ACT. The Golden Sun Moth is also listed as endangered under the *Australian Capital Territory Nature Conservation Act 1980*.

Fig.6 - Proposed development and area of Natural Temperate Grassland and Golden Sun Moth (*Synemon plana*)



LEGEND

- Golden Sun Moth Habitat (5Ha)
 - Wet Themoda Grassland
 - Austrodanthonia Grassland
- } Natural Temperate Grassland (1.5Ha)



- 13.4 The Golden Sun Moth has a long and successful historical presence on the site. Surveys found them in considerable numbers in 2009 and again on survey in 2011. Residents, including entomologists, report seeing low level clouds of Golden Sun Moth in most years during the adult breeding season in November.
- 13.5 The area described above (approximately 1.5ha has been determined to be a Complementary Conservation Site (Category 2) with a moderate Botanical Significance Rating (ACT Government 2005). Sites in this category may contain threatened species habitat that is not key habitat, but complements or buffers core conservation grassland or habitat. Populations of threatened species in these areas are considered to be viable in the medium term. The areas of Golden Sun

Moth habitat and Golden Sun Moth could be expected to persist if current management continues.

- 13.6 Such loss of biodiversity is in conflict with the Spatial Plan 2004 principles. The proposed development will require consideration under the *Australian Capital Territory Nature Conservation Act 1980* and referral and assessment under the EPBC Act as it will result in the loss of listed habitat.

14. Required Bushfire Protection

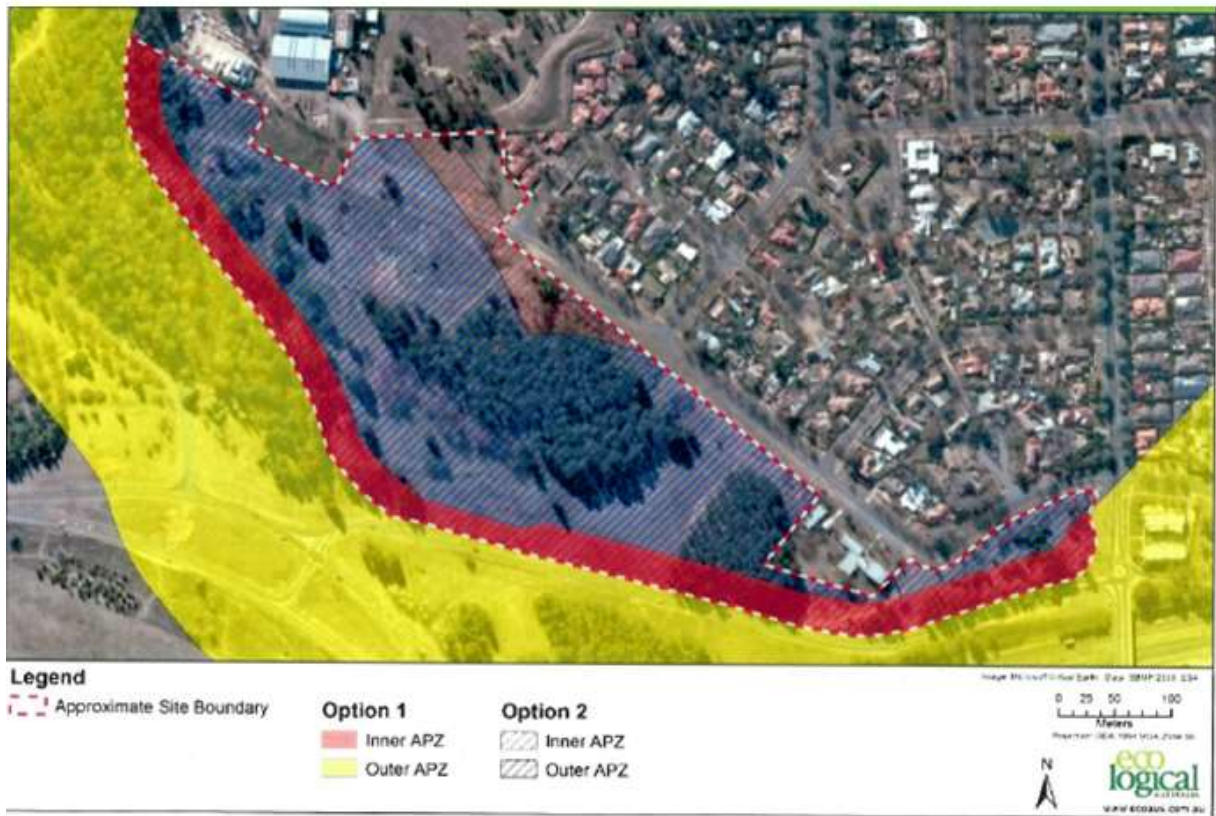
Key Points

There has been no consideration given in the proposed development to bushfire protection requirements for Asset Protection Zones (APZs) and how they would impact on the developable area. The area has previously been subject to bushfires.

The Asset Protection Zones (APZs) required have been assessed by the National Capital Authority (NCA 2012) and it appears that they cannot be achieved with the current proposed development, and to do so will reduce the developable area on the site and hence its feasibility.

- 14.1 In addition to satisfying stringent building construction standards under the provisions of the Building Code of Australia and Australian Standard 3959 (construction of buildings in bushfire-prone areas), any development of the Canberra Brickworks and Environs needs to be buffered from areas of adjoining vegetation by Asset Protection Zones (APZs).
- 14.2 There has been no consideration given in the proposed development to bushfire protection requirements and how they would impact on the developable area.
- 14.3 The site is located on the urban fringe of Canberra and was last subjected to a major bushfire during 1951-52, though the site was threatened during both the 2001 and 2003 bushfires. To the west of the site are the landscaped and bushland vegetation of the Royal Canberra Golf Club and the Government House estate. There have been landscape level fires of the open grassland in the past. In 2001 these fires jumped Adelaide Avenue to reach the Mint in Deakin.
- 14.4 The APZs required for new development in this area as assessed by the National Capital Authority (NCA 2012) are: a 30m wide inner APZ on the western and southern edge; a 20m wide inner APZ where grassland adjoins the boundary on the south-western corner; and a minimum 200m wide outer APZ where forest/shrubland adjoins the boundary along the western and southern edge.
- 14.5 These requirements are set out on Fig.7 (Option1) and it appears that this cannot be achieved with the current proposed development and to do so will reduce the developable area on the site and hence its feasibility. This needs to be taken into account in the assessment of the site.

Fig.7 - Bushfire requirements for site



15. No Restoration of Canberra Brickworks or Adaptive Re-use of Heritage Site

Key Points

Contrary to the stated aim of the proposed development strategy, the funding model advanced for the proposed development will not make possible either the 'Restoration of the Canberra Brickworks to create a major new destination in Canberra' (LDA 2013 page2.) or 'conservation of local heritage by the restoration of the Brickworks' (LDA 2013 page 26).

The commercial adaptive re-use of the Brickworks contemplated in the 2010 proposed development has now been assessed as unviable by the MacroPlan Dimasi 2013 (not in the public domain). This is unlikely to change as the LDA is required to deliver a 20% return on investment to the ACT Government.

A total of \$1.5m is available from the LDA to make safe the Brickworks for public access and \$2.9m from the ACT government for decontamination of the site. This funding amount is considered inadequate by a factor of ten to a hundred fold.

The proposed budget is not sufficient to remove contaminated soil from the site for the purposes of constructing the proposed two high rise buildings on top of the existing Asbestos Dump. Nor is it sufficient to decontaminate the remainder of the site. It is insufficient to 'make safe' the site for public access, stop further decay of the heritage buildings or stabilise the quarry park area for housing development and parkland.

Any proposed development should preserve, make accessible and enhance the heritage sites in the area, particularly the Brickworks site.

The Canberra Brickworks is registered on the ACT Heritage Places Register due to its historical value as a rare example of industrial manufacturing, for building materials for construction in the ACT from 1913 to 1976. The Commonwealth Heritage listing includes the nearby Government House and surrounding area on Dunrossil Drive (53ha). The ACT Government's listings include the Brickpits in the grounds of the Brickworks which are an important geological fossil containing formation.

The Canberra Brickworks Conservation Management Plan survey in 2010 identified 97 remedial works required to make the buildings stable and weather tight. The works identified are intended to conserve the buildings and slow any further deterioration in the short to medium term. The works are not intended to restore any of the buildings, but significant and costly work is required, in particular on the Staffordshire Kiln. There is no funding set aside for this purpose.

The proposed development for the Canberra Brickworks therefore merely allows 'managed decay' of the heritage Brickworks buildings.

15.1 The stated key features of the proposed development for the Canberra Brickworks include:

- Restoration of the Canberra Brickworks to create a major new destination in Canberra. (LDA 2013 Page 3)
- For the first time the Canberra Brickworks is made a part of inner Canberra rather than a place apart. (LDA 2013 Page 3).
- The significant heritage values of the Canberra Brickworks, its quarry and curtilage that are fully respected and made accessible to a wider Canberra audience. (LDA 2013 page 25)
- LDA investment of \$1.5m in the Brickworks to make them safe for public access.(LDA Website <http://www.lda.act.gov.au/canberra> 17 June 2014)
- The ACT Government's commitment of \$2.9 million towards remediation of contaminated soil within the site to make the area safe for future users. (LDA Website <http://www.lda.act.gov.au/canberra> 17 June 2014)

15.2 Contrary to the stated aim of the proposed development strategy, the funding model advanced for the Proposed Development will not make possible either the 'Restoration of the Canberra Brickworks to create a major new destination in Canberra' (LDA 2013 page 2) or 'conservation of local heritage by the restoration of the Brickworks' (LDA 2013 page 26).

15.3 The commercial adaptive re-use of the Brickworks contemplated in the 2010 proposed development has been assessed as unviable by the MacroPlan Dimasi 2013 (not in the public domain). This is unlikely to change as the LDA is required to deliver a 20% return on investment to the ACT Government.

15.4 Any proposed development should preserve, make accessible and enhance the heritage sites in the area, particularly the Brickworks site.

15.5 Areas of Heritage Value

15.5.1 A number of areas within the vicinity of this site are either registered or provisionally registered on the ACT Heritage Register, reflecting the area's industrial heritage. These sites include the early Canberra Brickworks Housing Precinct (Hutchins and Bentham Streets), the old Canberra Brickworks, Garbage Incinerator and Outfall Sewer. Westbourne Woods is also listed and is an arboretum designed by Weston and established between 1914 and 1918. The extensive plantings extend to the north west of the site, and are located within the Royal Canberra Golf Course and near the Forestry Precinct in Banks Street. The Commonwealth Heritage listing includes the nearby Government House and surrounding area on Dunrossil Drive (53ha).

15.5.2 The National Trust (ACT) has recorded a number of sites in this vicinity including Canberra Brickworks, Canberra Incinerator and the Yarralumla Brickpits (geological fossil formation). The Trust's recorded sites do not have legal status but two of these sites are also included in the ACT Government's listings. The Brickpits are located in the grounds of the Brickworks.

- 15.5.3 Some of the remnants of the former Canberra Brickworks Railway are located on the western part of the site and have been listed on the ACT Heritage Register. The railway is significant for its association with the early construction of the national capital from 1923 until 1927. The brickworks railway transported up to six million bricks per annum for Canberra's construction.
- 15.5.4 The Canberra Brickworks Heritage buildings and the site as a whole including the quarry is of historic significance given its role in federation and the establishment of Parliament in the National Capital.
- 15.6 The Canberra Brickworks**
- 15.6.1 The Canberra Brickworks is registered on the ACT Heritage Places Register due to its historical value in industrial manufacturing, specifically for the supply of materials required for building construction in the ACT from 1913 to 1976. The Brickworks is a rare example of the type of large urban brickworks established in the country from the early 20th Century (see Fig 8).
- 15.6.2 The operation of the Brickworks ceased in 1976 and public access and use of the buildings for markets was stopped in 1985 because the building structures had become unsafe. Since then there has been an absence of maintenance of the kilns and infrastructure. This neglect of the structures over 38 years has led to a continual deterioration of the entire fabric of the place. For some five consecutive years the Canberra Brickworks was in the ACT National Trust Top 2010 Heritage at Risk Nominations.

Fig.8 - Canberra Brickworks heritage buildings



15.6.3 The legal and governance framework under which the LDA and the ACT Government operates, however, impose constraints that militate against the remediation, decontamination, make safe, restoration and adaptive re-use of the Brickworks site and its heritage buildings. These include:

- The overall costs of the proposed development need to be paid for by revenue from the land sales by the LDA.
- The LDA is required to deliver a 20% return on investment to the ACT Government.
- The revenue remaining from LDA land sales after expenses have been paid goes to consolidated revenue.
- The LDA's legal and governance framework (ACT 2012, LDA 2014) does not provide a mechanism for the LDA to directly fund and manage restoration of the Canberra Brickworks or its adaptive re-use.
- The LDA's revenue from land sales will need to pay for the upfront investment in infrastructure and services and interest on monies borrowed for that purpose, hence surplus revenues would not be returned to consolidated revenue until 2020 or later.
- The ACT Government has an annual formal Budget process for allocation of funds under which health and education have first call.
- The ACT Government does not hypothecate revenue for specific purposes so LDA land sales revenue from the proposed development cannot be directly tied to funding the restoration of the brickworks.
- As of the 2014-15 Budget the ACT Government is running a \$300m deficit

This is evidenced by the LDA statements in its FAQ's (LDA 2012) that

'it is the Government's goal for the Brickworks and Environs project to be cost neutral and for the heritage conservation, site improvements and adaptive reuse to be able to pay for itself' (page 5).

'As occurs elsewhere in LDA estates, necessary infrastructure works would occur early in the process and the proceeds of individual land sales would go to the LDA at the time of the sales' (page 6).

- 15.6.4 The LDA statements in the 2014 FAQ's ([http://www.lida.gov.au/Canberra/the study area](http://www.lida.gov.au/Canberra/the_study_area)) show clearly that adaptive reuse of the Brickworks does not form part of the strategy or the proposed development:

‘The ACT Government is not precluding any future options for this site’

‘Commercial feasibility studies undertaken by MacroPlanDimasi in 2012-13 indicate that independent private sector investment in the adaptive reuse of the Brickworks heritage buildings... is unlikely to be viable’

- 15.6.5 There are only two quanta of funding committed to Brickworks site. There is the LDA investment of \$1.5m in the Brickworks to make them safe for public access and the ACT Government’s commitment of \$2.9 million towards remediation of contaminated soil within the site to make the area safe for future users and for new perimeter fencing.

- 15.6.6 This total of \$4.4m is not adequate for the most basic work. It is not sufficient to remove contaminated soil from the site for the purposes of constructing the proposed two high rise buildings on top of the Asbestos Dump. Nor is it sufficient to decontaminate the remainder of the site. Neither is the amount sufficient to ‘make safe’ the site for public access, stop further decay of the heritage buildings or stabilise the quarry park area for housing development and parkland. These issues will be addressed in turn.

15.7 Contamination of the Brickworks Site

- 15.7.1 Three environmental studies of the Brickworks site contamination (Connall Wagner 2001; Robson Laboratories Pty Ltd 2006 and Robson Laboratories Pty Ltd 2007) show many areas of the site are likely to be contaminated, with asbestos being of particular concern.

- 15.7.2 The ACT Government is providing \$2.5m for remediation of 0.45ha of the Asbestos Dump to allow for two eight storey high rise housing developments. This quantum is considered to be an under estimate by a factor of 20 to 30 (Yarralumla Residents Association 2014 - Attachment A). The remediation represents only 10% of the Brickworks site; remediation of the contamination of the whole site could be in the order of \$100m. Decontamination of only 0.45ha is not making the site safe for public access or alternative uses.

15.8 Site stabilisation

- 15.8.1 Considerable data indicates that the Brickworks site is unsuitable for housing because of unstable areas. As a consequence development will be difficult and costly, particularly for medium density housing proposed on the quarry rim adjacent to Schomburgk Street.

- 15.8.2 The issue of site instability has not been addressed in relation to the costs and safety of establishing the proposed Quarry Park.
- 15.8.3 The quarry, and other parts of the Brickworks site have significant areas of loose fill. This fill comprises whole brick, cobbles, boulders of siltstone, quarry off cuts, glass, bitumen, ash and other anthropogenic materials. This fill is uncompacted and prone to collapse upon disturbance. Many of the geotechnical sampling bore holes collapsed during sample drilling. Removal of fill will be required for any development of the area (SMEC 2013b).
- 15.8.4 Previous investigations of this site during the 1981 liquidation of previous owner Allan Marr's business found most of this area unsuitable for housing development because of instability and contamination issues. It was for that reason that only Lane Poole Place and Woolls-Schomburgk Street adjacent to the quarry were able to be commercially developed for housing (Personal communication, Liquidators for Alan Marr May 2014).
- 15.8.5 The difficulty, full costs and safety issues of decontaminating and stabilising the Brickworks site has not been included in the design, density and feasibility of the proposed development. The available data suggests the housing development in the Brickworks site is not viable.

15.9 Access to Brickworks Site

- 15.9.1 The 2013 proposed development makes no provision for road access to the Brickworks heritage buildings, or for public or commercial car parking at the Brickwork. The construction of 4-6 storey apartment blocks directly on the perimeter of the current entrance to the Brickworks effectively precludes the provision of space for future adaptive re-use and public access.

15.10 Make Safe Brickworks Perimeter

- 15.10.1 The \$2.9m 'make safe' commitment by ACT Government includes expenditure of \$255 000 for a new fence to secure Canberra Brickworks site which was completed in May 2014. The design and construction of the security fence has significant problems; vandals and trespassers can still readily gain access (see Fig.9). This does not engender confidence in any future make safe measures.

Fig.9 - Canberra Brickworks 23 June 2014 – new make safe fence not so secure....



15.11 Condition and Preservation of Canberra Brickworks heritage building infrastructure

- 15.11.1 The funding of \$1.5m set aside by the LDA for 'make safe' of the Canberra Brickworks as part of the proposed development does not provide for safe public access, restoration or adaptive re-use of the site. The funding is clearly inadequate and certainly does not provide for the stated 'Restoration of the Canberra Brickworks to create a major new destination in Canberra' (LDA 2013 page 2) or the 'conservation of local heritage by the restoration of the Brickworks' (LDA 2013 page 26).
- 15.11.2 The 2013 proposed development differs markedly from community consultations in the preparation of the 2010 proposed development, where restoration and adaptive re-use of the Brickworks site was a key priority for the community. These views remain strong among the community in 2014.
- 15.11.3 The operation of the Brickworks ceased in 1976 and public access and use of the buildings for markets was stopped in 1985 because the building structures had become unsafe. Since that time the kilns and other building infrastructure have not been maintained and this neglect of the structures for over 38 years has led to their deterioration.
- 15.11.4 A site survey was undertaken on 17 February 2010 (Conservation Management Plan, LDA 2010), to assess the existing conditions and identify remedial work required to make the buildings stable and weather tight. The works identified are intended to conserve the buildings and slow any further deterioration in the short to medium term. The works are not intended to restore any of the buildings and ongoing maintenance works would still be required.

- 15.11.5 The work required to make the Brickworks buildings safe is documented in the Conservation Management Plan prepared for the LDA by Lovell Chen (LDA 2010 Conservation Works Schedule, Attachment B). This work schedule is well beyond the \$1.5m allocated by the LDA for 'make safe' works let alone the work required to remediate or restore the Brickworks.
- 15.11.6 The survey identified 97 remedial works required to make the buildings stable and weather tight to conserve the buildings and slow any further deterioration (Attachment B). The survey found the buildings in variable condition and a number suffering from vandal damage. Most of the equipment was removed following closure of the Brickworks leaving openings in walls and roofs. Some works were carried out after the closure of the brickworks but were often unfinished, abandoned or subsequently removed. Those 97 items of conservation works listed in the Conservation Management Plan are essential to prevent further decline of the buildings.
- 15.11.7 Some of the essential maintenance works are significant, particularly for the Staffordshire Kiln, which is of particular heritage value. The Conservation Management Plan states:
- 'Kiln 1, the Staffordshire Kiln (Building 4), has significant structural issues. Many of the kiln chambers are distorted although they appear to be stable at present. The arched entrance brickwork is failing in many of the chambers. The arched openings appear to have inadequate footings, probably due to movement in the flue tunnels beneath the outer walls of the kiln. Rebuilding of the worst of these is recommended in the near future.'

Fig. 10 - Condition of Canberra Brickworks buildings 2010



- 15.11.8 The proposed development is not a feasible strategy for the Brickworks site based on the environmental audits to date and the 1981 investigations for housing development (see 15.9.2).
- 15.11.9 The proposed development contemplates the LDA provide an initial investment of \$1.5m in the Brickworks to make them safe for public access and an ACT Government commitment of \$2.9m towards remediation of contaminated soil within the site to make the area safe for future users. There is no hypothecation of the income from land sales to the Canberra Brickworks remediation. All income from land sales goes to consolidated revenue and then funds are allocated by the ACT Government based on policy and the budget process.
- 15.11.10 Commercial adaptive re-use has been assessed as unviable and this is unlikely to change as the LDA is required to deliver 20% return on investment from its land sales. The proposed development for the Canberra Brickworks therefore merely allows 'managed decay' of the heritage Brickworks buildings. This is unacceptable to local residents and the broader Canberra community.

16. Relationship to the Spatial Plan 2004

This proposed development of the Canberra Brickworks and Environs fails on most of the seven Spatial Plan 2005 principles namely 3, 4, 5, 6, and 7.

16.1 The Spatial Plan provides strategic planning direction for the ACT and is one the elements of the framework within which the Territory will develop over the next 30 years. The key principles underpinning the Spatial Plan are to:

1. Contain growth within 15km of the city centre to reduce sprawl and protect biodiversity.
2. Increase the number of homes within 7.5km of the city centre to provide a wider range of housing close to employment and services.
3. Locate new residential areas close to town centres and transport routes.
4. Locate employment close to residential areas and transport routes.
5. Provide good travel connections to minimise journey times and trip length.
6. Protect areas of high conservation value from the impact of development.
7. Protect and enhance important assets.

16.2 This proposed development of the Canberra Brickworks and Environs fails on at least five of these principles namely 3, 4, 5, 6, and 7.

17. Social and Economic Impact on the Local Community

Key Points

The proposed development does not take into account the social, economic and environmental impact of the proposed development on the community.

Land release and construction of the proposed development is intended to take place over a period of eight to ten years. The development site forms part of Yarralumla. The community will be subject to congestion by through traffic, heavy construction haulage, asbestos removal, and fit out traffic for this entire period.

The ongoing noise and traffic from this construction will impact on the liveability of the suburb. There will be an impact on house values and properties may become unliveable and unsellable.

Compensation from the ACT Government may be sought as well as financial assistance for noise mitigation.

- 17.1 The proposed development assumes no negative social, economic and environmental impact of the proposed development on the local community, both over the 8-10 years of the proposed land releases and post-construction. The available information suggests that this assumption is false: local resident's health, amenity and property values will be negatively affected.
- 17.2 Land sales and construction on the proposed development site is planned for a period exceeding eight years. This means more than eight years of heavy construction traffic and using existing suburban roads, undertaking earthworks, trucking soil, and pouring concrete and making deliveries from 7am to 5pm Monday to Saturday. Residents are also very concerned about the removal of asbestos from a known Asbestos Dump and how this will be carried out without affecting the health of existing and future residents.
- 17.3 No other urban infill to date in the ACT has been of this scale or duration. Projects of this scale have only been undertaken for the construction of new suburbs on the rim of Canberra at a distance from existing residential areas, not in the middle of an existing suburb and not for close to a decade. Works of this scale cannot be undertaken without significantly increasing traffic flow at and near the site, and maintaining continuous high levels of noise. This will turn a significant part of Yarralumla into a noisy construction zone.
- 17.4 It seems unlikely that construction on this scale could continue for a decade without affecting the liveability and amenity of the existing suburb and its property values. Well documented cases in Sydney and Melbourne (e.g. of noise and traffic associated with construction of a desalination plant) suggest that properties close to the development become unliveable and unsellable.

- 17.5 This raises the question as to what assistance to local residents will be provided by the LDA or the ACT Government. In equivalent situations, such as the noise corridor for the extension of an airport's runway, those impacted have been provided with financial assistance to cover the cost of fully double glazing their residences..

18. Conclusion: Viability of the Proposed Development and Preferred Option

Key Points

The scale and density of the 2013 proposed development seem to be driven by the need for revenue from land sales. It maximizes the dwellings per hectare at a level that is unprecedented for urban infill for Canberra, or indeed for any existing town centre in the ACT.

Given the trend in reducing demand housing and reduction land revenues there is no unmet current or future housing demand. The case for proposed development for infill of the Canberra Brickworks and Environs on this scale and density is not made.

When the full costs of the proposed development to Canberra are considered there is a negative impact on Canberra ratepayers of over \$188m.

The proposed development does not provide for the 'Restoration of the Canberra Brickworks to create a major new destination in Canberra' and this is unacceptable to the local community.

- 18.1 The scale and density of the 2013 proposed development seem to be driven by the need for revenue from land sales. It maximizes the dwellings per hectare at a level that is unprecedented for urban infill for Canberra, or indeed for any existing town centre in the ACT.
- 18.2 Land sales revenue would be in the order of \$120m to \$160m for the overall proposed development with sale of fully serviced blocks. However, the proposed development fails to fully cost the expenditure necessary to ensure safe and adequate traffic management and road upgrades to absorb a population increase of this size (see Section 4), the provision and upgrade of utilities and services within a suburb with ageing infrastructure (see Section 10), the effects of parking and pedestrian safety on a small existing retail hub that would need to service a population doubled in size (Section 11), the proposed development's lack of proximity to public transport (see Section 9).
- 18.3 The proposed development does not, contrary to its statement, provide for the 'Restoration of the Canberra Brickworks to create a major new destination in Canberra'. Instead, it provides a minimal budget that neither ensures necessary maintenance works nor adaptive re-use of the site, resulting in managed decay of the Brickworks, one of Canberra's most unique heritage sites (see Section 15).

- 18.4 When the full costs of the proposed development to Canberra ratepayers are considered, the economics make this proposed development unviable. Even in its current form, the proposed development will have a financially negative impact on the ACT Government's budget of over \$188 million for direct capital costs. That cost burden falls on the Canberra community as a whole and the additional flow-on costs would be at least the same order of magnitude (see Table 1).
- 18.5 Given the reducing demand for housing and reduction in land revenues in the ACT, there is a significant question about whether infill of the Canberra Brickworks and Environs to this scale and density is necessary, or will achieve its desired revenue targets.

Table 1

Canberra Brickworks & Environs - Assessment of total costs and revenues	
	\$ million
Capital Costs	
<i>The Adelaide Avenue/Cotter Road Interchange</i>	104
<i>Earth and Roadworks</i>	80
<i>Upgrade of connecting roads</i>	10
<i>Upgrade of Electricity, Water, Storm Water and Sewerage Infrastructure through Yarralumla</i>	15
<i>Relocation ICON and telecommunications</i>	5
<i>Brickworks access and parking to enable future use</i>	3
<i>Full decontamination of the Brickworks Site</i>	90
<i>Make Safe Brickworks Building</i>	20
<i>Stabilising Brickworks site fill – Quarry Park, proposed housing development sites</i>	8
<i>Decontaminating adjacent public land between brickworks and Golf Club</i>	3
<i>Landscaping development, Quarry and Westridge Parks</i>	10
Total Capital Costs	348
LDA Total Revenue	
<i>LDA Land sales fully serviced blocks</i>	160
Revenue less Costs	-188
Canberra Brickworks & Environs - Other significant costs not quantified	
<i>Shops, commercial and community services</i>	
<i>Parking Yarralumla Centre</i>	
<i>Inadequacy of Yarralumla Centre</i>	
<i>Traffic congestion in Cotter Road Adelaide Avenue intersection with Yarralumla and Deakin</i>	
<i>Traffic Congestion within Yarralumla</i>	
<i>Funding for restoration and adaptive re-use of the Brickworks</i>	
<i>Financial assistance for sound proofing houses on construction routes including double glazing</i>	
<i>Compensation for impact decade construction & development works on local residents and property values</i>	

A significant concern with the proposed development and the consultation process is that the major issues raised in the 2010 consultations and submissions have not been addressed. The changes that have been made create further significant impact and as such the 2013 proposed development is a regression from the 2010 proposal.

The development proposal does not address the principles goals and objectives of the planning framework in the ACT in a transparent and rigorous manner. This framework includes the National Capital Plan, The ACT Territory Plan, The Canberra Spatial Plan and the ACT Planning Strategy.

On the basis of this detailed analysis in this submission, which directly addresses the Community's concerns; the Yarralumla Residents Association calls for the current proposed development strategy and preferred option (LDA 2013) for the Canberra Brickworks and Environs to be withdrawn. A comprehensive analysis must be undertaken of the area and the issues identified in this and other submissions fully and transparently addressed. These issues include the scale and scope, impacts on the community, heritage and environment, the overall cost, feasibility and viability.

19. References

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SMEC (2013b) Final Report Canberra Brickworks and Environs Options & Evaluation Report Update for Land Development Agency 17 December 2013

SMEC (2013c) Draft Preliminary Geotechnical Site investigation for the Canberra Brickworks

Yarralumla Residents Association (2014) Submission on Development Application (DA) 201425325

20. Attachments

Attachment A

Yarralumla Residents' Association Submission 30 May 2014 on Development Application (DA) 201425325 for the removal of 9000m³ or 14,400 tonnes of contaminated soil from the Asbestos Dump at the Yarralumla Brickworks site Section 102 Block s7, 1 and 20 and Section 127 Block 1.

Attachment B

LDA (2010) Conservation Management Plan prepared for the Land Development Agency by Lovell Chen. Appendix B Conservation Works Schedule.

Yarralumla Residents Association Inc.

Yarralumla Residents Association Submission on Development Application (DA) 201425325

30 May 2014

The DA is for the removal of 9000m³ or 14,400 tonnes of contaminated soil from the Asbestos Dump at the Yarralumla Brickworks site Section 102 Block s7, 1 and 20 and Section 127 Block 1.

These Blocks are covered by the Commercial Zones Development Code and the Yarralumla Neighbourhood Plan.

The following key documents relevant to consideration of the DA:

Remediation Action Plan (includes Hazardous Materials) Draft Canberra Brickworks Remediation Project Block 1 Section 102 Yarralumla Canberra Central ACT March 2014 by Robson Environmental Pty Robson Remediation Plan)

Statement of Heritage Impacts Proposed Canberra Brickworks Remediation Project 29 March 2014 by Eric Martin and Associates for Capezio and Co on behalf of ACT Government (Heritage Impacts Report)

Cost Estimate Asbestos Dump Remediation Yarralumla Brickworks Yarralumla ACT, 20 March 2014 by Robson Environmental Pty (Robson Cost Estimate) (Attachment A)

Previous Environmental Assessments and Reports

Connell and Wagner 2001 - Appendix F-Brickworks Contamination Report

Robson Laboratories Pty Ltd (October 2006) 'Environmental Investigation –Audit Report Yarralumla Brickworks Block 1 Section 102 Yarralumla Canberra Central ACT. (Robson reference 3144_CL_EI Final_20061018).

Robson Laboratories Pty Ltd (2007) 'Remediation Action Plan – Asbestos Dump Yarralumla Brickworks Block 1 Section 102 Yarralumla Canberra Central ACT'. (Robson reference 3144_CL_RAP_20070612).

The DA should not be approved as it is based on inadequate analyses and assumptions that are flawed, inaccurate, and inconsistent with the regulatory framework applying to contaminated sites, in particular asbestos, in the ACT.

The Robson Cost Estimate is inadequate as it does not cover the scope of works outlined in the Robson Plan. The full cost is likely to exceed the Robson Cost estimate of \$2.347 million by an order of magnitude and will far exceed the ACT Government's Budget allocation of \$2.9 million (Attachment B) by up to 20 or 30 times. Moreover the Robson Cost Estimate does not provide for remediation of the site as a whole. If approved the remediation at the amount allocated by the ACT Government would not meet the regulatory requirements.

In addition the DA does not address a significant number of rules and criteria from the Commercial Zones Development Code stating that they are not applicable when clearly they are or that they are covered by the Robson Plan when they are not adequately addressed there.

Analysis, Assumptions and the Regularity Framework

The DA is applying to remediate the site for a specific future use. This future use is stated as high density residential land use (Robson Plan p 16). However such future use is not allowed under the existing zoning of the site. Moreover the remediation approach proposed ONLY provides for high density housing HIL level B under the ASC 2013 NEPM. This is where the ground surface is completely covered by buildings and hard surfaces so that people do not come in contact with the soil and includes dwellings with permanently paved yard space such as high rise and flats. In so doing this remediation approach precludes any other use such as lower density, provision of gardens and open space.

In addition the Robson Remediation Plan on which the DA is based does itself not comply with the regulatory framework in the ACT which this Plan also lists on page 12. In particular the:

National Environment Protection Council (NEPC1999) National Environment Protection (assessment of Site Contamination) Measure 1999). As revised 2013 – the ASC NEPM 2013.

Western Australia department of Health (DOH 2009) "Guidelines for the Assessment Remediation and Management of Asbestos Contaminated Sites in Western Australia (WA Guidelines)

The Robson Remediation Plan's Chapter 3 Remedial Goals and Options is instead based on the NSW DEC (2009) Guidelines for the NSW Site Auditor Scheme which does not cover asbestos remediation. Asbestos remediation is covered by the ASC NEPM 2013 and the WA Guidelines both of which have been adopted by the ACT.

The ASC NEPM clearly states that

5.2 Site Remediation

If adequate asbestos-contamination investigations and risk assessments have taken place, it should be possible to narrow down the most likely remediation options and to select one or a combination of them.

In undertaking the selection process, it is important that all options are considered and the preferred one should be supported by strong argument when compared with the others.

The main remediation options include: management in situ, treatment on-site, and removal of the contaminated soil from the site. Consideration should also be given to changing the final intended use, in order to manage the risk better

5.2.1 Management In situ

Predisposing conditions

Distribution of asbestos is difficult to determine;

Asbestos contamination covers a large area, for example > 2000 m²;

Contamination includes significant FA or AF;

There have been only preliminary investigations of the site with a small number of samples taken from one easily accessible area. Moreover the Remediation Plan only covers one small area of asbestos contamination at the Brickworks site. The Robson Plan states that the Asbestos Dump continues onto the public land adjoining the brickworks and Lane Poole Close and the Golf Club but assessment of this nor remediation is included in the assessment. Moreover the Robson Plan and the previous two assessments of site contamination, Connell and Wagner 2001 and Robson

Laboratories 2006 and 2007, clearly identify several other large areas of contamination, and also that fill has been previously moved around the site spreading the contaminated area. None of these other areas are assessed for remediation.

It is noteworthy that the Robson 2006 Environmental assessment recommended HIL level A but this has been reduced to level B in the 2014 Robson Plan without explanation.

The assessment of asbestos is not adequate – see Code of practice 3550 and there is no consideration of the possible presence of Blue Asbestos.

According to the Robson Plan the purpose of the remediation is to clear only the area required for the basements a high rise high density housing development and such a development is NOT part of this DA and no details are provided.

In addition the impacts on the public and the surrounding environment have not been assessed or addressed. In particular impacts of contaminated run off on the adjacent public land and Golf Course, protection of residents living nearby in particular Lane Pool Close and Denman Street from health impacts and noise and heavy remediation traffic.

Also the proposed schedule for the works as advised to a few local residents by letterbox drop (Attachment B) of work being undertaken from Monday to Saturday from 7am to 6pm and continue until July 2015 is in itself a breach of the ACT Government's own regulations for such work. In particular the regulations preclude Saturdays

Robson Cost Estimate and provision for all aspects of remediation

The cost estimates of \$2.347 million is inadequate as it does not cover the scope of works outlined in the Robson Plan. Many items are vast under estimates AND a significant number of identified requirements in the Robson Remediation Plan are NOT provided for in the cost estimate. It is likely to be out by 20 to 30 fold. Remediation on the current allocation by ACT Government for the Robson plan would result in totally inadequate remediation.

One example of under estimation is as follows.

The cost estimate is based on 200 hours for a Semi Tipper to cart 14,400 tonnes of asbestos contaminated soil from point of origin to disposal. The math means that it is possible to load and cart 72 tonnes of contaminated waste on one truck from Yarralumla to the West Belconnen Landfill unload and return to Yarralumla a trip of around 36 km in just one hour. The appropriate sized and equipped haulage trucks with dogs can only carry around 20 tonnes all up. At best one could achieve loading one truck out and returning back empty in 2 hours. So this alone is an 8 to 10 fold under estimate with these costs being more like \$300,000 not \$29,000.

The tonnage provided for does not allow for bulking which could be 150 to 200% more that is 13,000m³ to 18,000m³.

There is absolutely no contingency estimate for any change in scale and scope as indicated by the further essential sampling. Any normal project would include at a minimum 20% or \$470,000. However based on the information in all three site assessment reports to date the contamination is likely to be far greater than the initial sampling indicates.

There is no provision for labour and equipment for cartage, labour or equipment for backfilling the site with 14,400 tonnes of clean fill which again could be in the order of \$300,000.

Identified requirements in the Robson Remediation Plan are NOT provided for in the cost estimate as follows:

Full time Site Archaeologists as provided for in the Heritage Impacts Report.

EPA Accredited Auditor

Equipment for washing the haulage trucks and managing the waste water from this decontamination of trucks

Site works and facilities

Establishing the access road

Equipment to load the haulage trucks – a bobcat is provided for but is far too small to be able to reach the height necessary to load a truck

Removal of the additional 300mm of solid to the estimated 2m depth

Removal of Asbestos must be carried out in a fully enclosed environment

Haulage trucks to carry asbestos need to be fully sealed

Protection from contaminated dust for residents living near excavation must be provided.

Ensuring power and water facilities to residents are protected (R67 in Commercial Zones Development Code)

Prevention of contaminated run off to public land and the Golf course

Plastic wrapping of certain types of asbestos contamination as required by regulation

Management of stockpiles including plastic coverage, plastic barriers under the stockpiles

Bunds around stockpiles and management of run off bunds and straw bales

Geotextile membrane

The full cost is likely to exceed the Robson Cost estimate by 20 to 30 times and will far exceed the ACT Government's Budget allocation of \$2.9 million (Attachment A). Moreover the Robson Cost Estimate does not provide for remediation of the site as a whole. Nor is there any analysis of alternative options and the costs, risks and benefits and disadvantages of a range of remediation options.

Commercial Zones Development Code Rules and Criteria and the Yarralumla Neighbourhood Plan

The Blocks that are the subject of this DA are covered by the Commercial Zones Development Code and the Yarralumla Neighbourhood Plan. The DA does not address a significant number of rules and criteria stating that they are not applicable when clearly they are or that they are covered by the Robson Plan when they are not adequately addressed there.

R65

A statement of compliance from the relevant agency is provided, which confirms that the discharge (or potential discharge by accident or spillage) of non-domestic liquid waste to the sewerage or stormwater networks complies with utility standards and requirements.

C65

If a statement of compliance is not provided the application will be referred to the relevant agency in accordance with the requirements of the Planning and Development Act 2007.

The DA comment is "See the RAP. All contaminated waste materials (dust or runoff) to be confined to the site area until removed from site in sealed vehicles." However the RAP does not cover this nor is it covered in the Robson Cost estimate.

Element 23: Environmental management

23.1 Erosion and sediment control

R70

This rule applies to sites greater than 3000m². Development complies with a sediment and erosion control concept plan endorsed by the Environment Protection Authority.

Supporting document: A sediment and erosion control concept plan is prepared in accordance with the ACT EPA Environmental Protection Guidelines for Construction and Land Development in the ACT 2011.

Note: A condition of development approval may be imposed to ensure compliance with this rule. This is a mandatory requirement. There is no applicable criterion.

The DA comment is "See Sediment and erosion control plan and notes" but these do not address how this will be dealt with.

23.2 Contamination

R71

This rule applies where an assessment by the proponent in accordance with the ACT Government Strategic Plan – Contaminated Sites Management 1995 and the ACT Environment Protection Policy identifies contamination within or adjacent to the development area, but does not apply if the Environment Protection Authority has provided written advice that there are no contaminated sites within or adjacent to them development area.

Development complies with an environmental site assessment report endorsed by Environment Protection Authority.

Supporting document: Environmental site assessment report endorsed by Environment Protection Authority

Note: A condition of development approval may be imposed to ensure compliance with the endorsed site assessment report. This is a mandatory requirement. There is no applicable criterion

The DA comment is "See accompanying RAP report from Robson Environmental" However this does not adequately address this issue and in particular the aspect of "or adjacent to the development area".

Yarralumla Neighbourhood Plan

The comment in the DA states that "The site remediation is not inconsistent with these key strategies and will allow future unimpeded use of the land and improve environmental conditions within the block."

The Yarralumla Neighbourhood Plan strategy is to "Promote high quality residential development that is sympathetic to the existing garden suburb neighbourhood character in terms of scale and landscape setting. Clearly partial remediation of the site so that high density high-rise and flats can be built that have permanently paved areas with no access to the soil to protect people from asbestos contamination ASC NEPM HIL level B is not in keeping with the garden suburb and scale. Also as the remainder of the site will not be remediated there can be no use by residents or the public.

Summary and Conclusion

The DA should not be approved as adequate asbestos contamination investigations and risk assessments have NOT been undertaken and there is no strong argument for the approach proposed which only addresses a small component of the site

The DA should not be approved as it does not comply with current zoning requirements.

The DA should not be approved as the Robson Cost Estimate is both inaccurate and misleading and underestimates the cost of the remediation subject to the DA.

The DA should not be approved as it inadequately addresses a number of important zoning criteria and conflicts with the Neighbourhood Plan.

Marea Fatseas

President

info@yarralumlaresidents.org.au

Yarralumla Residents Association Inc.

PO Box 7123

Yarralumla ACT 2600

Attachment A

Environmental Excellence through Experience, Endeavour and Evaluation



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Mr Peter Ozols
Project Manager
Property Projects and Services
ACT Property Group
Fyshwick ACT 2609

By email: peter.ozols@act.gov.au

Wednesday, 20 March 2013

Dear Peter,

Re: 750423 – Cost Assessment - Asbestos Dump Remediation - Yarralumla Brickworks - Yarralumla ACT

Dear Peter,

Please refer to the attached spreadsheet which provides an indication of cost for the remediation of the ~~Asbestos Dump~~ located on the western boundary of the Yarralumla Brickworks, Yarralumla ACT (Block 1 Section 102). The dump also encroaches onto adjacent Public Land (Block 20 Section 102) and possibly Block 1 Section 127.

The cost estimate is based on current item costs obtained from local ACT contractors. The dump has been estimated to cover an area of 0.45 hectares and is known to be 4m deep in some locations. However, it is thought that the depth of impacted soil material is shallower toward the outer boundary of the dump. Therefore, the estimated volume of asbestos impacted soil has been based on a presumed depth of 2m across the area of impact (0.45 ha) which equates to a total volume of **9,000m³ or 14,400 tonnes**. Therefore, following site set up and vegetation removal this volume could be removed in approximately 4 weeks to the West Belconnen Landfill provided all relevant approvals were in place.

Robson Environmental recommends that this estimate be used as a guide only and should be revised when more information becomes available.

Yours sincerely,

A handwritten signature in black ink that reads "Ben Kendon".

Ben Kendon
Senior Consultant – HAZMAT
Class A Asbestos Assessor (ACTPLA)
License No: 2006638

Attachment A. Draft Cost Spreadsheet
Attachment B. Asbestos Dump Location Plan



Cost Estimate
Asbestos Dump Remediation
Yarralumla Brickworks

Attachment A. Cost Estimate

Project Number: 750423 - Cost Estimate - Asbestos Dump Remediation - Yarralumla Brickworks			
Activity or Item	Number of Units	Unit Cost (\$)	Projected Cost (\$)
Stage 1 - Site Establishment	Stage 1 - Site Establishment (Lump Sum)	5,100.00	5,100.00
Stage 2 - Remove Vegetation - Blackberry and other small plants	Stage 2 (Lump Sum)	5,100.00	5,100.00
Stage 3 - Removal of Asbestos and Separation of Recycled Waste (Bricks, Concrete, Metal) - 20 Days (10 hours per day)			
Labor Hire (per Hour) - 3 personnel	400	85.00	34,000.00
Plantage (per Fleet)	2	650.00	1,300.00
Excavator 30-35t (per Hour)	200	200.00	40,000.00
Bank Tipper (per hour)	200	145.00	29,000.00
Bobcat (per hour)	200	90.00	18,000.00
Water Truck (per Hour)	200	130.00	26,000.00
Asbestos Labor (per Hour) - 4 Personnel	800	110.00	88,000.00
Brick/Concrete Disposal (per Tonne)	0	30.00	-
Asbestos Impacted Soil (per Tonne) - Asbestos	14,400	120.00	1,728,000.00
Siever Plant (per Day)	Unknown	Option to be assessed	Option to be assessed
Air monitoring	20	750.00	15,000.00
Class A Asbestos Assessor/ Environmental Scientist	200	165.00	33,000.00
Project Management (per Hour)	40	165.00	7,400.00
Stage 3 - Site Validation (Estimate only - to be costed based on sampling plan)			
Sample Analysis and Reporting (does not include the cost of an EPA Accredited Auditor)	1	15,000.00	15,000.00
Stage 4 - Site Reinstatement (cost of soil replacement only)			
Virgin soil import (per Tonne rate only - does not include cartage)	14,400	11.00	158,400.00
Total Projected Cost			2,347,300.00
<p>Table Notes: The projected cost is based on a 20 Day operational phase for Stage 3. Assume 14,400 tonnes of asbestos and asbestos impacted soil waste. Disposal costs include cartage to West Belconnen Landfill. This figure is based on the assumption that 2 metres of impacted soil across an area of 0.45 hectares.</p>			

Attachment B. Dump Location Plan



Attachment B



ACT
Government
Territory and Municipal Services

Dear resident

16 May 2014

Canberra Brickworks remediation project

I am writing to inform you of planned remediation work for the Canberra Brickworks site in Yarralumla which is scheduled to commence in July 2014. This is one of a number of remediation projects across Canberra. The ACT Government has allocated \$2.9 million towards removing contaminated soil at this site as part of its commitment to enhancing and protecting Canberra's environmental quality.

The Canberra Brickworks site was used during the 1970s and 1980s as an unofficial suburban dump site primarily for building materials. ACT Property Group has engaged a contractor to undertake remediation work including the removal of contaminated material potentially containing asbestos from an area on the western edge of the Canberra Brickworks site (adjacent to the Royal Canberra Golf Club boundary). Following remediation, the site will be reinstated with clean fill.

Before remediation work begins, perimeter fencing will be erected to formalise the work site and signage installed to alert people to the project. An initial environment site assessment has been completed and further assessment will occur during the project to clarify the nature and extent of the contamination.

A range of control measures will be in place during the remediation work to minimise the impact of activities on the surrounding environment and to ensure the health and safety of the workers and the general public. There will be regular monitoring of air quality on site as well as suitable containment of any contaminated materials moved from the site. Removal of any contaminated soil will be undertaken in a sensitive manner to ensure there are no adverse impacts on nearby residents, the surrounding environment or the heritage significance of the site.

A temporary traffic management plan has been prepared to coordinate vehicle access in and out of the work site. Remediation work will be undertaken between 7 am and 6 pm, Monday to Saturday (excluding public holidays).

The project is expected to be completed by June 2015 however, this is dependent on the nature and extent of contaminated material which is yet to be determined. Two weeks prior to the start of work, residents immediately adjacent to the area will be notified by mail.

Public comment and further information

A development application for the work has been lodged and can be viewed online at www.actpla.act.gov.au. Public comments on the development application close on Monday 2 June 2014. For further information about Canberra Brickworks, including proposals for its future use, visit www.lda.act.gov.au/canberra

If you have any questions about this project please contact me on 6213 0700.
A map is provided over page highlighting the remediation area for your information.

Tania Shaw
Senior Manager
ACT Property Group

Conservation Works Schedule

No.	Building No.	Building	Element	Works
1	3	Power House	Roof	Replace approx. 50 missing or broken marseilles pattern tiles
2	3	Power House	Gutters	Install new quad gutters
3	3	Power House	Fascias	Prepare and paint fascias and bargeboards
4	3	Power House	Eaves	Replace missing t&g eave lining boards
5	3	Power House	Eaves	Prepare and paint eave linings
6	3	Power House	Walls	Remove spray painted graffiti, wash down walls
7	3	Power House	Louvres	Replace 4 damaged louvres
8	3	Power House	Louvres	Prepare and paint louvres
9	3	Power House	Windows	Replace 6 missing windows
10	3	Power House	Windows	Prepare and paint windows
11	3	Power House	Doors	Replace damaged doors with new panelled doors with fanlight over
12	4	Kiln 1	N verandah	Replace decayed beams, rebuild collapsing north verandah/deck
13	4	Kiln 1	Chamber 1	Demolish recent brick wall and door in kiln entrance
14	4	Kiln 1	Chamber 1	Dismantle and rebuild outer 5 courses entrance arch
15	4	Kiln 1	Chamber 2	Dismantle and rebuild outer 5 courses entrance arch
16	4	Kiln 1	Chamber 3	Repoint entrance arch
17	4	Kiln 1	Chamber 4	Dismantle and rebuild outer 5 courses entrance arch
18	4	Kiln 1	Chamber 5	Dismantle and rebuild outer 5 courses entrance arch
19	4	Kiln 1	Chamber 6	Dismantle and rebuild outer 5 courses entrance arch
20	4	Kiln 1	Chamber 7	Dismantle and rebuild outer 5 courses entrance arch
21	4	Kiln 1	Chamber 8	Repoint entrance arch
22	4	Kiln 1	Chamber 9	Dismantle and rebuild outer 5 courses entrance arch
23	4	Kiln 1	Chamber 10	Dismantle and rebuild outer 5 courses entrance arch
24	4	Kiln 1	Chamber 13	Dismantle and rebuild outer 5 courses entrance arch
25	4	Kiln 1	Chamber 15	Remove concrete pavers from kiln floor
26	4	Kiln 1		Chambers 2, 4, 5, 6, 7 and 8 are significantly distorted but appear stable
27	5	Brick fanhouse	Gutters	Install new quad gutters and downpipes
28	5	Brick fanhouse	Fascias	Replace 5m missing fascia boards
29	5	Brick fanhouse	Fascias	Prepare and paint fascias
30	5	Brick fanhouse	Eaves	Replace 4m2 t&g eaves lining boards
31	5	Brick fanhouse	Eaves	Prepare and paint eaves
32	5	Brick fanhouse	Windows	Install 10 new sashes and reglaze all windows
33	5	Brick fanhouse	Windows	Prepare and paint windows
34	5	Brick fanhouse	Doors	Replace missing doors

No.	Building No.	Building	Element	Works
35	5	Brick fanhouse	Doors	Prepare and paint doors
36	5	Brick fanhouse	Ceiling	Replace 60% of t&g ceiling lining boards
37	5	Brick fanhouse	Floor	Drain pits and clear debris
38				
39	6	Chimney & kiln	Chimney	Replace missing bricks and repoint top 8 courses of chimney
40	6	Chimney & kiln	Test kiln	Remove vegetation from roof of kiln, re-render roof and repoint door arch.
41	7	Office	Additions	Demolish flat roofed additions to 3 sides of original office building.
42	7	Office	Roof	Replace missing and broken marseille pattern tiles. Rebatten and install tiles along lower courses following removal of skillion roofs.
43	7	Office	Windows	Install new windows to match original windows
44	7	Office	Doors	Alter brickwork to reopen original doorways. Install new doors to match original doors.
45	7	Office	Joinery	Prepare and paint all external timberwork.
46	8	Kiln 2	Roof	Replace broken fibreglass skylight sheet
47	8	Kiln 2	Gutters	Install gutters.
48	8	Kiln 2	Windows	Reglaze all steel framed windows with Georgian wired glass
49	8	Kiln 2	Windows	Prepare and paint all steel framed windows
50	8	Kiln 2	Wall cladding	Clad centre of south upper wall with corrugated galvanised steel
51	8	Kiln 2	Wall	Remove efflorescence from west end internal kiln wall
52	8	Kiln 2	Internal	Demolish recent brick internal partition walls from within kiln chambers
53	8	Kiln 2	Internal	Remove concrete pavers from kiln floor
54	8	Kiln 2	Internal	Clear plasterboard and damaged insulation from firing floor and ceiling
55	8	Kiln 2	Internal	Remove electrical wiring and conduits
56	9	Fan Houses	Roof A	Replace CGI roof and gutters
57	9	Fan Houses	Roof B	Replace CGI roof and gutters
58	9	Fan Houses	Walls	Replace missing cladding to Fan house 8B
59	9	Fan Houses	Windows	Replace missing windows with matching 4 pane sash windows
60	9	Fan Houses	Doors	Replace missing doors and architraves
61	9	Fan Houses	Exterior	Prepare and paint fascias, windows and doors
62	9	Fan Houses	Interior	Clear out debris and blackberry bushes.
63	9	Fan Houses	Exterior	Clear drain channels and surroundings
64	10	Chimney	Chimney	Repoint top 5 courses of brickwork.
65	11	Amenities	Windows	Replace missing glazing, prepare and paint windows
66	11	Amenities	Doors	Replace/repair doors. Prepare and paint doors
67	11	Amenities	Fascias	Prepare and paint all external joinery
68				
69	12	Kiln 3	Roof	Replace 30m2 fire damaged CGI roof
70	12	Kiln 3	Downpipes	Replace downpipes at west end of south side to drain at outer edge of verandah roofs

No.	Building No.	Building	Element	Works
71	12	Kiln 3	Structure	Repair/replace 2 fire damaged Oregon trusses
72	12	Kiln 3	Structure	Replace 30m Oregon purlins
73	12	Kiln 3	Structure	Replace 2 fire damaged 200 x 200 Oregon posts
74	12	Kiln 3	Structure	Replace 10m fire damaged stud wall and doorway
75	12	Kiln 3	Structure	Repair and reroof operators room on north side
76	12	Kiln 3	Windows	Reglaze 33 steel framed windows with frosted Georgian wired glass
77	12	Kiln 3	Windows	Prepare and paint 33 steel framed windows
78	12	Kiln 3	Pipework	Remove and dispose of asbestos lagging from pipes at east end
79	12	Kiln 3	Verandah	Replace missing 12m of north verandah roof with new CGI
80	12	Kiln 3	Verandah	Install roof and structure to west end or demolish steel posts and beam
81	12	Kiln 3	Floor	Remove concrete pavers from kiln floor
82	14	Machine Bldg 1	Skylights	Replace broken glass skylights
83	14	Machine Bldg 1	Windows	Replace missing glass in all windows
84	15	Machine Bldg 2	Skylights	Replace broken glass skylights
85	15	Machine Bldg 2	Windows	Replace missing glass in all windows
86	15	Machine Bldg 2	Roof	Replace missing CGI sheets
87	16	Machine Bldg 3	Skylights	Replace broken glass skylights
88	16	Machine Bldg 3	Windows	Replace missing glass in all windows
89	16	Machine Bldg 3	Cladding	Replace 2 sheets east wall cladding
90	17	Workshop	Note	No Access - Works?
91	18	Crusher 1		Part demolished - no works
92	19	Crusher 2		Part demolished - no works
93	20	Crusher 3	Roof	Replace missing CGI roofing over hopper
94	21	Conveyor		Part demolished - no works
95	22	Downdraft Kilns	Note	No access to kiln interiors
96	22	Downdraft Kilns	Exterior	Repoint cracks in all 3 kilns
97	24	Chimney	Brickwork	Replace 40 spalling bricks with new matching bricks