

Yarralumla Residents Association Inc.
ABN 23 511 882 495

Mr David Dawes
CEO Land Development Agency

Dear Mr Dawes,

**Yarralumla Residents Association submission in response to
Canberra Brickworks and Environs Planning and Development Strategy 2015**

The Yarralumla Residents Association presents our response, after consultation with the Yarralumla community, to the Canberra Brickworks and Environs Planning and Development Strategy 2015.

While the Land Development Agency has modified some aspects of the Canberra Brickworks and Environs Planning and Development Strategy 2013, it has failed to respond to the bulk of concerns raised in the YRA submission of 14 July 2014 and by Yarralumla residents and 4,181 Canberrans whose petition was lodged with the Legislative Assembly on 6 August 2014.

The development strategy still only considers and addresses matters that impact on the viability of the development itself within the boundaries of the development area. There has been no assessment of the development's impacts on the current suburbs of Yarralumla, Deakin and Curtin, nor on arterial roads outside the area, nor heritage values listed on the Commonwealth Heritage list.

The Yarralumla Residents Association considers that a development of more modest scale should be possible that is in keeping with the character of Yarralumla; has a mix of dwellings, retains current landforms, forests and ridges as significant landscape scale assets; protects the Commonwealth heritage listed Dunrossil Drive 1918 Elms; retains continuous walking and cycling trails as open space bush parkland, and natural temperate grassland and golden sun moth habitat in that corridor. Such a development would ensure that access to existing Yarralumla would not be through streets that are inappropriate and unsafe and would be designed to preclude rat running.

The community's concerns are detailed in the attached submission and key issues outlined below:

1. Deals inadequately with traffic impacts

There are major community concerns about the impact of the town centre scale development on traffic, existing street networks and parking in Yarralumla and surrounding suburbs. In particular, the proposed access roads between the development and existing Yarralumla, namely Woolls, Abbott, and Bentham Streets and Kintore Crescent, would not meet relevant standards in terms of width, configuration and traffic volume. They will be hazardous for vehicles, create congestion and pose significant safety issues for residents and pedestrians. **The Yarralumla Residents Association calls for a comprehensive traffic survey, with peer-reviewed modeling, of the existing suburb of Yarralumla, and adjacent suburbs to assess future traffic flows and impacts.**

2. Provides no rationale for the proposed scale and density

The YRA considers that there is scope for modest scale medium density residential development on the proposed site that could provide additional housing options, for both Yarralumla residents and the broader public. However, neither the Canberra Brickworks Planning and Development Strategy 2015, nor the LDA's specialist consultants' reports, provides justification for the figure of 1800 new dwellings in the development. The proposed density, doubling Yarralumla's population, bears no relationship to Yarralumla's existing character, including existing land use patterns, local street network, community facilities, and the built form. This is an abrogation of The Territory Plan, the Spatial Plan 2004, the ACT Planning Strategy 2012 and the National Capital Plan 2014 precepts, amongst others, with which the Territory Government must comply. **The Yarralumla Residents Association calls for the development's scale to be reduced to one in keeping with the character of Yarralumla and site topography, with a mix of dwellings and heights (no more than 3-4 storeys).**

3. Destroys valued open spaces, ridge buffer, walking trails and biodiversity

Yarralumla residents and the local community value highly the connectivity between the open green spaces/natural parklands, mature trees (including the oak plantation) and walking trails in the development site. The Canberra Brickworks Planning and Development Strategy 2015 respects none of these values, nor the ridge buffer between South Canberra and Woden Valley referred to in the National Capital Plan, nor the critically endangered golden sun moth and natural temperate grasslands habitat. We are appalled that the Strategy will involve massive earthworks to flatten the 49 hectare site, and destroy some 2000 trees, imposing an urban design incompatible with the site topography. **The Yarralumla Residents Association calls for retention of the current landforms, buffering of the development from the current suburb with connected natural parkland instead of a formal park along Denman Street, retention of continuous walking /cycling trails and of the golden sun moth and natural temperate grasslands within that corridor.**

4. Contravenes the National Capital Plan

Implementation of the Canberra Brickworks Planning and Development Strategy 2015 will impact adversely on the Main Avenue and Approach Route to the Governor General's residence. It will remove the direct entrance to Dunrossil Drive and replace it with a main access road to the new housing estate along the proposed Brickworks Road. Consequently, Dunrossil Drive will be foreshortened by over 20 percent, around 30 of the Avenue's heritage listed elms are likely to be removed, and ridges on either side will be flattened. There will be disruption for visiting dignitaries and access issues for the whole development when the access road is blocked for motorcades. It will become an overflow parking area for the development and its visitors. The proposed Brickworks Road access to Dunrossil Drive will become congested also with commercial traffic for the Yarralumla shops and Brickworks and will take rat-running traffic through to north Yarralumla. **The Yarralumla Residents Association calls for a revised strategy for the Canberra Brickworks and Environs that is consistent with the National Capital Plan.**

5. Conflates Brickworks conservation and adaptation with residential development

The Canberra Brickworks Planning and Development Strategy 2015 continues to conflate Brickworks conservation and adaptation with a massive residential development and multi-million dollar arterial road realignment. The heritage listed Canberra Brickworks are the ACT Government's responsibility, administered under the Heritage Act 2004 on behalf of all ACT residents. The rationale for high-density residential development is not to pay for conservation and adaptation of the Brickworks, given that only \$5 million has been set aside for that purpose. **The Yarralumla Residents Association seeks transparency from the ACT Government on costings for preservation and adaptation of the core Canberra Brickworks elements, and calls for establishment of a formal trust, with Government funding, empowered to raise funds from the private sector and public.**

6. Conclusion

The Yarralumla Residents Association considers there is scope for more modest medium density residential development. However, the Land Development Agency needs to assess comprehensively the environmental, economic and social context of the site, adjacent suburbs and the transport corridor from Cotter Road to the City and Parliamentary Triangle. Only then will it be able to devise a plan that takes into account all the likely impacts of its development proposal. The LDA and ACT Government also need to demonstrate genuine commitment to engage effectively with Yarralumla and other affected residents to find a mutually acceptable solution.

Yours sincerely



Marea Fatseas
President
31 March 2015

The Canberra Brickworks and Environs
Planning and Development Strategy
February 2015 Land Development Agency

Yarralumla Residents Association

Submission

1 April 2015

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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 February 2015' (referred to in this document as 'the development' or 'development strategy' as appropriate and cited as LDA (2015)). The Strategy was released at the beginning of March 2015 with a short 3 week consultation period subsequently extended to 4 April 2015.

The Yarralumla Residents Association Submission is based on a detailed analysis of the documents made available in 2015 by the LDA; its previous submission in July 2014; and has been informed by more than 20 reports by government agencies and consultants, publicly available information and information released by the LDA under 'Freedom of Information'. The 2013 feasibility study on the adaptation of the Canberra Brickworks undertaken by MacroPlanDimasi for the Land Development Agency (LDA), remains unavailable to the public.

The submission is informed by consultation with the Yarralumla community, the Deakin Residents Association; the Inner South Canberra Community Council (ISCCC) and other stakeholders. Consultation included a public meeting convened by the Yarralumla Residents Association held on 14 March 2015. The submission is informed by a broad cross section of the Canberra Community with over 4100 signing a petition that was tabled in the ACT Assembly on 6 August 2014. This submission is also informed by discussion with technical experts, and individuals involved in the operation and use of the Canberra Brickworks from the early 1970s to date.

The 2015 development has been analysed, together with the changes from the previous 2013 proposal, and the earlier 2010 proposal. The development strategy documents (LDA 2015) provide limited detail and aspects of the report and appendices are often in conflict in regard to proposed approach, actions or timing. The development addresses to a very limited degree some of the concerns raised by the community in our 2014 submission and petition. Very significant and substantive issues remain.

The development strategy only considers and addresses matters that impact on the viability of the development within the boundaries of the development area. There has been no comprehensive assessment of the environmental, social and economic impact of the development on the heart of the current suburbs of Yarralumla, Deakin and Curtin, nor on the arterial roads outside the area, nor heritage values listed on the Commonwealth Heritage list.

Scale

The overall scale of the development has increased compared to 2013 and 2010. The size of the development area has increased by 7 ha from 42 ha to 49 ha. The 49ha includes the area required for construction of the Mint Interchange. The number of dwellings has increased from 900 -1100 in 2010 to the 1600 in 2013 and 1885 now (SMEC 2015). The Community has sought a reduction in the scale of the development to be in keeping with existing suburbs and infrastructure.

Community and Retail

Retail facilities proposed are 10 750 m² of commercial space mainly to be located on the south side of Adelaide Avenue in West Deakin business area. Previously this was 15 000m². The 2015 development now includes one mixed use block in the Stage 1 development near the Canberra Brickworks that could provide for some commercial activity and for a small mini mart type operation near the Cotter Road junction. This mixed use is understood to be approximately 2000 m² of the total commercial space. This provides some access to facilities within the development. The development provides no new community facilities (schools, community spaces).

Traffic Impacts

The proposed development will have a major impact on a congested transport corridor where the Cotter Road meets Yarra Glen and Adelaide Avenue.

The assessment of traffic is highly unrepresentative of existing loads and therefore also future volumes. The EMME based Canberra Strategic Transport Model (CSTM) calibrated with the ABS 2011 journey to work data, was used to estimate traffic projections along the links within the designated study area and the proposed Mint Interchange. This model does not use actual traffic count data and has not been validated against a comprehensive or current traffic count of the existing suburb. As a consequence it underestimates the current Yarralumla suburb traffic to such an extent that the modelling figures for Yarralumla would need to be doubled.

The Mint Interchange is re-instated from the 2010 proposal and this is a positive step to address the significant traffic flow issues from a development of the scale proposed. The proposed signalisation of some of the existing intersections is detailed and may improve traffic flows from the development and to some extent associated arterial roads. Equally, given the close proximity of the junctions being signalised, this may create other flow problems.

There are two main changes to the roads connecting the development to the existing Yarralumla suburb namely connection of the Quarry Ridge road to Bentham Street and connecting Woolls and Abbott Streets as direct access roads from the development. The development's access roads which are subject to the specifications in the Estate Development Code 2013 will connect to Woolls Street, Abbott Street, Bentham Street and Kintore Crescent and also via Maxwell/Weston Street in Yarralumla. These streets would not meet those requirements in terms of width, configuration and traffic volume and will be hazardous for vehicles, create congestion and present significant safety issues for residents and pedestrians.

Thus for example the model shows the current traffic along the western end of Weston Street, between Maxwell and Novar Streets, at zero with the development in Stage 1 adding 1950 movements per day to this street. The ACT Roads figures for this section of that street have actual traffic count figures have 1827 movements already in 2012. This means we will have 3777 car movements on a 6m wide road by 2021 that is a 100% increase. This takes the road from being equivalent to Minor Collector now in terms of traffic movements that requires a minimum carriageway width of 10m (Estate Development Code 2013) up to a Major Collector. Similarly, traffic from the development will enter the current Woolls Street from an Access Street B. Currently Woolls Street has a maximum carriageway width of 6.1m (5.5m at the western end and 6.1m at the southern end); a total width including reserves of 18.1m; a right angle bend; and about 140 movements per day. The CSTM has the 2021

movements at 2640 per day a 19 fold increase, and as such under the Estate Development Code would be classified as a Minor Collector road which requires a minimum road width of 10m and total width including reserve of 22.5m.

The proposed Quarry Road in Stage 3 (Access Street A) is specifically included in the development to prevent rat running through the development and direct traffic into Bentham Street in the existing suburb. Quarry Road is stated as an Access Street A 0-300 vehicles per day (Rules 85 and 86, Estate Development Code 2013) although the traffic modelling indicates it to be at Minor Collector road volumes. Bentham Street is equivalent to an Access B street but only has a 6m wide carriageway not 7m. Bentham Street is the location of the Yarralumla Centre and shops with 49 spaces for 90 degree parking on both sides of the road. The ACT government has acknowledged that this parking is subject to a high accident rate. Cars parked on each side of the street need to reverse across to the other side of the street in order to exit the parking bay, and the parking configuration does not meet Australian Standard (AS2980.5) for road width (ACT Government 2014). In addition there is already an existing shortfall of 166 parking spaces at the Yarralumla Centre and shops (ACTPLA 2012). Having navigated the on-street parking, the development area traffic would then continue straight past the Yarralumla Pre and Primary Schools.

The connection to Quarry Road will add 2700 movements a day to Bentham Street taking the traffic load to Major Collector level that should require a 10m carriageway. This traffic volume will be directed through an already hazardous underspecified on-road parking area and will result in a road that is far overcapacity for its specification and highly dangerous.

As part of addressing issues that were raised in consultations, the provision in Stage 3 at 9 to 10 years of 50 to 96 parking spaces in Bentham Street would go some way to meeting the existing shortfall at the Yarralumla Centre. However their construction would not be allowed as the steep slope exceeds that required for safety by the current Australian Standard (AS2980.5). Moreover this parking is not appropriate for the Brickworks as it exceeds the proximity requirement of 200m.

Hence the quantum of parking is totally inadequate for any requirements arising from the Quarry Park, Brickworks site activation or traffic from the development using the Yarralumla Centre. There is a proposal for an unspecified number of parking spaces at the Canberra Brickworks in Stage 3. To be adequate to service the Brickworks and Quarry Park this would need to be at least equivalent to the AR Marr 1986 proposal of 400 parking spaces. Based on the Parking and Vehicular Access General Code (ACTPLA 2012) and an estimated 7500m² commercial space at the Brickworks, which is a CZ6 zone, the requirement would be over 500 parking spaces with additional requirements for the Quarry Park.

Decisions on the development should not be made on unrepresentative and insufficient data. The application of the strategic modelling should be subject to peer review. A full traffic survey of the existing suburb of Yarralumla, and indeed adjacent Deakin and Curtin must be undertaken to form the basis for analysing future traffic flows and assessments. This is necessary to ensure that the development has the appropriate Street Hierarchy. It will also ensure that the development has the appropriate street infrastructure and does not result in the centre of the current suburb being rendered inaccessible due to excessive traffic flows along roads that are under specified.

There are significant consequential effects of the development on the adjacent suburbs of Deakin and Curtin. The re-instatement of the Mint Interchange will facilitate traffic flows to West Deakin and, in combination with the Quarry Road, should reduce rat running through the new development. The changes to the arterial road infrastructure, including the Mint Interchange, Adelaide Avenue bus stop with the associated loss of both T2 lanes, and Cotter road realignment will, however, also have a major impact on traffic flows from Woden and Molonglo but these have not been assessed.

The consequence will be unsafe roads, traffic volumes beyond the limits set out for new roads, congestion and a suburb that is not accessible to either existing residents, those from the new development and adjacent suburbs and as such is not a viable approach. These matters are fundamental to planning.

National Capital Impacts

The area proposed for development comprises dense undulating woodland with a number of steep ridges, rising from 575m to 592m ASL, and gullies. These ridges have been classified as landscape scale assets (dsb 2010) that should be protected and form the processional route entrance to the Governor General's house down Dunrossil Drive from the Cotter Road. There are some 2000 trees that have been assessed for the LDA (dsb 2010) and are protected under ACT legislation. These woodland areas have been identified as landscape scale assets and as such should be preserved and protected under the National Capital Plan.

The development is one of high density dwellings in a grid pattern to deliver the maximum number of dwellings. The imposition of such a high density dwelling grid pattern on a site with such hilly topography requires it to be stripped of all vegetation, including some 2000 trees, and the ridges levelled. The costs of such earthworks are extraordinarily high. This violates Griffin's key principle of integrating the topography as a design feature.

The impact of these extensive earthworks and the development is to eliminate some 2000 trees. Importantly it will also eliminate 1.5ha of critically endangered species of golden sun moth and natural temperate grassland habitat in conflict with ACT and Commonwealth policies, principles and legislation. It will also eliminate the inter-town centre buffer zones and the connected open green space and the landscape scale assets.

There will be a significant impact to the 'Main Avenue and Approach Route' (National Capital Plan 2014) to the Governor General's residence. The direct entrance to Dunrossil Drive from the Cotter Road will be removed and replaced by the main access road to the housing estate along Brickworks Road. Brickworks Road will have a high level of traffic of around 9000 vehicles per day, visitor parking requirements and high commercial traffic for the Brickworks and shops. This would place it well above Major Collector level (3001 to 6000 movements per day) in the Street hierarchy. There will be security issues for access by visiting dignitaries and road closures would impact on residents at key times.

Moreover this reconfiguration will result in a foreshortening of Dunrossil Drive by over 20% and the removal of around 30 of the Avenue's 1918 Elms. Government House is approached along Dunrossil Drive which begins with a grove of oak trees and is lined with elms and robinias planted in 1918. The prominence of the elms is important as elm avenues are now quite rare, even on a world scale. Dunrossil Drive and this avenue planting of elms is listed on the Commonwealth Heritage list (Place ID 105381, Place File 8/01/000/0329). Hence assessment by the Commonwealth under the Environment Protection and Biodiversity Conservation Act 1999 will be required.

Canberra Brickworks Conservation and Adaptation

The announcement by the Government of some additional funds for the preservation and adaptation of the Canberra Brickworks is positive. Yet there remain many questions about the nature and extent of works and the likelihood of future use. The Canberra Brickworks are 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. In addition Brickworks Road will be the main service road through the development for the Canberra Brickworks and shops and this may pose security issues for visiting dignitaries that periodically may preclude access for residents to some 1500 dwellings.

The proposed funding for adaptation is a total of \$5m. This comprises \$1.5m for make safe in Stage 1 in 3 to 5 years and for 'warm shell' adaptation \$3.5m in Stage 2 in 6 to 8 years. In Stage 3 at 9 to 10 years an access road will be built and a Quarry Park developed for a notional \$10m through a design competition, but no funding has been set aside for the heritage buildings. The figures do not make sense. The quantum for make safe is half that of the 2010 'mothball' option, and for cold shell it is \$12m and warm shell is \$48m. The "mothball" option also provided \$0.7m pa for maintenance – that is a total of \$7m over the same period.

Lovell Chen (2015) advises that further Adaptation of the Canberra Brickworks buildings may occur in Stage 3 at 9 to 10 years. Alternatively demolition of the Kilns and Fan Houses other than the Staffordshire and Hardy Patent Kilns will occur. The LDA has consistently advised in 2012 and 2014 FAQs that the development, including any preservation and adaptation of the brickworks site and heritage buildings must be cost neutral. In addition the LDA advised that '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.' Thus demolition seems the most likely outcome as no information as to the quantum and source of funding in Stage 3 is provided and Adaptation is not commercially feasible.

A vehicular access road is to be provided to the Canberra Brickworks in Stage 3 at 9 to 10 years. Earthworks will level the development site in Stage 1 at 3 to 5 years. In addition there will be the sale of ten parcels of land for development, including Denman Street and demolition of noncore buildings on the brickworks site itself. It is thus unclear how the existing Brickworks tenants can continue to use the site, and how public access and Stage 2 activation of the site at 6 to 8 years can occur.

It is important that the proposed development does not militate against the adaptive re-use proposals being put forward by the existing tenants at the Brickworks.

Elimination of landscape scale assets, green space, critically endangered species and heritage listed assets

The 2015 development strategy provides the quantum of earthworks needed for the site for the construction of large scale high density dwelling, grid pattern configuration on an area of hilly topography. The SMEC (2015) report shows that extensive and costly earthworks are required with up to 7.1 metres of cut to eliminate the ridges across the entire site. This is a total of 215000 cubic metres of cut of which all but 10 000 cubic metres (that is 205000 cu m) will be used to fill low lying areas by up to 9.4 metres. This is a levelling of the site, eliminates the extensive 590m ASL high ridge lines and filling in the 574m ASL gullies.

Such extensive cut and fill to level the site means the removal of all vegetative cover and this includes some 2000 trees 10-14 metres high. The main ridge is a green buffer, and with the trees has a visual impact of a further 14m above the ridge height of over 590m.ASL. This area has been classified as a significant landscape scale asset that should be retained in the Tree Assessment report to the LDA in 2010 (dsb Landscape Architects 2010). This area is also both Designated Land and forms part of the Central Area Approach Route and both are subject to the National Capital Plan 2014. The trees in this area are predominantly “Regulated trees” under ACT legislation.

The removal of the landscape scale assets will eliminate the sense of place and heritage values will be reduced through the loss of the ancient Avenue Elms. The extensive cut and fill will also eliminate the entire area of around 1.5ha of natural temperate grassland and golden sun moth habitat prior to the commencement of any development. This is inconsistent with the National Capital Plan environmental policies and standards and ACT legislation. The loss of more than 0.5ha of its specific habitat also requires assessment by the Commonwealth as a matter of National Environmental Significance under the Environment Protection and Biodiversity Conservation Act 1999.

Inconsistency with Government Planning Framework and Legislation

The development strategy has focused on addressing matters within the boundaries of the development site so that the configuration is workable. This has been with disregard of all other considerations and as a result fundamental planning principles have not been applied. The development is inconsistent with the National Capital Plan 2014, the Canberra Spatial Plan 2004 and the ACT Planning Strategy 2012 and the sustainable development principles of the ACT Territory Plan. The development strategy does not meet the requirements of the Estate Development Code 2013 and has core elements that do not meet technical and legal requirements for infrastructure design and Australian Standards. The resultant impacts have neither been considered nor costed.

Conclusion

The majority of the issues that were raised in the 2010 and 2013 development strategy consultations remain.

The scale of the development continues to be centred on maximising the revenue from land sales to provide a 20% dividend on investment by the LDA. 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. This is a high cost site for housing development. The scale of the development has increased at every update of the strategy as the costs of site development have increased. Thus in 2010 the development proposal was for 900 to 1100 dwellings in 42 ha; in 2013 it was for 1600 dwellings in 42ha; and in 2015 it was 1885 dwellings in 49 ha that included the area for the construction of the Mint Interchange. The funding for preservation and adaptation of the Canberra Brickworks is minimal given the scale of the development.

There are significant issues associated with the elimination of the existing ridgeline topography, woodland and other vegetation and open space, and the impact of the development on all surrounding areas including the Governor General’s residence.

The impact of the development on traffic flows, access and safety in the streets adjacent to the development and the main thoroughfares of Yarralumla have not been assessed.

Decisions on the development should not be made on the basis of an unrepresentative traffic flow assessment that has not been validated by actual counts of existing traffic adjacent to the development area. A full traffic survey of the existing suburb of Yarralumla and adjacent areas, must be undertaken and modelling updated and peer reviewed to ensure development does not render the current suburbs inaccessible and unsafe.

The development is inconsistent with the National Capital Plan 2014, the Canberra Spatial Plan 2004 and the ACT Planning Strategy 2012 and the sustainable development principles of the ACT Territory Plan and the Estate Development Code 2013.

On the basis of the analysis in this submission, the Yarralumla Residents Association calls for the current development (LDA 2015) for the Canberra Brickworks and Environs to be replaced with one that:

- I. Reduces the scale of the development to one in keeping with the character of Yarralumla and the site topography; has a mix of dwellings and heights, but no more than 3 to 4 storeys. Is based on traffic flow assessments of the existing suburb of Yarralumla and adjacent areas from a comprehensive traffic survey to be undertaken in 2015 and applied in modelling that has been peer reviewed.**
- II. Is not inconsistent with the National Capital Plan.**
- III. Retains the current landforms, woodlands and forests as significant landscape scale assets - in particular the ridges running from Denman Street to Dunrossil Drive in parallel to the Cotter Road, and protects associated heritage including the 1918 plantings of *Ulmus* spp which are on the Commonwealth Heritage list**
- IV. Provides for appropriate separation /buffering of the development from the current suburb with urban open space bush parkland, not a formal park, along Denman Street.**
- V. Retains a “Green Circuit”/continuous walking and cycling trails as part of the provision of urban open space bush parkland, and the natural temperate grassland and golden sun moth habitat in that corridor.**
- VI. Does not provide main access to the existing suburb of Yarralumla through streets that are inappropriate and unsafe due to their width and configuration and will be hazardous to drivers and pedestrians, including children and those visiting the Yarralumla shops in Bentham Street.**
- VII. Precludes the vehicles from the development from rat running through the existing suburb of Yarralumla.**
- VIII. Addresses parking and traffic impacts within Yarralumla, as well as those that are relevant within the development site.**
- IX. Has a transparent, costed plan for the preservation and adaptive reuse of the Canberra Brickworks that is not at all compromised by the development.**
- X. Considers the establishment of a formal Trust responsible for the future use of the Canberra Brickworks that has funding from Government and is empowered to raise funds from the private sector and public.**

- XI. Minimises the duration and overall impacts on the community and environment that would be presented by the development of the new estate, the disruption to transport and commuting during construction of roads and the construction of a new interchange.**

2. Scale of the development

The proposed site is 49ha, 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. The site is bounded by Yarralumla on the north and eastern side, Curtin/Deakin to the south and National Capital Plan designated land to the west.

The development is for urban 'infill' of a type and scale that is without precedent in Canberra. It is not the infill of a couple of blocks, but an exceedingly large Greenfields infill site within an existing community.

Fig. 1 - The Canberra Brickworks and Environs Planning and Development Strategy 2015



Total Area 49 ha with Canberra Brickworks Site component 4.5ha (9% of the total area)

Dwellings 1885 (SMEC 2015) 55% at 4 to 8 storeys; 24% at 3 storeys; 16% two storeys; 0% single storey

Population 4524 and 2639 cars Commercial space 10750 m²

The development is an increase of 18% in terms of number of dwellings and population over the previous 2013 proposal. The area to be developed has increased by 7ha from the 2013 proposal. The 2015 development reinstates an area of 7ha that was labelled for 'Future Stage' in the 2013. The Mint Interchange had been included in the 2010 options.

The overall scale of the development has increased compared to 2013 and 2010. The size of the development area has increased by 7ha from 42 ha to 49 ha. The 49ha now includes the area required for the construction of the Mint Interchange. The number of dwellings has increased from 900 -1100 in 2010 to the 1600 in 2013 and 1885 now (SMEC 2015).

Yarralumla has a population of 2922 and 1307 dwellings (ABS 2011). The net residential dwellings density is 8.5/ha (ACT Government 2011). The total number of dwellings in the proposed development will be around 1885 (SMEC 2015) with around 1500 on the Yarralumla side of Adelaide Avenue and around 300 in West Deakin. Thus overall increase in population from the development area will be 4524 of which some 720 people are in the Deakin component.. This applies the figure for the average number of people per dwelling of 2.4 for Yarralumla (ABS 2011). The suburb of Bruce which has a different housing mix also has the same number of people per dwelling (ABS 2011). The development will thus increase the population of Yarralumla by 2.2 times. That is more than the same number of people again in an area a third of the size of Yarralumla's current residential use area of 146ha.

On any measure the development is greater than a major town centre. The area of existing open space to be developed of 49ha exceeds that of Kingston Foreshore which is 37ha by 32%. The new suburb of Denman Prospect in Molonglo—also on the 10km radius from the centre of Canberra—has 1,700 dwellings in 107ha - a dwelling density of 16/ha.

The height of dwellings adjacent to Dunrossil Drive and the Royal Canberra Golf Club has been reduced from 8 storeys to 4 storeys. The number of dwellings in the development as a whole that are 4 to 8 storeys has increased from 47% in 2013 to 55% in 2015. This is in stark contrast to the built character of the suburb of Yarralumla, which is 75% separate houses, over 22% semi-detached townhouses and less than 3% apartments. The population density of the development has increased from 34/ha in 2013 to 34.5/ha in 2015. While there has been some reduction in building heights on the Yarralumla side of the development the community's demand in 2014 for a reduction in density has not been met, with consequent impacts on traffic, infrastructure and amenity.

The amount of commercial space has been reduced from 15000m² to 10750m² with some 2000m² being on the Yarralumla side.

The 2010 "mothball brickworks" option provided for 1.4 times the level of make safe of the Brickworks heritage buildings as the 2015 development and it also included the Mint Interchange.

No justification for a doubling of the scale of the proposal from 2010 has been provided and there is no additional investment in community services, transport infrastructure or Canberra Brickworks preservation from the 2010 proposal.

The considerations of 2015 development are solely within the site. No account has been taken of the environmental, social and economic impact of the development on the district encompassing the suburbs of Yarralumla, Deakin and Curtin.

No assessment has been made of the impact of the development in particular the disruption caused by the 215 000 cubic metre cut and 205 000 cubic metres of fill earthworks, construction of the proposed interchange, realignment of roads and Adelaide Avenue bus stop on the flow of traffic on the major arterial roads of Adelaide Avenue and the Cotter Road during the construction, and the subsequent loss of the two T2 lanes. This disruption will occur over a ten year period.

No physical inspection has been made or any account taken of the safety and configuration issues of Woolls Street, Abbott Street and Bentham Street as access roads for traffic from the development and visitors to the Brickworks and Quarry Park. These roads are not at the

specification necessary for such traffic flows and this means they will become hazardous, congested and unsafe as access roads.

The impact of the development on the accessibility and amenity of the existing suburbs of Curtin, Deakin and Yarralumla has not been considered. Nor has the development and its impact on surrounding areas been assessed for its consistency with the National Capital Plan.

3. National Capital Plan Legal Framework

Objective

The National Capital Plan is the strategic plan for Canberra and the Australian Capital Territory, established by the Australian Government under the Australian Capital Territory (Planning and Land Management) Act 1988 (the Act). The overarching objective of the plan is to ensure that, 'Canberra and the Territory are planned and developed in accordance with their national significance and the pre-eminence of the role of Canberra and the Territory as the National Capital.'

Under Section 11(2) of the Australian Capital Territory (Planning and Land Management) Act 1988 "the Commonwealth, a Commonwealth Authority, the Territory or a Territory Authority shall not do any act that is inconsistent with the [National Capital] Plan."

The National Capital Authority has responsibility for determining detailed conditions and may permit development or use where it is satisfied that a particular proposal is not inconsistent with relevant Principles and Policies of the Plan.

Designated Land

The Act provides that the National Capital Plan may: specify areas of land that have the special characteristics of the National Capital to be Designated Areas where specific conditions are applied to development. Designated Areas are specified under the provision of Section 10 (1) of the Australian Capital Territory (Planning and Land Management) Act 1988.

Lands that have the "special characteristics of the National Capital" include

- Parliamentary uses; official residences of the Prime Minister and the Governor General; embassies, legations and high commissions of foreign countries and major national institutions
- Main Avenues and Approach routes to establish and enhance the identity of the approaches to the Central National Area as roads of national significance
- Griffin's design for the Capital that incorporated the hills of (inner) Canberra and the lake and its foreshores creating the landscape setting that makes a major contribution to the environmental quality which is a feature of Canberra's character
- Griffin's design as it incorporated the use of topography as an integral design feature and as a setting and a system of urban centres that are shaped and separated from each other by a system of open space that protected the major hills and ridges from development.

Fig.2. Land Use Plan (Territory Plan) – Grey hatched is Designated Land Orange is Suburban RZ1, Dark Green is Restricted Access Recreation PRZ2, Light Green is urban Open Space PRZ1, Light Blue is Leisure and Accommodation CZ6, Light Yellow is Broad acre NUZ1, Pink is Suburban RZ2



Main Avenues and Approach Routes

The objective for planning and development is to establish and enhance the identity of the approaches to the Central National Area as roads of national significance. Adelaide Avenue, the Cotter Road to Dunrossil Drive and including the Drive itself are designated Approach Routes in the Central (Parliamentary) Area under the National Capital Plan.

Fig. 3 Main Avenues and Approach Routes Central Area – National Capital Plan (May 2014)



Urban Design

The National Capital Plan provides for the continuation of urban development in the Territory as separate and distinct towns set in a broad landscape of valleys, with the immediate hills, ridges and other open space providing separation between the towns and the distant mountains providing a natural landscape backdrop.

Buildings in Canberra Central should be of a height generally not greater than the height of the natural tree canopy [typically 3 to 4 storeys]. In Canberra Central no building or structure which protrudes substantially above the tree canopy shall exceed a height of RL617m.

National Capital Open Space System - Hills Ridges and Buffer Spaces

Hills, ridges and buffer spaces are to remain substantially undeveloped in order to protect the symbolic role and Australian landscape character of the hills, ridges as the scenic backdrop to the Parliamentary Zone, civic and other National Capital Precincts, to maintain the visual definition and physical containment of the surrounding towns and to ensure that their landscape, environmental and recreational values become an integral part of the National Capital.

Before development is approved certification by the National Capital Authority is required that the proposals are not inconsistent with the National Capital Plan.

Heritage

The Territory's natural and cultural heritage should be identified, preserved, protected and conserved in accordance with internationally accepted principles, and in order to enhance the character of Canberra and the Territory as the National Capital. Planning and development should give due protection to any natural or cultural heritage place in the ACT included on the Register of the National Estate and/or heritage register of the ACT Government. Within Designated Areas the National Capital Authority will require Conservation Plans for listed heritage places. The Conservation Plans for cultural heritage sites will follow the principles of the Australia ICOMOS Guidelines for the Conservation of Places of Cultural Significance (Burra Charter). Planning policies and the applicable development conditions should conform to the requirements of any such Conservation Plan.

Policies and Standards for Environment

As wide a range as possible of the naturally occurring plant and animal communities and species of the Act should be protected in situations where their long term survival can be expected and the propagation of rare and vulnerable species in suitable protected habitats will be encouraged.

Referral is required under the Environment Protection and Biodiversity Conservation Act (1999) where the scale or nature of a development is likely to have a significant impact on the environment of the ACT and the adjoining region.

4. Development inconsistent with National Capital Plan

The development area outlined in red in Fig.4 both incorporates and abuts large areas of designated land as well as a Main Avenue and Approach Route. Thus the development itself and its impact on adjacent designated land approach routes must be consistent with the National Capital Plan and subject to approval by the National Capital Authority.

The land to the south, north and west (Sections 103, 113, 119 and 123) of the Canberra Brickworks is designated land, and forms part of the National Capital Open Space system. The Open Space system includes the inner hills that form the setting for the National Capital, and Lake Burley Griffin and its foreshore. The principal of visual separation between the main town centres within the National Capital is a key element of the Open Space system. The ridgeline to the south of the brickworks forms an effective barrier between Yarralumla and Woden to the south. Sections 103, 119 and 122 are designated land within the National Capital Area. Section 122 is the Governor General's residence; and Adelaide Avenue, the Cotter Road and Dunrossil Drive comprise a designated Main Avenue and Approach Route.

Consistency with the National Capital Plan

The development is inconsistent with the National Capital Plan. The underlying tenet of the National Capital Plan is that "Canberra's national image would be impaired if the emphasis on landscape, both within urban and non-urban areas, became diminished. This is particularly important to Canberra Central having regard to its proximity to the main National Capital functions". The development will level the 49ha site eliminating the densely wooded ridge lines and open space that form a visual buffer between Woden and Civic. This area contains some 2000 mature trees of 10 to 14 m high.

Fig.4 Development area outlined in red showing wooded areas that will be eliminated



Importantly the ridges that are covered by these tall trees frame the entrance to Dunrossil Drive as the Approach Route to the Governor General's residence. The current processional route to the Governor General's residence provides an uninterrupted vista of the Brindabella Hills from Adelaide Avenue along the Cotter Road, with the route either side set in a mature densely wooded tree-scape of hills. The junction of the Cotter Road and Dunrossil Drive provides a true sense of place as a bush setting with the drive entering through an undulation in the forested 590m ASL high ridge line and no sign of urban habitation. As the ridge is passed the Drive unfolds, lined by a formal avenue of mature *Ulmus carpinifolia* trees planted in 1918 that extend the full length of the Drive.

A "Tree Assessment" report of the development site was prepared for the LDA in 2010 by dsb Landscape Architects. This report strongly supports the retention of these wooded areas. The report found these tree covered ridges and slopes between Denman Street, Adelaide Avenue/Yarra Glen, the Cotter Road and Dunrossil Drive, to be significant landscape assets. The ridges are generally a mixture of *Casuarina*, *Pinus*, *Quercus* and *Ulmus* spp in good condition and classified as high value (Arboricultural assessment value H and Urban Amenity Assessment value H) (dsb 2010). The trees are 10 to 14m high and the primary tree canopy forms the skyline views from Yarra Glen and Adelaide Avenue. The report states that they contribute to the landscape delineation between South Canberra and Woden Valley and should be managed as a collective tree landscape asset.

Fig. 5 Dunrossil Drive junction with Cotter Road looking east - all trees to be cleared (March 2015)



This report also finds that the tree groups along Denman Street and Dudley Street provide a landscape barrier from winter south westerly winds and noise from the arterial roads. The report states that these trees in this area collectively contribute to a valuable asset that provides landscape scale, enclosure, edge definition and amenity that is worthy of retention and ongoing management.

Fig. 6 Denman Street Bosca Planting and Ridge line – all trees to be cleared (March 2015)



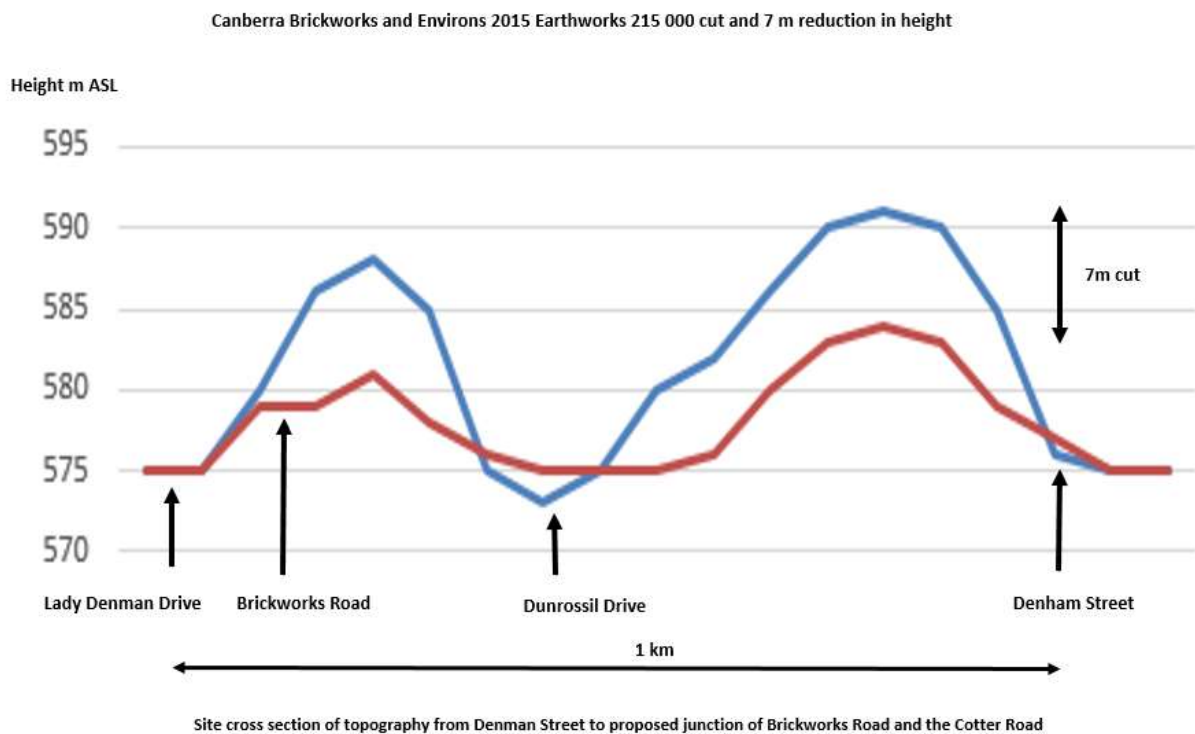
In addition the wooded area of the site adjacent to the Royal Canberra Golf Course and Dunrossil Drive has historic and cultural value as the trees are the remnants of the original Westbourne Wood plantings in 1920. The report recommends a program to replace poorly performing trees to retain the integrity of this historical/cultural landscape. Moreover a high proportion of the trees within the development site are also “Regulated Trees “covered by the Tree Protection Act 2005 and approval is required to remove a Regulated tree.

The 2015 development however is in conflict with both the National Capital Plan and the above Tree Assessment Report. The development will eliminate the ridges that are 590m high and covered with 14m high mature trees. In its place will be an essentially flat high density development. The earthworks of 215 000 cubic metres of cut to reduce the height by 7m and the 205 000 cubic metres of fill will eliminate gullies and undulations giving low slope gradient across the whole 49ha site.

Fig 7 Ridge line Denman Street and Dunrossil Drive from Adelaide Avenue (March 2015)



Fig. 8 Section of proposed cut and fill across site From Denman Street to New Cotter Road Brickworks Road junction



This site levelling will enable the construction of 1850 dwellings of which 55% will be apartment blocks of 4 to 8 storeys as the reduction in the height of the ground will avoid the need to comply with the requirement that in Canberra Central no building or structure which protrudes substantially above the tree canopy shall exceed a height of RL617m. However it still does not meet the principle that buildings in Canberra Central should be of a height generally not greater than the height of the natural tree canopy [typically 3 to 4 storeys].

The site levelling will also eliminate the entire habitat of the critically endangered Golden Sun Moth (Fig 23 and 24) and the 1.5 hectare of protected natural temperate grassland. These communities have been assessed as viable with long term survival expected (Rowell 2012 Umwelt 2015). Thus developing housing on this entire habitat does not meet the policies and standards applying to the environment in the National Capital Plan which requires such communities to be protected.

Earthworks of this extent will require the removal of all vegetative cover including all the 2000 plus trees. Re-establishing of parkland is to occur in Stage 3 at 9 to 10 years, apart from the small 0.34ha Denman Park that is in Stage 1. Thus the area will be a flat construction site for a decade with no mature trees for 20 years.

The development will significantly alter the Adelaide Avenue Approach route by taking it over a new interchange at the Deakin Mint. Adelaide Avenue will be flanked by 6 plus storey buildings and the Brindabella vista and the collective tree landscape scale asset will be gone.

This forms the entrance to Dunrossil Drive, the processional route leading to the Governor General's residence. Government House is approached along Dunrossil Drive which begins with a grove of oak trees and is lined with elms and robinias planted in 1918. The prominence of the elms is important as elm avenues are now quite rare, even on a world scale. The grounds are entered through the gates at the end of Dunrossil Drive. This avenue planting of elms is listed on the Commonwealth Heritage list (Place ID 105381, Place File 8/01/000/0329, Legal Status listed Place 22/06/2004) and hence assessment by the Commonwealth under the Environment Protection and Biodiversity Conservation Act 1999 will be required.

Fig. 9 Heritage Listed Dunrossil Drive looking north towards Governor General's residence



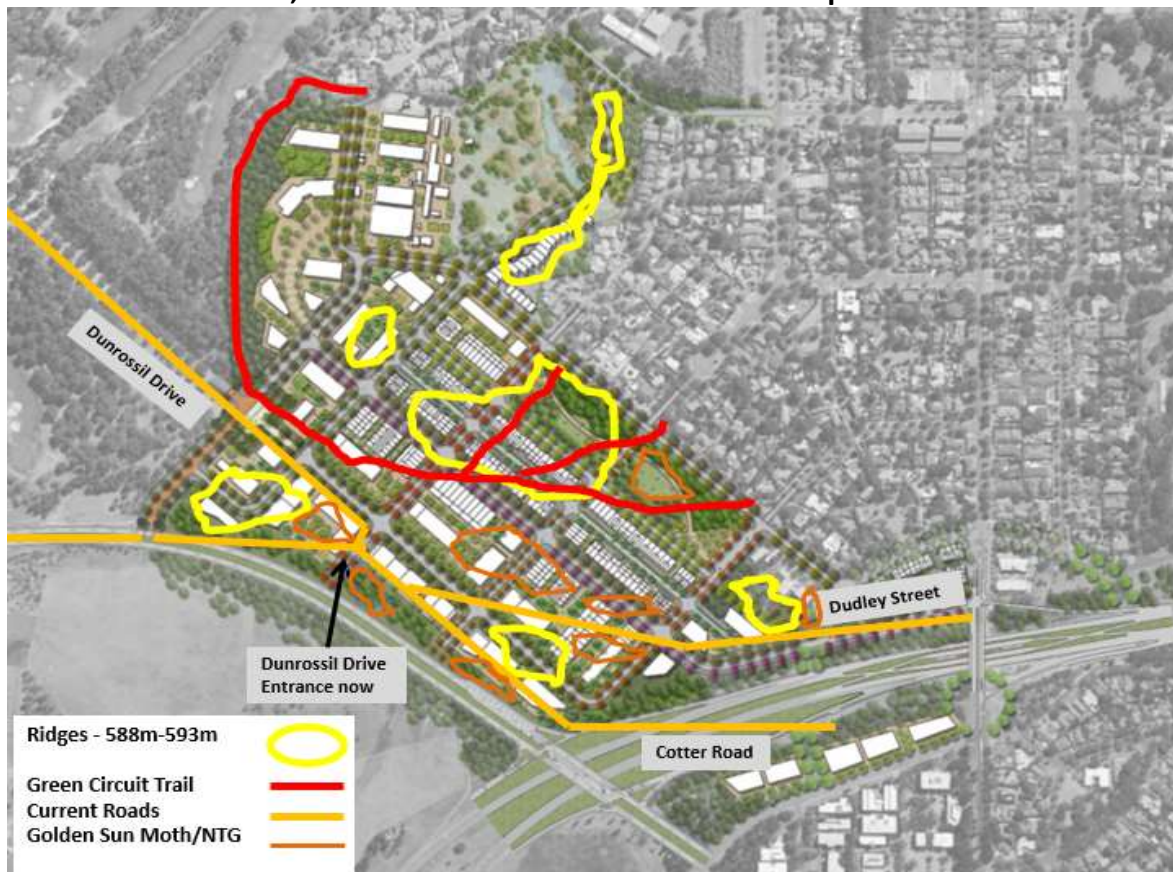
The current access to Dunrossil Drive directly off the Cotter road will be removed and entry will be via a new road, the Brickworks Road which will be the sole access and egress point to the Cotter Road arterial for the 1885 dwelling housing development. Entry to Dunrossil drive will be by a right hand turn off Brickworks Road and Dunrossil Drive itself will be foreshortened by over 20% with the loss of at least 30 of the 1918 plantings of Ulmus

carpinifolia through the earthworks and construction of roads services and apartment blocks. This does not meet the requirement for heritage protection for natural or cultural heritage included on the register of the National Estate. In addition Brickworks Road will be the main service road through the development for the Canberra Brickworks and shops and this may pose security issues for visiting dignitaries that periodically precludes access for residents to some 1500 dwellings.

Fig. 10 Dunrossil Drive looking south at the segment that will be eliminated (March 2015)



Fig. 11 Proposed development with removal of ridge line; loss of 20% of Dunrossil Drive; loss of Green Circuit trails; loss Golden Sun Moth and Natural Temperate Grasslands



There will be significant disruption to access over the decade of earthworks, interchange construction, housing construction and remodelling of Adelaide Avenue to deliver access to rapid buses which will impact on the Main Route and Approach Route to the Governor General's residence.

Overall the scale and scope of this development and the significant changes it will engender are inconsistent with the principles and policies of the National Capital Plan as they apply to Designated Areas, Main Avenues and Approach Routes, Ridges and Buffer Zones, Urban Design and the Environment.

Indeed Lovell Chen (2010) made specific recommendations to the LDA in regard to the National Capital Plan for the development that included the Canberra Brickworks that:

Any new road servicing the Canberra Brickworks is located off Dudley Street and not Cotter Road so as not to conflict with Dunrossil Drive as the formal entrance to the Governor General's residence.

Any new residential areas should be contained to the north of the ridge line running from the Cotter Road / Dunrossil Drive intersection through to Denman Street so as to assist in maintaining visual separation between Central Canberra and Woden Valley.

Existing amenity / inter-town visual separation planting be maintained within the blocks currently identified as 3/94, 1/123 and 1/113.

Lovell Chen's recommendations are nearly identical to those made by Conroy and Munn (ACTPLA 2005) in relation to any residential development being contained behind the ridge and retaining this as the buffer zone. Indeed the original development proposal in 1980 by AR Marr (Lester Firth 1986) was for all the housing development to be undertaken behind the ridge line with its preservation as a buffer.

5. Estate Development Code

The 2015 development is proposed to be an Estate development. The Estate Development Code applies to all proposals in the ACT for the subdivision of land requiring the preparation of an Estate development plan. This code provides additional planning, design and environmental controls to support the objectives of the relevant zone. Where a development is subject to special requirements under the National Capital Plan, or any relevant development control plan prepared under the National Capital Plan, the development must not be inconsistent with the special requirements or development control plan.

The objective of the Estate Development Code is to facilitate sustainable, safe, convenient and attractive neighbourhoods that meet the diverse and changing needs of the community. This encompasses offering a wide choice in good quality housing and associated community and commercial facilities, providing for local employment opportunities, encouraging walking and cycling, minimising energy consumption, and promoting a sense of place through neighbourhood focal points and the creation of a distinctive identity which recognises and, where relevant, preserves the natural environment (after AMCORD 1995). An estate development plan may introduce additional ongoing provisions relating to particular blocks or areas within a future urban area. These provisions may be incorporated into the Territory Plan under s96(2) of the Planning and Development Act 2007

ACT Government 2013 Estate Development Code		Met by 2015 Development
PART A Estate Planning in all zones		
Rules	Criteria	
Element 1 Layout		
1.1 Estate Layout		
	<p>C1 The subdivision layout and movement networks achieve all of the following: d) effective traffic management to restrain vehicle speed, deter through-traffic and create safe conditions for other road users e) retention of significant vegetation and habitat areas including consideration of ecological connectivity f) incorporation of natural and cultural features g) minimal risk of soil erosion including the risk of soil erosion from cut and fill</p>	<p>NO Quarry road specifically being built to prevent rat running in the development and direct it into Bentham Street in existing suburb which is equivalent to an Access B street and will add 2700 movements a day taking the load to Major Collector level on a street 6m wide. Development levels site removing all 2000 trees and ridges which are landscape scale feature, eliminates 1.5ha of natural temperate grassland and golden sun moth habitat; Ridges cut by 7 metres with 215 000 cubic metres of cut. Impact on Commonwealth heritage listed Dunrossil Drive Development does not comply with Canberra Brickworks Conservation Management Plan</p>

Element 3 Street Network		
3.5 Design of streets in bushfire prone areas		
R22 Street trees and vegetation within the verge of edge streets referred to in the previous rule comply with the asset protection zone requirements in the Planning for Bushfire Risk Mitigation General Code.	This is a mandatory requirement	NO Asset protection Zone requirements not encompassed in development
Element 4 Public Realm		
4.1 Networks	C23 Public realm spaces achieve all of the following: e) opportunities for wildlife corridors between natural areas, where appropriate	NO NO Over 1.5 ha of Natural Temperate Grassland and Golden Sun Moth Habitat will be eliminated
Element 5 Environment Protection		
5.3 Earthworks	C35 The extent of earthworks is minimised. The proposed street and block layout minimises the extent of earthworks.	NO 215 000 cubic metres of cut and 205 000 cubic metres of fill is required to remove existing landforms so that high density dwelling grid layout can be built
5.4 Tree protection		
R37 This rule applies to a development that has one or more of the following characteristics: a) requires groundwork within the tree protection zone of a <i>protected tree</i> b) is likely to cause damage to or removal of any <i>protected trees</i> c) is a <i>declared site</i> . Note 2: <i>Protected tree</i> and <i>declared site</i> are defined under the <i>Tree Protection Act 2005</i> .	This is a mandatory requirement	NO 2000 trees will be removed. The majority are Regulated Trees.

5.5 Heritage		
R38 This rule applies to <i>estates</i> where sites within the development area are either listed or nominated to the Heritage Register. Development complies with the mitigation measures recommended in a heritage statement endorsed by the Heritage Council	This is a mandatory requirement	NO Development will eliminate component of Dunrossil Drive on the Commonwealth heritage List. Development not in line with Conservation Management Plan 2010 for Canberra Brickworks
R39 This rule applies to an estate unless the Heritage Council has provided written confirmation that there are no Aboriginal sites and/or objects are located within the development area, Development complies with the relevant cultural heritage assessment and conservation management plan endorsed by the ACT Heritage Council.	This is a mandatory requirement	NO Development not in line with Conservation Management Plan 2010 for Canberra Brickworks. Full archaeological investigation has not been undertaken to determine if there are indigenous and other heritage sites.
5.6 Contamination		
R40 This rule applies to an <i>estate</i> unless the EPA has provided written confirmation that there are no contaminated sites within or adjacent to the development area. Development complies with the relevant environmental site assessment report endorsed by EPA	This is a mandatory requirement	NO Brickworks site contamination subject to assessment and remediation plan
5.7 Matters of national environmental significance		
R41 This rule applies to land affected by a plan for the protection of matters of national environmental significance (NES plan) approved under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth). Development is not inconsistent with the relevant NES plan.	This is a mandatory requirement	NO Over 1.5 ha of Natural Temperate Grassland and Golden Sun Moth Habitat will be eliminated

PART B Estate Planning in Residential Zones and CZ5		
Element 10: Public realm		
R66 Local neighbourhood parks have an area not less than 0.5ha. Central neighbourhood parks have an area of between 1ha and 2ha	This is a mandatory requirement.	NO Denman Park 0.34ha
Element 14: Street networks		
14.1 Street function		
Rule 85 Street types are to be endorsed by TAMS. Note: TAMS will endorse street types if they comply with the design speed and traffic volume provisions in the following: a) for estates in other than industrial zones – table 2A b) for estates in industrial zones – table 2B. TAMS may endorse the upgrading of a street (from the level complying with the relevant table specified in this rule) to the next highest level in the hierarchy of roads. In making its assessment TAMS will consider whether the street in question performs the function of the specified street type.	This is a mandatory requirement	NO A number of the streets in the development seem to be at a street type level too low for the traffic volume. Streets in the development connect directly to streets in existing Yarralumla that would not meet these criteria and will therefore become hazardous, congested and unsafe.
R86 Connections between streets with different hierarchies are to be endorsed by TAMS. Note: For the purposes of this rule the street hierarchy is: i) rear lane or shared access street ii) access street A iii) access street B iv) minor collector v) major collector vi) arterial road These street types are defined in tables 1A,	This is a mandatory requirement	NO Traffic counts too high for road class

Table 1A: Street hierarchy for estates in residential zones and CZ5		
Street type and function	Design speed (km/h)	Traffic volume (vehicles per day) ⁽¹⁾
REAR LANE	30	0-160 ⁽²⁾
Rear lanes are narrow and short streets which have the primary function of providing rear vehicular access to blocks.		
ACCESS STREETS		
Access Street A	60	0–300
Access Street B	60	301–1000
Access streets are used where the residential environment is dominant, traffic is subservient, speed and traffic volumes are low and pedestrian and cycle movements are facilitated. Access streets are categorised as Access Street A or Access Street B according to traffic volumes. Access Street A generally collects traffic from rear lanes and connects to collector roads; they do not normally accommodate traffic from other streets.		
COLLECTOR ROADS		
Minor collector	60	1001–3000
A minor collector road collects and distributes traffic from access streets to major collector roads or direct to the external arterial road network. A reasonable level of residential amenity and safety is maintained by restricting vehicle speeds by means of street alignment, intersection design or by speed-control measures. Direct property access is allowed.		
Major collector	70	3001–6000
Major Collector Roads collect and distribute traffic within residential, industrial and commercial areas. They form the link between the primary network and the roads within local areas and should carry only traffic originating or terminating in the area. The volume of traffic carried is constrained by environmental objectives – safety and traffic noise – and reflects the limited area that they serve. Direct property access is still permissible but the access and egress arrangements should be such that vehicles can exit properties in a forward direction.		
Notes supporting table 1A		
1. To calculate the traffic volume apply a traffic generation rate of 8 vehicle movements per day per dwelling for single dwellings, a rate of 6 vehicles per day per dwelling for multi-unit developments, and a rate of 7 vehicles per day for blocks 360m ² or smaller.		
2. 160 vehicles per day maximum at the intersection of rear lanes with access streets.		

Table 2A Street Network requirements – all estates except industrial zones						
Facility Type	Rear Lane	Shared use access street 'Woonerf' style	Access Street A	Access Street B	Minor Collector	Major Collector
Traffic volume range (vpd) (1)	0-160(3)	0-40	0-300	301-1000	1001-3000	3001-6000
Design speed (km/h)	30	30	60	60	60	70
Minimum carriageway width (m) (2)	5.5 (5.0 where the lane is less than 60m in length)	3.5-3.7 (single lane)	5.5	7	10	10
Verge width (m)	minimum 1.5m	5.0	5.5	6.25	6.25	6.25
Minimum horizontal radius (to accommodate)	12.5m single unit truck					
On-street car Parking	Prohibited	Permitted only as indented spaces	Assumed on one side of the carriageway only	Assumed staggered on both side of the carriageway only	Assumed on both side of the carriageway only	Assumed on one side of the carriageway only
Kerb type	Flush or layback upright kerb adjacent to street lighting	Flush or layback upright kerb adjacent to street lighting	Layback or upright	Layback or upright	upright	upright
Maximum street longitudinal gradient	Maximum street longitudinal gradient	12.5%	12.5%	12%	12%	12%
Minimum shared path requirement	No shared path required	No shared path required	1.5 wide shared path on one side only	2.0m wide on one side only	2.5m wide shared path on both sides and aligned at least 1.5m away from the kerb	2.5m wide shared path on both sides and aligned at least 1.5m away from the kerb
Bus route Requirement	Not to be used as bus route	Not to be used as bus route	Not to be used as bus route	Not to be used as bus route	can be used as a bus route where in accordance with table 3	can be used as a bus route where in accordance with table 3
Street tree Requirement	No trees required and not to be planted unless sufficient space is provided	Street trees to be provided	Street trees to be provided	street trees to be provided	street trees to be provided	street trees to be provided
Intermittent street Lighting	Must be provided when length exceeds 60m					
Notes supporting Table A						
1	For residential and CZ5 zones - to calculate the traffic volume for streets apply a traffic generation rate of: 8 vehicle movements per day for single dwelling blocks larger than 360m ² 7 vehicles per day for single dwelling blocks 360m ² or smaller 6 vehicles per day per dwelling for multi unit developments					
2	The carriageway width is measured from kerb invert to kerb invert. The carriageway width measurement does not include any designated on-road car parking spaces, on-road cycle lanes, indented car parking bays or medians.					
3	Measured at the intersection of each leg with a higher order street.					

6. Transport modelling and reliability of forecasts

Transportation models are generally classified into microscopic, mesoscopic, and macroscopic models. Microscopic models study individual elements of transportation systems, Mesoscopic models analyse transportation elements in small groups, Macroscopic models deal with aggregated characteristics of transportation elements, such as aggregated traffic flow dynamics and zonal-level analysis.

In order to ensure that the model selected provides appropriate results for decision making there are four steps that need to be undertaken. The model needs to be verified and adjustments made to provide consistency with observed network characteristics and constraints. Model calibration is required through the adjustment of parameters in order to optimise the agreement between observed data and the model's predictions. Model validation is then necessary through comparison of model outputs against independent, observed data to provide confidence in the accuracy of the model forecasts.

The NSW Government 2013 - Traffic Modelling Guidelines 2013 NSW Transport Roads and Maritime Services identifies key scope areas that need to be addressed. As a project may have consequences for traffic flow beyond the immediate vicinity of the works, the network adjacent to the area being tested with the level of congestion should be included. Existing causes of congestion and bottlenecks in the local network that are not contained within the proposed model boundary need to be included. The proposed project may influence traffic beyond the physical extent of the study area. Local knowledge of the network is invaluable in identifying the extent of the likely impacts and as such it is recommended that such advice be sought.

The traffic modelling undertaken for the 2015 development uses the EMME CSTM strategic transport model. This is a macroscopic model that is being applied to a small development area. An assessment of the model against microsimulation results and actual traffic counts in Yarralumla indicates that there are fundamental differences between traffic counts collected at specific locations outside the proposed development area between 2012 and 2014 and modelled traffic volumes reported from the CSTM strategic transport model. The extent of these differences is significant and indicates that the CSTM modelling results for the development are not sufficiently consistent with real world traffic counts to provide a reliable basis for decision making. The SMEC 2013 (Canberra Brickworks and Environs Options & Evaluation Report Update 17 December 2013) advises "In contrast the strategic model output is entirely constrained by capacity and is therefore not a complete representation of the real demand on those road or routes."

The following issues arise from the SMEC (2015) strategic modelling:

Traffic counts at the arterial road intersections adjoining the development were made for 31 July 2014 (Appendix A) but are not used in the CSTM analysis (Section 4.1 Page 11).

The microsimulation model (Section 4.4) only addresses traffic within the development, Cotter Road and Adelaide Avenue. Traffic routes in existing Yarralumla are not included in the model.

The intersection analysis (Section 4.5) only addresses the intersections on or near Adelaide Avenue and the Cotter Road. Traffic routes in existing Yarralumla are not included in the analysis.

The CSTM does not have existing traffic volumes for many Yarralumla streets that are proposed as access roads between the development and the existing suburb in particular Maxwell, Banks, Weston (between Banks and Novar), Kintore Crescent, Abbott and Woolls Street. The impact of this is significant for example the ACT Roads traffic count from 2012 shows Weston Street (between Banks and Novar) at 1 877 vehicles per day and the CSTM at zero (Page 16). This is further evidenced by the table below.

Mid-Block Counts AM Peaks

Street	2011 AM Existing SMEC Report 17/12/2013 Page 12 Strategic Model	2021 AM Do Nothing SMEC Report 17/2/2015 Page 14 Strategic Model	2010 AM Existing SMEC Report 17/12/2013 Page 20 Micro-Simulation Model	2014 AM Actual July AusTraffic 31 st July 2014 SMEC Report 17/2/2015 Appendix A Actual
Dudley St (EB/WB)	270/160	720/160	750/150	878/233
Novar St (NB/SB)	190/170	180/150	420/260	397/244
Denison St (EB/WB)	80/180	80/360	160/630	150/572
Kent St (NB/SB)	360/690	370/730	690/1,040	656/1,064

The volume of traffic generated by the development in the CSTM does not align with that calculated by applying the methodology required by the Estate Development Code (2013) “To calculate the traffic volume apply a traffic generation rate of 8 vehicle movements per day per dwelling for single dwellings, a rate of 6 vehicles per day per dwelling for multi-unit development, and a rate of 7 vehicles per dwelling per day for blocks 360m2 or smaller.” Applying this calculation the 2031 traffic exiting the development is the existing Dudley Street traffic AM peak 417 plus traffic generated by the development of 810 - that is 1 227 movements compared to the CSTM 2031 figure of around 700. Thus the traffic modelling is showing an underestimate of 500 vehicle movements for AM peak and 5 000 vehicles a day exiting the development.

Calibration and validation of the traffic volumes by reference to actual counts and the assessment of traffic outside the development area is important as it will influence the development road hierarchy. For example within the development the CSTM modelling vehicles movements for the Quarry road put it at Minor Collector level in the Street hierarchy, whereas it is classed as an Access Street A in the development proposal.

Validation is also very important to ensure that the access roads that provide connectivity between the existing suburb and the development are of sufficiently high specification to be able to carry that load safely and without congestion. Specific examples of such impacts are provided in the section below. A full traffic survey of the existing suburb of Yarralumla and adjacent areas, must be undertaken and modelling updated and peer reviewed to ensure development does not render the current suburbs inaccessible and unsafe.

7. Traffic Flows, Congestion and Parking

The impact of the development on the existing suburb in terms of appropriate and safe access streets, parking, congestion and rat running has not been assessed. The existing streets, in particular those proposed for access, are not at a specification necessary for such purposes and the new Quarry road will generate pedestrian and vehicle safety issues and the impact will be severe.

Arterial Roads

The Mint Interchange is re-instated from the 2010 proposal and this is a positive step to address the significant traffic flow issues from a development of the scale proposed. The proposed Mint Interchange and signalisation of the Brickworks Road, Kent Street and Dudley Street junctions will reduce the existing bottlenecks at the Dudley Street roundabout and the Adelaide Avenues/Kent Street intersection. It is also likely to reduce rat running through the development. Equally given the close proximity of the junctions being signalised this may create other flow problems. However the impact of access to the existing suburb and rat running from the development through the existing Yarralumla has not been assessed.

The impacts of the Mint Interchange on Denison Street and the suburb of Deakin have not been assessed. The impact of the Adelaide Avenue/Kent Street bus stop on the traffic flows along Adelaide Avenue due to the loss of two T2 traffic lanes and likely partial loss of the two bus only lanes have not been assessed.

The forecast overall increase in population from the development area of 4524 and 2639 vehicles of which some 720 people and 420 vehicles are in the Deakin component. This will result in major car and pedestrian safety issues in accessing existing Yarralumla. It will also bring a significant increase in traffic congestion and rat running as the specifications and layout of the proposed connecting street infrastructure of Yarralumla is unsuitable, inappropriate and inadequate for such purposes.

The development has only one exit point onto the arterial Cotter Road. This is the proposed exit and entry for some 2639 residents' vehicles. Even with signalisation this will prove problematic at peak periods and provide difficulties for dignitaries in the approach to Government House. In addition Brickworks Road will be the main service road through the development for commercial vehicles to the Canberra Brickworks and the shops and this may pose security issues for visiting dignitaries that periodically precludes access for residents to some 1500 dwellings. This single egress point is likely to become a bottleneck equivalent to the Jerrabomberra roundabout. This single access point is not the approach taken at the Kingston Foreshore development that has five access roads onto the main arterial of Wentworth Avenue.

Traffic Flows in Yarralumla and Congestion

There are two main changes to the roads connecting the development to the existing Yarralumla suburb, namely connection of the Quarry Ridge road to Bentham Street and connecting Woolls and Abbott Streets, as direct access roads from the development, and in addition there is subsequent access via Maxwell/Weston Street. These roads are not viable as access roads to Yarralumla owing to their width and configuration and will be exceedingly hazardous for vehicles and present significant safety issues for residents and pedestrians.

The proposed Quarry Road in Stage 3 is specifically included in the development to prevent rat running through the development and direct traffic into Bentham Street in the existing suburb which is equivalent to an Access B street but only has a 6m wide carriageway. Bentham Street is the location of the Yarralumla shops with 49 spaces for 90 degree parking on both sides of the road. The ACT government has acknowledged that this parking is subject to a high accident rate as cars parked on each side of the street need to reverse across to the other side of the street in order to exit the parking bay, there are inadequate parking spaces, and the parking configuration does not meet the Australian Standard (AS2980.5) for road width (ACT Government 2014). The development area traffic would then continue straight past the Yarralumla Primary School. The connection to Quarry Road will add 2700 movements a day taking the traffic load to Major Collector level that should require a 10m carriageway. This traffic volume resulting from the development will result in a road that is far overcapacity for its specification and highly dangerous taking nearly 2700 vehicles a day through a hazardous parking area.

Fig.12 Yarralumla Centre- Bentham Street Shops looking east (March 2015) – proposed main access street from development will add 2700 vehicle movements a day through this on street parking





The development's access roads which are subject to the specifications in the Estate Development Code 2013 will connect to Yarralumla streets that would not meet those requirements in terms of width and configuration traffic volume (Woolls Street, Abbott Street, Weston Street, Bentham Street and Kintore Crescent).

The current traffic along the western end of Weston Street, between Maxwell and Novar Streets was 1827 movements a day in 2012. Development Stage 1 will add 1950 movements per day to this street. This means 3777 car movements a day on a 6m wide road. This takes the road from being equivalent to Minor Collector that requires a minimum carriageway width of 10m (Estate Development Code 2013) up to a Major Collector. Similarly the development traffic will access Woolls Street which has a maximum carriageway width of 6.1m (5.5m at the western end and 6.1m at the southern end); a total width including reserves of 18.1m; a right angle bend; and about 140 movements per day. By 2021 traffic movements will be 2640 per day a 19 fold increase, and as such under the Estate Development Code would be classified as a Minor Collector road which requires a minimum road width of 10m and total width including reserve of 22.5m.

Maxwell Street is not shown to be a direct access road but is likely to be used as an alternative to Abbott Street. If it were to be used as such there are problems at the Weston Street Y junction where the road narrows considerably at the point where there is a Children's Pre School. Also the Maxwell Street and Weston Street intersection with Novar Street is similar and already has a high accident rate. Novar Street is the suburb's main thoroughfare and has very heavy traffic so vehicles from the new area will have difficulty both turning into Novar Street and crossing it.

Fig. 13 Woolls Street looking south to junction with Maxwell Street (March 2015) a 6.1m wide road proposed to carry 2640 traffic movements a day from the development



Fig. 14 Access to Woolls Street from development and immediate right angle bend



Parking

As part of addressing issues that were raised in consultations, the provision in Stage 3 at 9 to 10 years of 50 to 96 parking spaces in Bentham Street would go some way to meeting the 2015 shortfall of 166 spaces at the Yarralumla Centre. However their construction would be illegal as the steep slope exceeds that required for safety by the current Australian Standard (AS2908.5). Moreover this quantum of parking is totally inadequate for any requirements arising from the Quarry Park, Brickworks site activation or traffic from the development using the Yarralumla shops in Bentham Street.

There is a proposal for an unspecified number of parking spaces at the Canberra Brickworks in Stage 3. To be adequate to service the Brickworks and Quarry Park this would need to be at least equivalent to the AR Marr 1986 proposal of 400 parking spaces. Based on the Parking and Vehicular Access General Code (ACTPLA 2012) and 7500m² commercial space at the Brickworks, which is a CZ6 zone, the requirement would be over 500 parking spaces with additional requirements for the Quarry Park. Hence this quantum of parking is totally

inadequate for any requirements arising from the Quarry Park, Brickworks site activation or traffic from the development using the Yarralumla Centre.

The Yarralumla Centre and shops in Bentham Street have parking for 46 cars. Based on its current commercial space, it requires an estimated 255 car parking spaces within a 200m radius. The 2015 development now has provision of 50 to 96 parking places at the top of Bentham Street adjacent to the Golf Course to be provided in Stage 3 that is 10 years after the start of the development. Current congestion in the surrounding streets has led to significant accident and safety issues. The incident assessment report by the ACT Government (2014) 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). They also advised, referring to the Australian Standards for on street parking (AS2908.5) that the geometry of Bentham Street does not comply with the minimum road width requirements for 90 degree parking.

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.

Equally the provision of 20 parking places adjacent to the Uniting Church in Denman Street (at the expense of the land previously set aside for the Denman Street Park) will not meet 2015 usage.

Fig.15 Current parking needs of over 50 spaces in Denman Street at Uniting Church (February 2015) to be replaced by 15 to 20 spaces in proposed Denman Park



Street Hierarchy

The development has only one direct connection to a major arterial road that is the Brickworks road junction with the Cotter Road. There is indirect access via the congested Dudley Street roundabout to Adelaide Avenue, which may be signalised. The proposed road hierarchy (SMEC 2015 Page5) has the highest level roads as Brickworks Road and Central Street, which are classified as Minor Collector. These have 10m wide carriageway and a minimum verge width of 6.25m. The road reserve for this level includes shared paths, and space for both on-road cycling and on-street parking on both sides. The majority of the development's streets are classified as Access Street B, which have a carriageway width of 7m and minimum verge of 6.25m and on-street parking on both sides and shared paths on both sides.

Applying the Estate Development Code metric indicates the development will generate 9000 vehicle movements per day (1500 dwellings * 6 vehicles per day per dwelling). Based on proportion of total residential space Park Street residents will generate around 3600 vehicles movements per day (vpd) and thus should be a Major Collector (vpd 3001 to 6000).

Central Avenue is fed from Park Avenue, North Terrace and these together with the other streets put the vehicle per day in the 3001 to 6000 range which would require it to be a Major Collector. Similarly Brickworks Road will collect all traffic from the development to the Cotter Road and provide the new route for existing traffic from the Cotter Road to western Yarralumla via Brickworks Road. This will also put it into the Major Collector range if not greater. The SMEC report (2011 Page 12) has a Brickworks Road AM peak of 899 that is 8999 vpd and the road layout has not essentially changed.

If micro-simulation was run on the development, again applying the Estate Development Code metric, Quarry Road, Woolls Street South and Abbott Street South are likely to be in the 1000 to 3000 range of a Minor Collector road.

The traffic modelling needs to be calibrated and validated using actual counts for areas outside the development and microsimulation modelling is required for the development to ensure that the street hierarchy is adequate and will meet the requirements of the Estate Development Code. Where streets may need to be upgraded to a higher level the development layout will need to be adjusted to provide the necessary space for wider roads.

The impact of the development on the existing suburb in terms of appropriate and safe access streets, parking, congestion and rat running has not been assessed. The existing streets and those proposed for access are not at the specification necessary for such purposes and the new Quarry road will generate pedestrian and vehicle safety issues and the impact will be severe.

Decisions on the development should not be made on unrepresentative and insufficient data and assessment. A full traffic survey of the existing suburb of Yarralumla, and indeed adjacent Deakin and Curtin must be undertaken to form the basis for analysing future traffic flows and model validation. The application of the CSTM strategic modelling should be recalibrated and subject to peer review. This will ensure the development itself has the right road infrastructure and does not result in the current suburb becoming gridlocked due to excessive traffic flows along roads that are under specified.

8. Public Transport not Accessible

The development does not 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 engineering design is not workable as it requires buses to cross immediately two lanes of fast traffic when merging from the Cotter Road from the west to Adelaide Avenue to pull up at the bus stop under the Kent Street Bridge. Buses coming from the East will need to reverse back down Adelaide Avenue to enter the Bus stop. This creates significant safety and operational issues and substantial safety risks for stopping buses adjacent to high speed traffic lanes.

Fig. 16 Proposed Bus Stop Adelaide Avenue (SMEC 2015) with buses needing to reverse plus loss of T2 lanes



In addition Adelaide Avenue will at best be reduced from 6 lanes of which two are T2 to 4 lanes and two bus lanes only. The impact of this on the traffic flows of this arterial road overall has not been assessed. However in order to create the Kent Street Bus stop and access slip roads the bus only lane will most likely need to be removed at this location due to the narrow configuration and cutting of Adelaide Avenue at this location.

The edge of the development is a kilometre away from existing bus stops and routes in Yarralumla. That is twice as far as the distance used to plan access to public transport of 500m for standard and 750m for high frequency services. Moreover the centre of the development is over 750 metres away from the Adelaide Avenue bus stop proposed in Stage 3 of the development. Access for the elderly, the disabled is questionable and heavy patronage of a bus service when and if it becomes available seems unlikely.

A Cotter Road Peak Express bus stop may be implemented in 2031 and could service the western part of the development (SMEC 2015).

9. Civil Infrastructure

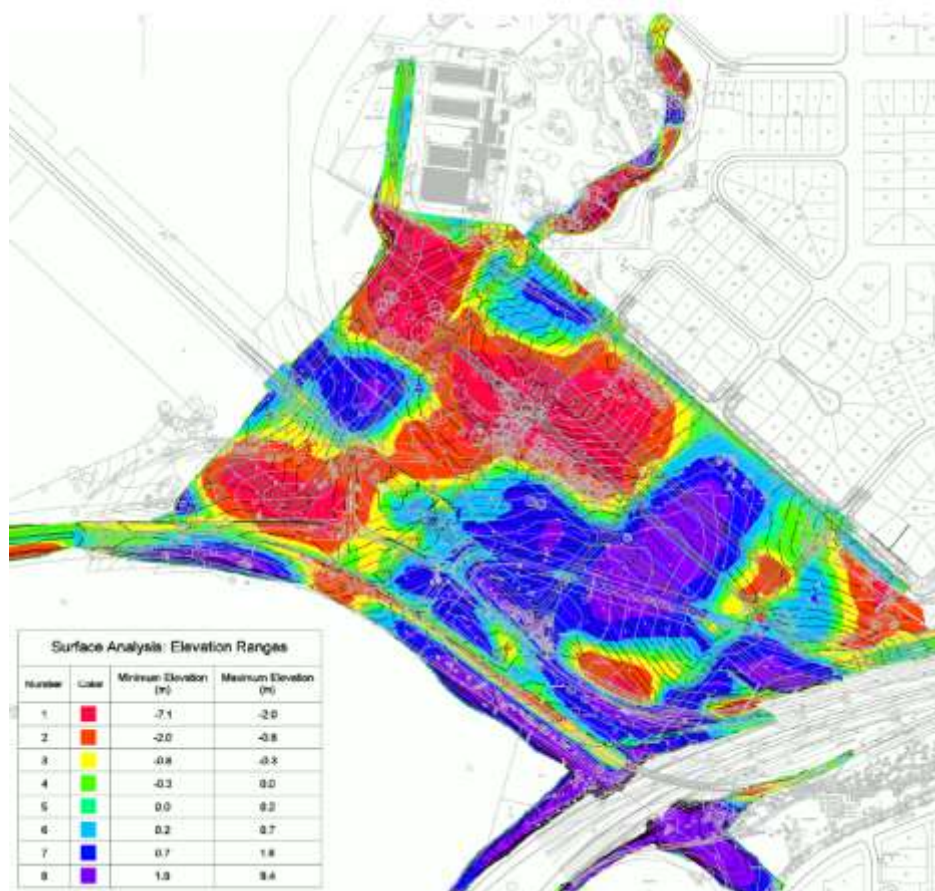
The revised development strategy has looked (SMEC 2015) at the extent to which the existing infrastructure and services (roads, electricity, water, stormwater, sewerage, gas and telecommunications) are adequate to accommodate the connection of 1885 new dwellings. It has also looked at the need to relocate services in and immediately adjacent to the site including for the construction of the Mint interchange and Adelaide Avenue bus stop. It has not assessed or costed in new infrastructure or upgrades required as a consequence of the development but occurring outside the site.

Earthworks

In the previous 2013 proposal SMEC's analysis commented that there is a conflict between the road layout and landform that will require extensive and expensive earthworks.

The SMEC report on the 2015 development shows (fig ES.7 (below) that extensive earthworks are required with 215000 cubic metres of cut. This eliminates all topographical relief of the site with some 205000 cubic metres cut being used to fill low-lying areas. The site currently ranges from 575m ASL high to over 590m ASL high. This fall of more than 15 meters will be reduced to about 4 metres across the whole site.

Fig.17 Development Cut and Fill (SMEC 2015) - red is cut of 7 metres, purple fill is 9.4 metres



This cut is exceedingly large and reduces the ground height across the site by a massive 7 metres. The main shale ridge line that extends from Denman Street in the north east, south

and west to Dunrossil drive and then west to the Cotter Road is totally removed. This natural ridge also extends from Denman Street north to the Brickworks and this too is removed.

Fig. 18 Cross Section of impact of development cut and fills on landforms

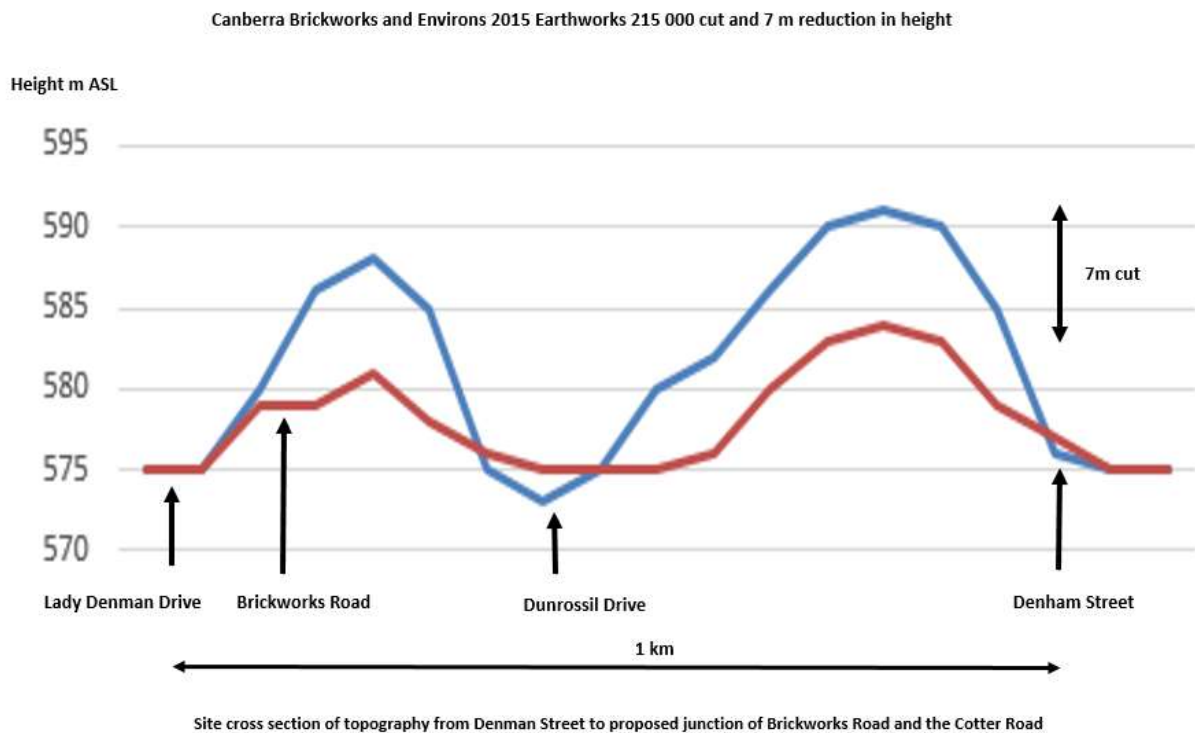


Fig. 19 Indication of impact on landscape of earthworks



The current natural shale ridge lines are at 590m ASL and have a dense cover of mature trees 10 to 14 metres high. This provides a visual green buffer ridge 14m higher and is a landscape scale asset at the entrance to Dunrossil Drive leading to the Governor General’s residence. This substantial ridge is reduced down to the level of Denman Street of 580m ASL.

The ground around the edge of the Brickworks quarry is an artificial mound partly composed of old bricks and this too is reduced by up to 7 metres.

The low lying areas and gullies are filled between 1.8 and 9.4 metres. This includes deep fill over the whole 1.5 hectare Natural Temperate Grassland and Golden Sun Moth habitat.

Thus the development site is subject to remodelling of levels and thus to undertake these earthworks the whole site will need to be totally cleared of vegetation – this will include the removal of all the existing 2000 mature trees. Whilst a number are senescent there are many that are in good condition including the oak grove and the Bosca (Fig.6).

This levelling of the development site enables the grid pattern layout to proceed and by reducing the ground level allows for the construction of 4 to 6 storey dwellings on the Yarralumla side of the development that do not need to comply with the National Capital Plan requirement that in Canberra Central no building or structure that protrudes substantially above the tree canopy shall exceed a height of RL617 metres.

Also the National Capital Plan principle is that *“Hills ridges and buffer zones are to remain substantially undeveloped to protect the symbolic role and landscape character of the hills and ridges as the scenic backdrop to the Parliamentary zone, civic and other National Capital precincts, to maintain the visual definition and physical containment of the surrounding towns and ensure their landscape, environmental and recreational values become an integral part of the National Capital.”*

All the earthworks are to be undertaken in Stage 1 (3 to 5 years) but the parkland, apart from Denman Park, is not restored until Stage 2 (6 to 8 years). Thus the development site will not have any substantive vegetation cover for a decade and it will be a further decade for saplings to become trees.

The earthworks of 215000 cubic metres if moved across the area by a standard 20 tonne truck will take around 10250 truckloads. There will be an ongoing impact on current Yarralumla residents in terms of constant dust, dirt, noise and truck movements within and outside the site. Trucks will regularly need to cross both the Cotter road and Adelaide Avenue. This impact will continue through both Stage 1 and Stage 2 as the latter includes the construction of the Adelaide Avenue bus stop - that is for a total period of 8 years.

Arterial Roads and Access Roads

The scale and duration of the earthworks and roadwork's are such that they will cause major disruption to traffic flows, access to Government House, the Canberra Brickworks and Deakin West and to local residents and other Canberrans who use that transport corridor.

Stage 1 (3 to 5 years) comprises all earthworks to level the whole site. Stage 1 also includes the construction of the Mint Interchange and the realignment of the Cotter Road and removal of the connection to Dudley Street, the development of housing along Denman Street and demolition works of buildings within the Canberra Brickworks. This means significant disruption over a period of more than three years to traffic flows along two major arterial Roads, namely Adelaide Avenue and the Cotter Road and access to West Deakin and Dunrossil Drive and will be a key access route for construction and trades vehicles.

Stage 1 of the road works includes the shortening of Dunrossil Drive by around 20% and removal of its direct connection to the Cotter Road. Brickworks Road is constructed as the

sole entry road to the development's Housing Estate from the Cotter Road. The Brickworks Road becomes the formal approach route for dignitaries travelling to Government House as it is connected via a right angle turn to Dunrossil Drive.

In Stage 1 a number of buildings in the Brickworks complex are demolished and others boarded up and fenced off to make them safe. Denman Street and Brickworks Road are developed and ten residential sites and their associated road infrastructure constructed. The vehicular access road to the Canberra Brickworks is, however, not constructed until Stage 3 at 9 to 10 years (SMEC 2015). This compromises the proposed activation of the Brickworks site itself and the ability of the existing timber business to continue on site during the development.

Disruption to the major arterial Adelaide Avenue will continue in Stage 2 of 6 to 8 years with the construction of the Adelaide Avenue bus stop and loss of two T2 traffic lanes.

Stage 3 will impact mainly on the Royal Canberra Golf course, Dunrossil Drive and Bentham Street in particular the Yarralumla shops in Bentham Street, and residents in that area with the construction of the Quarry Park, Quarry Road and parking.

In addition there is all the associated noise, dust, dirt and traffic associated with the construction of 10 residential sites in Stage 1, 16 in Stage 2 and 10 in Stage 3. That is a decade of housing construction will be experienced by the residents of current Yarralumla.

Gas, Water, Sewer, electricity and Communications

A number of additional requirements have been identified by SMEC (2015) as being needed for the development although many are in supporting infrastructure that is outside the actual development site. The costs of these requirements are largely not included in the financial analysis of the viability of the development as the LDA assesses its required 20% return on investment on the development itself.

The need to upgrade the water main from 150mm to 225mm diameter and an additional connection to Lane Poole Place has been identified.

The northern part of the development will drain into the existing Sewer through the Royal Canberra Golf course into the Molonglo Outfall Sewer (MOS). The ACTPLA (2005) report identified that this sewer is only 150mm pipe and would not be able to accommodate more than an additional 25 dwellings. Under the development around 800 dwellings would drain into this sewer. 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). This issue has not been covered by SMEC (2015) and thus any costs are not included in the costings.

The southern part of the development in West Deakin will drain into the Woden Valley Trunk Sewer and the costs of this connection have been included.

The SMEC report states that both MOS and WVTS are nearing capacity and that as much flow as possible should be directed to MOS. The costs of upgrading MOS and WVTS have not been assessed as part of the SMEC study nor has the connection to divert more into MOS been investigated and costed. Both sewer connections are required in Stage 1.

In regard to electricity it is not clear whether the requirements for substation space on each block or new underground 11 kV cable connections have been costed and included in the requirements.

The gas services scope now includes relocation of the 63mm PE 210kPa gas main from Dudley Street/Dunrossil Drive and upsize to 110 PE to allow for the 32N and 50N service lines. The costs of this upgrade do not appear to have been included in the development costings.

Identifying the investment in upgrades is necessary and should be included in the costs of the development and considered as part of its overall viability.

10. Community and Retail Facilities

Retail facilities proposed in the development strategy are 10 750m² of commercial space mainly to be located on the south side of Adelaide Avenue in West Deakin business area. The 2015 development now includes a mixed use block in the Stage 1 development near the Canberra Brickworks and is understood to be approximately 2000m² of the total commercial space and is likely to ease pressure on the Yarralumla Centre. The SGS consultant engaged by the LDA to undertake a community needs assessment (SGS 2015) suggested a minimart be provided for near the junction with the Cotter Road. Alternatively this could be a MacDonald's, or something similar, which would bring considerable extra traffic into the development and have an additional impact on the Approach Route to Government House.

The development provides no new community facilities (e.g. schools, community spaces) however; a development of this size requires community facilities within the development's residential area: without these, there will be significant traffic, parking and safety risks that will overwhelm the Yarralumla Centre. The SGS (2015) report recommended:

- Shops: In a different location than the development strategy: small-scale local shops of 650 m² at the north side of Cotter Rd, close to the main access in Stage 2
- Coffee shop/Minimart in the south east corner, near Adelaide Ave Bus Interchange, in Deakin or Yarralumla side in Stage 2
- Health facilities: Additional Medical/Health, Deakin: Late timeframe
- Childcare: Attractive for surrounding areas including Molonglo.
- Outdoor exercise equipment in public space.
- Scope for Coffee Shop, Bar, Entertainment, small scale conference centre in Brickworks
- Possible: Privately owned Gymnasium, Pool.

The consultant stated that: Aged Care Services; Community Halls; Youth Facilities; Schools; Places of Worship and Emergency Services are not justified by the projected demographics of the development. The needs assessment does not take account of the current Yarralumla profile and that the development is essentially a greenfields site. There is an opportunity for an age friendly built environment that would make the neighbourhood more liveable for all ages and future proof the design namely:

The housing mix should adhere to Liveable Housing Design Guidelines. It should be adaptable, low scale, have access to outside spaces, and connections to the street. A minimum proportion of dwellings should be suitable and affordable for older residents.

Access to community facilities and services should be possible within 3 minutes, including shops, social opportunities, physical exercise, views, and green places.

Active Transport: there should be accessible bus stops, wide footpaths for pedestrians with walking aids and sensory deficits, as well as adequate road crossings, resting places and meeting spaces.

There could be an opportunity for a Residential Aged Care Facility.

11 Loss of Open Spaces and Active Recreation (Green Circuit and Ridge Buffer Zone)

The development proposed has failed to respond to community concerns in relation to the loss of open space and active recreation amenity. The development will remove 44 ha of urban open space (PRZ2 and PRZ1) that is open woodland and grassland. This includes the area most highly valued by the community for active recreation: the 'green circuit' and the buffer zone separating town centres. This area is heavily used by the community from many suburbs for active recreation during the day and evening.

Fig.20 Active recreation green circuit track (white line) highly valued by the community



Fig.21 Development eliminates green circuit – (red line)

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 can be clearly seen from Google earth (see above). Being able to go around a green circuit is the most highly valued aspect of this open space identified in community consultations.

Fig22 Active Recreation trails on current green circuit (March 2015)

The development also eliminates the urban open space between Kintore Crescent, Novar Street and Dudley Street which provides residents with a visual and sound buffer from traffic on Adelaide Avenue.

The 2015 development offers a few small disconnected parks of about 4 ha in total designed solely for passive recreation. Overall this is a significant loss of open green space and active recreation amenity.

There is a linear formal park, (West Ridge Park) and a separate but totally disconnected Quarry Park. The public land between the Brickworks site and the Royal Canberra Golf Course is retained as public open space. Some footpaths through high density housing may provide access between these individual elements, but the continuum of open green spaces is lost in a high density street-scape.

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



Requirements for Protection of Endangered Species

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). Both the natural temperate grassland habitat and the Golden Sun Moth are protected under Commonwealth and ACT legislation as they are critically endangered.

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 (Rowell 2013). Surveys in 2013 (Umwelt 2014) confirmed 1.5ha of natural temperate grassland and 5 ha of golden sun moth. The grassland and sun moth population are considered to be viable in the medium term.

The development will eliminate an area of 1.5ha of Natural Temperate Grassland that is habitat for the critically endangered Golden Sun Moth (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).

The natural temperate grassland is classified as a Complementary Conservation Site (Category 2) with a moderate Botanical Significance Rating (ACT Government 2005) and with viable populations of threatened species

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.

Impact of development on Golden Sun Moth and Natural Temperate Grassland

The development requires the entire site to be levelled with removal of all vegetative cover of trees and grassland. In its place will be an essentially flat high density development. The earthworks of 215 000 cubic metres of cut to reduce the height by 7m and the 205 000 cubic metres of fill will eliminate the entire habitat of the critically endangered Golden Sun Moth and the 1.5 hectare of protected natural temperate grassland. These communities have been assessed as viable with long term survival expected Thus site levelling and the subsequent construction of houses on this entire habitat does not meet the policies and standards applying to the environment in the National Capital Plan which requires such communities to be protected.

Fig.23 Development and area of Natural Temperate Grassland (green) and Golden Sun Moth (Synemon plana) (yellow)



Fig. 24 Impact of the Development on Golden Sun Moth and Natural Temperate Grassland



Such loss of biodiversity is inconsistent with the National Capital Plan Policies and Standards' for Environment and the ACT Spatial Plan 2004 principles. The 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.

The development proposes that the elimination of the natural temperate grassland and the golden sun moth habitat be offset by "contributing to the improvement of [other] existing high quality natural temperate grassland and golden sun moth habitat". However this is in conflict with the Estate Development Code Criterion C1 and Rule R41.

Such loss of biodiversity is inconsistent with the National Capital Plan Policies and Standards for Environment and the ACT Spatial Plan 2004 principles. The 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.

The development proposes that the elimination of the natural temperate grassland and the golden sun moth habitat be offset by "contributing to the improvement of [other] existing high quality natural temperate grassland and golden sun moth habitat". However the report by Umwelt (2014) notes that "the current management regime would not appear to be consistent with biodiversity conservation objectives for the golden sun moth". Ecological guidelines for Fuel and Fire Management Operations state that for the golden sun moth "(PLAN25.1) Where possible, slashing in GSM habitat should be minimised between Nov and Jan to avoid the adult flying season" and "(OPS 25.2) Slashing in GSM habitat should not be undertaken below 10cm." Umwelt reported that slashing occurred mid-way through the 2013 survey in November. Given this, the use of offsets for increased protection of the golden sun moth would at best be highly doubtful.

13. Protection of Areas of Heritage Value

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 (Place ID 105381, Place File 8/01/000/0329, Legal Status listed Place 22/06/2004) includes the nearby Government House and surrounding area of Dunrossil Drive (53ha). 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.

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. 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. 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.

The operation of the Brickworks ceased in 1976 and public access and use of the buildings for markets was stopped in 1996 (ACTPLA 2005) 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 10 Heritage at Risk Nominations.

Fig.25 Canberra Brickworks heritage buildings

Extent of Make Safe and Adaptation of the Canberra Brickworks

A transparent fully costed and funded plan for the Canberra Brickworks is required. No structures at the Canberra Brickworks should be demolished until a decision is made on the future use of the Brickworks.

The 2015 development strategy has a Conservation and Development Strategy (Lovell Chen 2015) that “will guide the conservation and adaptation over three stages, corresponding with infrastructure delivery and land release”. This was informed by the Conservation Management Plan 2010 prepared for the LDA (Lovell Chen 2010). Lovell Chen 2015 state that through this process.

” It was also recognised that any adaptive reuse proposal for the site which involves the substantial retention and conservation, repair and refurbishment and adaptation of significant fabric so as to maintain the heritage values of the place will involve substantial cost, both up-front and ongoing.

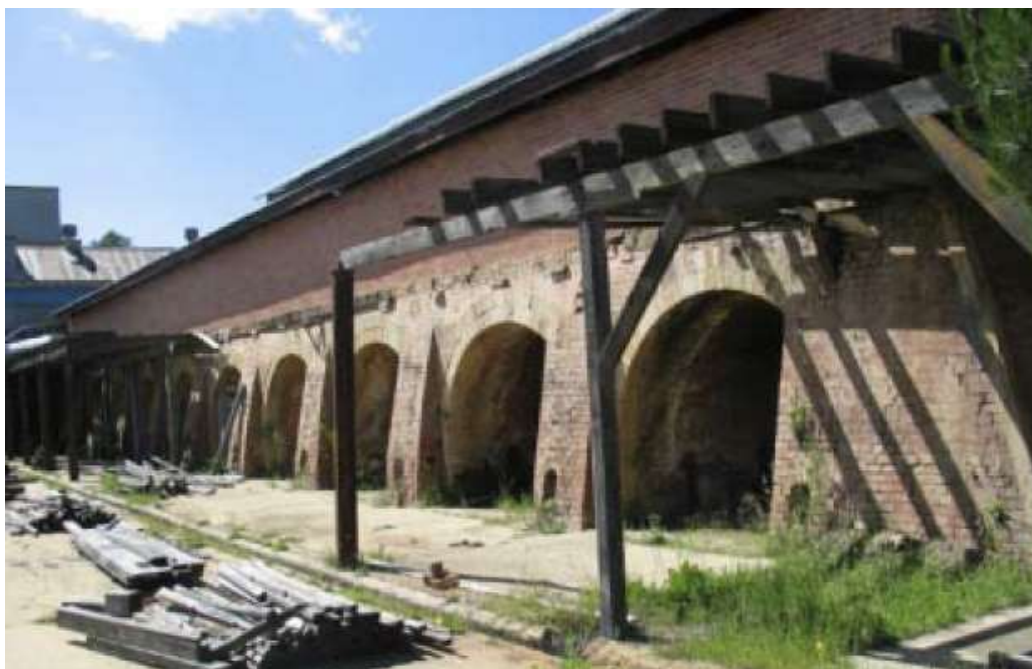
These costs ultimately will be required to be assessed against the positive heritage outcomes and the investment in the cultural capital embodied in the site, but also against an economic return that is generated by a new use or uses.

On this basis and having regard to the assessed significance of the place, the conservation policy for the site recognises that there are two broad approaches that reasonably could be contemplated: whole of site conservation; or partial site conservation. Clearly within these options there is scope for variations in the extent of adaptation of the retained buildings and the level of site development.....

The buildings on this site are generally in fair to poor condition and some are in a relatively advanced state of decay. Therefore there needs to be a tandem process of establishing a long term future use (which will evolve over time) with the need to make the site safe and halt the acceleration of decay.”

For example the 2010 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. 26 Condition of Canberra Brickworks buildings 2010



Thus the Lovell Chen 2015 Conservation Strategy is one possible future depending on available funding at the time. The ACT Government has currently not appropriated (set aside) any monies for this purpose. Moreover the LDA in its 2014 FAQ stated that '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'. This report has been classified as commercial in confidence by the LDA.

The LDA 2015 development strategy indicates that funding of \$1.5m is proposed for making safe of the Canberra Brickworks in Stage 1 in 3 to 5 years and for adaptation \$3.5m in Stage 2 in 6 to 8 years.

The \$1.5m for make safe is half the \$3m quantum proposed for the Brickworks "mothball" option in 2010 which also provided \$0.7m pa for ongoing maintenance. That is \$7m over the same period. The 2010 development proposal put \$12m as the cost of cold shell and \$0.4m pa ongoing maintenance, and \$48m for "warm shell" Adaptation with \$0.13m pa ongoing maintenance... The 2015 proposal has warm shell Adaptation provided at \$3.5m.

The quantum of funding seems grossly insufficient based on the LDA's previous estimates, and the Lovell Chen (2010) specification of the 97 essential works to prevent further deterioration of the heritage brickworks buildings. What appear to be proposed in essence are demolition of non-core buildings, boarding up and fencing off in Stage 1.

Thus the \$1.5m in Stage 1 (Lovell Chen 2015) would be directed to gutters, drainage and making buildings water tight. This entails 10 of the 34 buildings being boarded up; 9 would have access restricted by being fenced off and 10 would be demolished. This leaves concrete retaining wall (02), Chimney stack kiln 2 (10), Chimney Stack kiln 3 (13) and apparently Building 22 the Downdraft kilns as possibly accessible. The Quarry (01) would be fenced off. The numbers in parenthesis are the building numbers referenced in Lovell Chen.

Stage 2 (Lovell Chen 2015) would be undertaking “warm shell works (insulation, flooring and services including power, data, lighting, heating and water) for the Staffordshire Kiln 1 (04), Fan House Kiln 1 (05), Hardy Patent Kiln 2(08), Fan House Kiln 2 (09), Amenities Block (11), Chimney Stack (06), Chimney Stack 2 (10) and the Courtyard.

Stage 1 of the development is the earthworks and levelling of the whole development site, construction of roads, ten blocks of dwellings and demolition of 10 Brickworks buildings. Thus public access to the brickworks in Stage 1 and continued use by the existing tenant for business seems unlikely. Similarly access and use of the Brickworks buildings in Stage 2 cannot occur as the vehicular access road to the Canberra Brickworks is in Stage 3 at 9 to 10 years. However the 2015 development strategy has activation of the site in Stage 2 which is not possible.

The proposals being put forward by the existing tenants for adaptive re-use of the Brickworks could be precluded by the proposed development.

Stage 3 is for the construction of the Quarry Park and the Brickworks access road. There is a notional quantum of funding of \$10m for the Quarry Park. There is no clear idea of what \$10m would be spent on only that a design competition would be run. Moreover \$10m is a significant amount of money for a park compared to the suggested investment in make safe and some re-use of the Brickworks heritage buildings. No potential source of this funding has been identified.

Lovell Chen (2015) suggest that further Adaptation of the Canberra Brickworks buildings may occur in Stage 3 at 9 to 10 years **OR** demolition will occur of the Kilns and Fan Houses other than the Staffordshire and Hardy Patent Kiln. However, no information as to the quantum and source of funding is provided and the feasibility of Adaptation.

Contamination of the Brickworks Site

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.

The issue of remediation of the brickworks site for hazardous materials is not dealt with in this development strategy and no funding proposed for site remediation. The ACT Government committed funding of \$2.9 million in 2014 towards remediation of contaminated soil within the site to make the area safe for future users. There has been \$255 000 expenditure to date on new perimeter fencing. This quantum is unlikely to be sufficient to remove contaminated soil from 0.45ha of the site for the purposes of constructing the proposed two high rise buildings on top of the Asbestos Dump. The remediation represents only 10% of the Brickworks site. The funding is not sufficient to decontaminate the remainder of the site.

Brickworks Parking

If the brickworks were being considered for significant adaptation the provision of onsite parking for up to 400 cars would be needed as per the 1986 AR Marr proposal. Only visitor parking within residential blocks is proposed together with a possible 50 to 96 places on Bentham Street which is already 209 places short of requirements for local centres.

The scale of the proposed development has doubled from 900 dwellings in 2010 to 1885 dwellings in 2015 with both proposals including the Mint Interchange. But the proposed investment in the Brickworks heritage buildings in 2015 is \$2m less than the original mothball proposal. Public access will be to the Quarry Park in a decade's time. No explanation is given as to why a doubling of dwellings and land sales revenue is necessary.

Thus the issue of what, if any restoration and adaptation of the Canberra Brickworks heritage buildings will occur, and how it will be funded remains totally unresolved and uncertain. This is not acceptable to the community which has repeatedly restated that preservation and adaptive re-use of the Canberra Brickworks needs to be a fundamental component of any housing development in the area.

Site stabilisation

Considerable data indicates that the Brickworks site is unsuitable for housing because of unstable areas due to large areas of brick fill former quarry blast site, and the old asbestos dump. This issue was raised in our 2014 submission which stated that as a consequence development will be difficult and costly, particularly for medium density housing proposed on the quarry rim adjacent to Schomburgk Street.

The issue of site instability appears to have been addressed in the 2015 development strategy through the significant earthworks entailed in virtually levelling the entire site. Significant cut of over 7 meters will occur within the quarry area including the ridge. However this quantum of earthworks will be at a significant cost and may well underlie the doubling of the number of dwellings proposed in 2015 compared to 2010.

14. Relationship to the Spatial Plan 2004 and other key ACT Government Strategies

This development of the Canberra Brickworks and Environs fails on most of the seven Canberra Spatial Plan 2004 principles namely 1, 3, 4, 5, 6, and 7.

The Spatial Plan provides strategic planning direction for the ACT and is one of 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
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.

This development of the Canberra Brickworks and Environs fails on at least four of these principles namely

Principle 3 not met: - the development is not close to town centres to facilitate easy access to their amenities.

Principles 4 and 5 not met – while the reinstatement in the 2015 development strategy of the Mint Interchange will improve travel times and reduce congestion, the planned long delay before introduction of mass public transit means it is still likely that residents of the new development will need cars to commute to work and to do major shopping.

Principle 6 not met: - the critically endangered Golden Sun Moth and its Natural Temperate Grassland habitat will be destroyed.

Principle 7 not met: - the Canberra Brick works heritage buildings will only be ‘made safe’, not protected from further deterioration and not enhanced. The landscape scale assets of the forested ridgelines will be eliminated. The Commonwealth Heritage listed Dunrossil Drive will be foreshortened and around 30 of the high value Avenue Elms removed.

It is difficult to reconcile this development strategy for the Canberra Brickworks and Environs with the ACT Planning Strategy 2012 (ACT Government 2012). The ACT Planning Strategy does not mention this development as a short term action. It indicates that the program of master plans for centres and transit ways will be extended ‘after the completion of the current program and following the Strategy’s five year review (page 43).

The 2015 development strategy does not meet several of the strategies in the ACT Planning Strategy 2012, including those relating to integrated land use and transport design, urban

design that adds to Canberra's landscape setting, and the need to create wildlife and vegetation links to improve ecosystem services.

The development is not consistent with key sustainable development principles in the ACT Territory Plan, as indicated in the table below.

The development is also not consistent with the ACT Government's population projections to 2021 which project Yarralumla's population to be 3100 in 2021 not 6042 with the development (Chief Minister's Department 2014).

Any development of the Canberra Brickworks and Environs needs to be buffered from areas of adjoining vegetation by Asset Protection Zones (APZs).

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.

These requirements are not met with the current development and to do so would reduce the developable area on the site and hence its feasibility. This needs to be taken into account in the assessment of the site.

Alignment of Development with Key Sustainable Development Principles in the ACT Territory Plan¹

Issue	Comment
<p>Environmental Sustainability The pattern of development is to reflect land capability constraints resulting from topography, soils, geotechnical factors, drainage, natural hazards, microclimate and the sensitivity of ecosystems. Particular attention will be given to the need to conserve soil, water and vegetation; maintain biological diversity; safeguard important ecosystems and ecological processes; and provide and protect wildlife corridors (1.6).</p>	<p>On several grounds the revised proposal does not align with this principle: -massive "cut and fill" changes topography -most vegetation removed -important ecosystems and wildlife corridors destroyed</p>
<p>Integrated catchment management and water sensitive urban design. Policies will seek to protect identified environmental values, whilst focusing on opportunities for multi-purpose use of resources. Special attention is to be given to protecting sources of the Territory's water supply and to maintaining environmental flows in rivers and streams (1.7)</p>	<p>Identified environmental values will be destroyed, in particular critically endangered golden sun moth and native temperate grasslands habitat.</p>

¹ See Sustainable Development Principles in the Strategic Direction section of the ACT Territory Plan at <http://www.legislation.act.gov.au/ni/2008-27/current/default.asp#Strategic+Direction>
1 April 2015

<p>Integrated land use and transport planning will seek to maximise accessibility and transport efficiency, reduce energy consumption, support the preferred pattern of development, promote safety, safeguard environmental quality, and minimise greenhouse gas emissions (1.10)</p>	<p>The reinstatement of the Mint Interchange will improve accessibility and arterial transport efficiency. But significant impacts on existing roads in Yarralumla that are underspecified for the proposed traffic flows have not been assessed.</p>
<p>Social Sustainability Provision will be made for comprehensive range of readily accessible community, cultural, sporting and recreational facilities, distributed according to the varying needs of different localities and population groups. In major centres and developing areas, sites will be safeguarded where necessary for particular community needs (1.18).</p>	<p>SGS report calls for small-scale shops, minimart and café. Not clear that enough services to be provided. Still major issues of car, pedestrian, cycling access to local shops in Yarralumla, Deakin and Curtin.</p>
<p>A variety of open space types will be provided in each district or local area to meet the diverse recreational needs of residents and visitors, and to contribute to community health (1.19).</p>	<p>The development will destroy valued open bushland that has continuous walking trails and open connected green spaces highly used by residents and the broader community.</p>
<p>Provision of affordable, adaptable and special-needs housing will be promoted throughout the city, as well as modification or redevelopment of existing stock to meet emerging social needs (1.21).</p>	<p>No indication that the proposal will provide such housing eg for an ageing population.</p>
<p>The needs of people with disabilities will be recognised in all facets of urban planning, particularly including the design and operation of transport and access systems and the assessment of development proposals (1.23).</p>	<p>How easy would it be for the disabled to get to transport and access systems?</p>
<p>New suburban areas will be planned with a legible and permeable hierarchy of roads; conveniently located commercial and community facilities; a network of open spaces; an off-road system for pedestrians and cyclists; and provision for accessible public transport (1.24)</p>	<p>Still an issue with ease of access to local commercial and community facilities, connectivity of open spaces.</p>
<p>Heritage and cultural values will be safeguarded, including in particular those of the Territory's Aboriginal peoples and those derived from both its rural history and urban development as the National Capital. The distinctive qualities of residential areas and other places, as well as elements of community heritage, will also be recognised and their conservation promoted (1.25).</p>	<p>Distinctive qualities of Yarralumla include informal open and connected green spaces. The revised proposal does not promote this. Need a comprehensive investigation of the indigenous cultural heritage of the site.</p>
<p>Identified places of heritage significance will be protected in accordance with requirements for their conservation contained in the Heritage Register and any relevant heritage guidelines under the Heritage Act 2004 (1.26).</p>	<p>The revised proposal is putting more funding than before into conserving the Brickworks – but it is probably not enough to even pay for necessary stabilization and maintenance?</p>

15. Conclusion:

The development strategy documents (LDA 2015) provide limited detail and aspects of the report and appendices are often in conflict in regard to proposed approach, actions or timing. The development addresses to a limited degree some of the concerns raised by the community in our 2014 submission and petition, in particular relating to the reinstatement of the Mint Interchange and some reduction in building heights. Very significant and substantive issues remain.

The majority of the issues that were raised in the 2010 and 2013 development strategy consultations remain.

The scale of the development continues to be centred on maximising the revenue from land sales to provide a 20% dividend on investment by the LDA. This is a high cost site for housing development. The scale of the development has increased at every update of the strategy as the costs of site development have increased. Thus in 2010 the development proposal was for 900 to 1100 dwellings in 42 ha; in 2013 it was for 1600 dwellings in 42ha; and in 2015 it was 1885 dwellings in 49 ha that included the area for the construction of the Mint Interchange.

The scale of the 2015 development seems 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. The extent of earthworks to eliminate the existing landforms and level the site is also unprecedented. The funding for preservation and adaptation of the Canberra Brickworks is minimal given the scale of the development.

The development strategy is centred on maximising the land sales returns and has focused on addressing matters within the boundaries of the development site to make the configuration workable. The development has core elements that do not meet technical requirements for infrastructure design and Australian Standards. The resultant impacts have neither been considered nor costed and are of a scale that will make the core of existing suburb of Yarralumla inaccessible and unsafe.

There are significant issues associated with the elimination of the existing ridgeline topography, woodland and other vegetation and open space, and the impact of the development on all surrounding areas including the Governor General's residence.

The impact of the development on traffic flows, access and safety in the streets adjacent to the development and the main thoroughfares of Yarralumla have not been assessed. Decisions on the development should not be made on the basis of an unrepresentative traffic flow assessment that has not been validated by actual counts of existing traffic adjacent to the development area. A full traffic survey of the existing suburb of Yarralumla, Deakin and adjacent areas, must be undertaken and modelling updated and peer reviewed to ensure development does not render the current suburbs inaccessible and unsafe.

Fundamental planning principles have not been applied. The development is inconsistent with the National Capital Plan 2014, the Canberra Spatial Plan 2004 and the ACT Planning Strategy 2012 and the sustainable development principles of the ACT Territory Plan and the Estate Development Code 2013.

Urban infill of the scale proposed for Yarralumla cannot be justified on current need and future projections. 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. The LDA have scaled back Belconnen, Molonglo and Gungahlin releases. Stage 2 of Molonglo alone is designed to accommodate 1800 future residents.

The second half of the Kingston Foreshore development of 37ha and over 1700 dwellings has just commenced in 2015 with the release of a new Master Plan for Section 49. This development was approved in 1997 and construction commenced in 2001 and was due to be completed in 2010. It is still only half complete and including use of the arts hub and the heritage buildings. The land release program was for about 170 dwellings per annum.

The scale of the development continues to be driven by the need for revenue from land sales to provide a 20% return on investment by the LDA. This is a high cost site and marginal at best for housing development and to be affordable the scale of the development has increased at every update and this has been with disregard of all other considerations.

On the basis of the analysis in this submission, the Yarralumla Residents Association calls for the current development (LDA 2015) for the Canberra Brickworks and Environs to be replaced with one that:

- I. Reduces the scale of the development to one in keeping with the character of Yarralumla and the site topography; has a mix of dwellings and heights but no more than 3 to 4 storeys.**
- II. Is based on traffic flow assessments of the existing suburb of Yarralumla and adjacent areas from a comprehensive traffic survey to be undertaken in 2015 and applied in traffic modelling that has been peer reviewed.**
- III. Is not inconsistent with the National Capital Plan.**
- IV. Retains the current landforms, woodlands and forests as significant landscape scale assets - in particular the ridges running from Denman Street to Dunrossil Drive in parallel to the Cotter Road, and protects associated heritage including the 1918 plantings of *Ulmus* spp which are on the Commonwealth Heritage list**
- V. Provides for appropriate separation /buffering of the development from the current suburb with urban open space bush parkland, not a formal park, along Denman Street.**
- VI. Retains a "Green Circuit"/continuous walking and cycling trails as part of the provision of urban open space bush parkland, and the natural temperate grassland and golden sun moth habitat in that corridor.**
- VII. Does not provide main access to the existing suburb of Yarralumla through streets that are inappropriate and unsafe due to their width and configuration and will be hazardous to drivers and pedestrians, including children and those visiting the Yarralumla shops in Bentham Street.**
- VIII. Precludes the vehicles from the development from rat running through the existing suburb of Yarralumla.**
- IX. Addresses parking and traffic impacts within Yarralumla, as well as those that are relevant within the development site.**

- X. Has a transparent, costed plan for the preservation and adaptive reuse of the Canberra Brickworks that is not at all compromised by the development.**
- XI. Considers the establishment of a formal Trust responsible for the future use of the Canberra Brickworks that has funding from Government and is empowered to raise funds from the private sector and public.**
- XII. Minimises the duration and overall impacts on the community and environment that would be presented by the development of the new estate, the disruption to transport and commuting during construction of roads and the construction of a new interchange.**

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17. Attachments

Yarralumla Residents Association Petition. <http://www.yarralumlaresidents.org.au/>

Petition to the Speaker and Members of the Legislative Assembly for the Australian Capital Territory

by the Yarralumla Residents Association

WE, THE UNDERSIGNED, CALL FOR THE CURRENT PLANS FOR THE DEVELOPMENT OF THE CANBERRA BRICKWORKS AND ENVIRONS TO BE WITHDRAWN AND REWORKED. RECOGNISING THE PROBLEMS INHERENT IN DOUBLING THE SIZE OF THE POPULATION, THE REWORKED PLANS SHOULD:

- Develop a plan **in harmony with the existing dwellings and layout** of the suburb that reduces building heights; is less dense; provides more green space; conserves more existing trees (including the oak plantation); retains existing walking trails
- Address the **significantly increased traffic flow** within Yarralumla and its neighbouring suburbs of Deakin and Curtin; build a traffic overpass near the Mint; provide adequate parking for residents and visitors within the development and increase parking at local shopping and medical and other facilities in Yarralumla and Deakin
- Provide detailed and fully costed plans relating to the **immediate preservation of the Brickworks** and for the next stage of the restoration and adaptive reuse of the site
- Provide extensive public reports and costings on plans for the **safe removal of asbestos and other contaminated material** from the site and implications for the health and safety of residents
- Explain and illustrate how existing **infrastructure for electricity, water, sewerage and storm water** will cope with a doubling of demand and provide detailed information on **improved public transport options, community facilities and planned new amenities**

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