Visitable and Adaptable Features in Housing

Regulatory Impact Statement

This Regulatory Impact Statement has been prepared in accordance with the requirements of the Subordinate Legislation Act 1994 and the Victorian Guide to Regulation incorporating Guidelines for the Measurement of Changes in Administrative Burden.

Department of Planning and Community Development

In accordance with the *Victorian Guide to Regulation*, the Victorian Government seeks to ensure that regulations are well targeted, effective and appropriate, and that they impose the lowest possible burden on Victorian businesses and the community. The *Subordinate Legislation Act 1994* requires that new or remade regulatory proposals must be formally assessed in a RIS to ensure public participation in the preparation and scrutiny of subordinate legislation, that the associated costs are outweighed by the benefits, and that the regulatory proposal is superior to alternative approaches. There are limited exemptions to this requirement. One exemption is that the statutory rule would not impose an appreciable economic or social burden on a sector of the public.

The Regulatory Impact Statement (RIS) process involves an assessment of regulatory proposals and allows members of the community to comment on such proposals before they are finalised. Such public input provides valuable information and perspectives, and improves the overall quality of regulations.

This RIS has been prepared to facilitate public consultation on the proposed variation to the Building Code of Australia which is attached to this RIS. Whilst a RIS for a variation to the Building Code of Australia is not required under the *Subordinate Legislation Act 1994* the Victorian Government has accepted the Victorian Competition and Efficiency Commission's recommendation that Victorian variations to the Building Code of Australia should be subject to the regulatory impact assessment process applicable to regulations under the *Subordinate Legislation Act 1994*. Consequently, this RIS formally assesses the proposed variation against the requirements in the *Subordinate Legislation Act 1994* and the *Victorian Guide to Regulation*.

The RIS examines the problem to be addressed, specifies the desired objectives, identifies viable options that will achieve the objectives, and assesses the costs and benefits of the options, as well as identifying the preferred option and describing its effects. The RIS also assesses the impact of regulatory proposals on small business, undertakes a competition assessment and reports on any changes in the administrative burden. Finally, it considers implementation and enforcement issues, details the evaluation strategy, and documents the consultation undertaken.

Public comments and submissions are now invited on the proposed variation. All submissions will be treated as public documents and will be made available to other parties upon request. Written comments and submissions should be forwarded by no later than 5:00pm, 5 March 2010 to:

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GLOSSARY

AIA – Australian Institute of Architects

ABCB – Australian Building Codes Board

ACCC – Australian Competition and Consumer Commission

AHURI – Australian Housing and Urban Research

AIHW – Australian Institute of Health and Welfare

BC – Building Commission

BCA – Building Code of Australia

BPB – Building Practitioners Board

BRAC – Building Regulations Advisory Committee

DDA – *Disability Discrimination Act 1992*

DPCD – Department of Planning and Community Development

DSHA – Disability Support and Housing Alliance

EOCV – Equal Opportunity Commission Victoria

HACC – Home and Community Care

HIA – Housing Industry Association

MAV – Municipal Association of Victoria

MBAV – Master Builders Association of Victoria

MCA – Multi-Criteria Analysis

NPV – Net Present Value

OECD – Organisation for Economic Cooperation and Development

OOH – Office of Housing, Victoria

RAIA – Royal Australian Institute of Architects

RIS – Regulatory Impact Statement

VCAT – Victorian Civil and Administrative Appeals Tribunal

VCEC – Victorian Competition and Efficiency Commission

VCOSS – Victorian Council of Social Service

SUMMARY OF KEY FINDINGS

Key points

The Victorian Government has made a policy commitment to ensuring that people with a disability or limited mobility will not be excluded from participating in social life and work.

Four accessibility features have been identified which, if included in new homes, would have a major accessibility impact for people with a disability and for the wider community. The features are: a clear path from the street (or car set-down/park) to a level entry; wider doorways and passages; a toilet suitable for people with limited mobility on the entry level; and reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later.

The Victorian Government's policy objective is to achieve a high degree of adoption of these four features in new housing. The direct quantified costs of the four features are less than a third of one per cent of the cost of a new home. (This does not include other costs, such as the cost of space used to accommodate the four features, that may or may not result in additional financial costs.) The cost of including the features at the design stage is less than one twentieth of the cost of retrofitting the features in an existing home. Measures to achieve wide adoption of the features would not apply to existing homes, renovations or most units in high-rise buildings.

The expected benefits of adopting the four features affect the whole community. The principal benefits include greater participation and dignity for people with a disability or mobility limitation; improved safety; and improved liveability and amenity for most people in the community, including the aged, people with children, and people with temporary mobility impairments.

The benefits of the features are expected to outweigh the costs. The annual cost of the features is expected to be $30.8 million, plus one-off adjustment and implementation costs of $0.85 million in the first year, and ongoing enforcement costs of $0.34 million per year. The estimated costs do not include other costs, such as the opportunity cost of alternative use of space to accommodate the four features, which may not result in additional financial costs.

The annual value of the quantified benefits of the features is estimated to be $5.4 million. This estimate excludes the unquantified benefits of reductions in hospital stays, greater safety and amenity, better quality homes and ageing in place. This estimate also excludes unquantifiable participation benefits. Taking into consideration the unquantified benefits, and in particular the unquantifiable

participation and equity benefits, DPCD believes that the benefits of the preferred option would outweigh the costs.

Over ten years, the estimated NPV (3.5 per cent discount rate) of the quantified benefits is $44.9 million, and the estimated NPV of the costs (including one-off implementation costs and ongoing enforcement costs) is $259.8 million. These costs and benefits are based on a ten year period consistent with the *Victorian Guide to Regulation* as most statutory rules have a life of 10 years. The dwellings built over the ten-year regulatory period would continue to generate benefits beyond the regulatory period. Victorian Government policy is that the timeframe for considering costs and benefits should be guided by the period over which policy costs and benefits are expected to occur. For this proposal, the timeframe for the realisation of the benefits are expected to be for the life of the asset. Further, the benefits are expected to apply for the number of occupant households over the life of the asset.

Options for achieving wide adoption of the four features in new housing were analysed. This RIS concludes that requiring adoption of the features in certain categories of new homes via a Victoria-specific variation to the Building Code of Australia would entail the greatest net benefits for the community and would provide consistent standards across municipalities which would provide consistent costs for industry. The Victoria-specific variation to the Building Code of Australia would require that Class 1 and Class 2 buildings include the minimum set of accessibility features from May 2011. The principal effects on society are in the form of enhanced safety and amenity, greater social inclusion and social capital, and higher quality housing. The preferred option would affect the community as a whole, and specific groups including home occupiers, people with a disability, and building industry participants.

'We want to ensure Victorians living with a disability can participate fully in community life and that services for people with a disability provide them with maximum choice and opportunity in the way they live their lives. A Fairer Victoria focuses on ensuring Victoria is a more supportive and accessible place for people with a disability and their families and carers. Our programs and actions are designed to assist people with a disability [to] remain living independently in their own homes, have greater control over their own lives, and participate fully in the economic and social life of Victoria, including preparing for and entering the workforce'.[1]

[1] Victorian Government, *A Fairer Victoria: Building on our Commitment*, May 2007, page 46.

The issue to be addressed

The Victorian Government has made a policy commitment to ensuring that people with a disability or limited mobility will not be excluded from participating in social life and work. This commitment is based on principles of equity and fairness, but also recognises that the whole community benefits socially and economically when all its members are able to participate and contribute.

The Victorian Government's policy commitment has implications for the design and construction of new homes. When a house is designed and built, decisions are made about housing features that affect future occupants and visitors. The terms 'accessible housing', 'visitable housing' and 'adaptable housing' refer to residential building features that permit access to and use of those buildings, and future adaptation of those buildings:

- **Accessible housing** – allows access and use by most occupants and visitors, including people with a disability or some other form of mobility impairment;
- **Visitable** housing – allows most people to visit a home with dignity, including overnight, and for a person with a disability to reside temporarily; and
- **Adaptable housing** – has provisions that enable a home to be altered without major structural works and at a much lower cost to make it accessible and useable in the future. [2]

Housing design features such as level paths and entrances, wide doorways and passageways, and a clear circulation area in the toilet compartment, affect the accessibility, quality, safety and liveability of homes. The cost of including these features at the design stage can be low to negligible.

In Victoria today, DPCD estimates that approximately 96 per cent of new homes lack basic accessibility features.[3] The lack of accessibility features in new homes imposes a number of costs. While the inclusion of visitability and adaptability features is experienced most significantly among people with a disability or some other form of mobility limitation, and among their families and friends, the whole community would benefit from the improvements in quality, safety and liveability that arise when these features are included in new homes. The community-wide

[2] Adapted from the VCEC's 2005 inquiry, *Housing Regulation in Victoria: Building Better Outcomes*

[3] DPCD estimates that there are a total of 70,000 homes in Victoria with some form of disability modification, based on Office of Housing (Vic) data. The figure is an estimate based on the number of properties owned by DHS/OoH and the number of private households which have had some form of disability modification. The figure is conservative, because about 14,000 of the DHS/OoH stock has had some type of minor modification (such as a ramp), whereas 8,000 properties in the the DHS/OoH stock have had major or full disability modifications (that would include accessible entries, wider doorways and passages and modified bathrooms) and the proportion of private households with some type of disability modification is proportionally small. Data on the number of disability modifications to private homes are not available; however the number of DHS Aids and Equipment Program minor modifications funded in 2007-08 totalled 2046.

benefits from the features arise when household members or visitors have a disability or mobility limitation (temporary or ongoing), are frail aged, use a pram, or are performing any one of a range of everyday activities. Benefits of greater accessibility include the following:

- houses with accessibility features can be accessed with dignity by people with a disability or mobility limitation. More accessible housing therefore allows greater participation in social life and work;
- features such as a level entry and wider doorways are safer, and assist people with, disabilities, temporary injuries, and limited mobility, including the growing older population. Victoria's population is ageing. At present, 19.1 percent of Victoria's population is aged over 60. This figure is expected to rise to 22.8 per cent by 2020, and to over 25 per cent by 2030.[4] As the population ages, people will live with a disability or mobility limitation for a longer period of time. Aged care, healthcare costs and relocation costs would be lower if people were more able to be cared for in their homes, or the homes of family and friends. Being able to visit friends and family and remain connected to their communities is particularly important for this older age group;
- people with temporary restrictive injuries and other types of temporary impairment can return to a home that has the accessibility features, rather than remain in hospital for longer, or be discharged into a rehabilitation centre;
- families with children who use prams and strollers benefit from level entrances, wider passageways and wider doorways. Young children will also benefit from step-free paths and level entrances and hallways; children under four years of age have the highest proportion of home based slip, trip and fall injuries resulting in hospital admissions of any age group under 65 years of age; [5]
- homes with accessibility features are easier to escape in emergencies, and the ability of emergency personnel to achieve timely access to properties is also increased; and
- other benefits for the general population include better quality housing and higher general amenity in everyday activities such as carrying shopping or moving furniture into the home.

In Victoria, buildings other than homes (ie. BCA Class 3 and Classes 5–9 buildings) have since 1981 had regulatory requirements to be accessible in the parts of the building that the public can access. These requirements have been applied nationally under the Building Code of Australia since 1991. Prior to that, they were

[4] Source: DPCD.
[5] Monash University Accident Research Centre, The relationship between slips, trips and falls and the design and construction of buildings, (funded by the ABCB), 2008, p. 107.

required under the Victorian Building Regulations and the Victorian Public Building Regulations.

The Victorian Government has implemented accessibility and adaptability features directly in its own housing-related activities. For example, since 2001, the Department of Human Services has built all public housing to an accessible and adaptable standard. Also, VicUrban's current Accessible Adaptable Housing demonstration project aims to increase market delivery of accessible and adaptable housing. One of the criteria the Commonwealth Government has applied when assessing social housing proposals for the Nation Building – Economic Stimulus Plan is the adherence to universal housing standards, which include the four accessibility features.

The Victorian Government has committed to improving the accessibility of new housing in the State, and to enabling people to live independently in the community so long as they are able to. This commitment has been welcomed by a major construction firm in Victoria[6] as well as other advocates and peak bodies.

The objective of intervention

DPCD believes that intervention in the housing market is warranted to achieve the Victorian Government's policy objective of a high degree of accessibility in new housing. The grounds for the intervention are based primarily on equity and social policy goals. DPCD believes the key players in the residential construction industry are ready for appropriate minimum government intervention in tandem with the finalisation of the national draft *Disability (Access to Premises – Buildings) Standards 2009.* For construction industry participants, a key benefit of appropriate intervention would be the establishment of clear and consistent standards.[7] In recent times, building design peak bodies have indicated the need for clear and consistent standards on accessibility provisions in housing.[8] The certainty and consistency provided by mandatory standards may reduce the costs of incorporating the features, relative to the situation where they are incorporated at the discretion of builders. While consistent standards may reduce administrative costs (at the design stage because there are clear and consistent standards to be complied with), mandating additional features does not, however, reduce overall construction costs, as it would not reduce the cost of building the features into new housing.

As part of the RIS process, a set of accessibility features was identified as the basis for a Victorian accessibility standard that would achieve improvements in

[6] Correspondence received, 1 June 2009
[7] ibid.
[8] Initial consultation with industry representatives, 2009.

accessibility but at a relatively low incremental cost if they were built-in at the point of initial construction, having been designed-in from the start. (In contrast, the cost of retrofitting the features is high.)

A broad section of the community would directly benefit from the accessibility features. Specific beneficiaries include:

- the elderly;
- people with limited mobility, including people with an ambulant disability, or people recovering from a long or short term injury or illness;
- families, friends and carers of people with a mobility limitation; and
- families with young children.

The costs would mostly fall on homeowners, residential tenants and building industry participants including builders and developers.

The features are:

- a clear path from the street (or car set-down/park) to a level entry;
- wider doorways and passages;
- a toilet suitable for people with limited mobility on the entry level; and
- reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later.

In many new home designs, application of a standard comprising these features would not require significant changes. For example, most new homes have a toilet on the entry level (although there is presently no requirement for space to manoeuvre or for reinforcement in the walls) and most consumers build an entry path to their new home (although there are presently no requirements regarding the slope, width, surface or steps).

The Victorian Government's policy objective is to achieve adoption of these minimum features in:

- all BCA Class 1 dwellings; and
- as indicated in the 2007 social policy statement *A Fairer Victoria: Building on our Commitment*:
    - all ground-floor dwellings of Class 2 medium density buildings with no lift; and
    - one in five dwellings in Class 2 high-rise buildings with lifts. (Less than full adoption of the features is appropriate in Class 2 buildings, as these

buildings typically have significant common areas and special design constraints arising from higher construction costs, compared with detached dwellings.)

The construction of new homes is geographically diverse. The highest numbers of dwelling approvals for new houses are located in Melbourne's outer growth areas.[9] The highest numbers of dwelling approvals for new smaller houses or apartments are located in Melbourne's central city, established suburbs, the south east outer growth area and the Mornington Peninsula.[10] This pattern of construction is expected to continue in established areas as the numbers of BCA Class 1a infill dwellings and BCA Class 2 dwellings are expected to increase in the future. Presently established area redevelopment comprises 66 per cent of BCA Class 1a dwellings and 34 per cent of BCA Class 2 apartments.[11] The location of significant numbers of people who are aged 65-plus, and people who are aged 65-plus who need assistance with core activities, is diverse[12] and will change over time with increasingly more significant numbers in Melbourne's present growth areas. While the growth areas presently have significant numbers of people who are younger, DPCD believes that a broad range of people would move into new housing in the growth areas and within the 30 to 50 year life of the new housing stock, many people will remain in that area and will be aged 70-plus. However, the four features are no only for older people.

Over the next 20 years, it is anticipated that over 50 per cent of Melbourne's new dwellings will be built in established areas, with less than 50 per cent anticipated to be in Melbourne's growth areas.[13]

The expected building cost of the features (extra over) in a Class 1 dwelling is $870. (This does not include other costs, such as the opportunity cost of alternative use of space to accommodate the four features, which may or may not involve a financial cost for consumers.)

The requirements would necessitate some minor changes to room sizes in some new home designs. Precise information about the number and size of houses and

[9] DPCD based on building approvals data for new houses.
[10] DPCD based on building approvals data for new units and semi-detached, row, terrace, townhouse etc.
[11] DPCD based on building approvals data.
[12] DPCD based on ABS, 2006 Census, Population and Housing. The highest numbers of people aged 65-plus are located in Melbourne's established eastern suburbs, as well as the Mornington Peninsula. The highest numbers of people aged 65-plus who need assistance with core activities are located in Melbourne's established outer eastern, northern and north-western suburbs. The medium numbers of people in both groups are located in Melbourne's established suburbs and the south east outer growth area. The lowest numbers of people in both groups are found in the inner city as well as the other outer growth areas.
[13] DPCD, 'Melbourne 2030: A planning update, Melbourne @5 million'. Almost 316,000 dwellings are anticipated in Melbourne's established areas and over 284,000 dwellings are anticipated to be in Melbourne's growth areas.

apartments built in Victoria that meet the minimum door and hallway width requirements, the number and size of bathrooms currently built on the ground level of two-storey houses, and the number of stand-alone toilets currently built, is not available. Making a precise estimate of the liveable space that would be used to accommodate the four accessibility features is therefore not possible. In the absence of this information, based on consultation, we have estimated that the total impact on dwelling size is unlikely to be more than half a square metre. There are a range of tools that can be used to estimate the cost of space as explained in Appendix 7. After reviewing the available data, DPCD believes that $1,000 per square metre is an appropriate estimate of the cost of space (See Appendix 7). Using the estimate of $1,000 per square metre, and given that, under the policy proposal, 35,727 new homes built annually in Victoria would incorporate the four features, the cost of the alternative use of the space to accommodate the features would be $17.9 million per year, or $148.9 million over ten years (NPV, discounted at 3.5 per cent). In most cases, it is expected that this would not be a financial cost added to the price of new homes, but would be absorbed via amenity impacts of alternative designs for homes.

The expected benefits of the features, while only partly quantifiable, are expected to outweigh the costs. Benefits include the participation and dignity benefits for people with a disability, and the savings to the community from people with a mobility restriction or temporary injury being able to access their own home or a friend's home rather than, for example, to remain in hospital for longer periods.

Multi-criteria analysis of options

The various means of achieving the target levels of adoption of the minimum features were assessed using Multi-criteria Analysis (MCA). The MCA results are shown below.

Varying building regulations, via a Victoria-specific variation to the Building Code of Australia (BCA), was assessed as the option with the highest net benefit. Building-in the features from the start was found to be more efficient than retrofitting the features in the homes of specified categories of people, such as the elderly, or people with a disability. Widespread adoption of the features would be necessary to achieve the social benefits of greater community participation when a larger proportion of new homes can be visited by people with a disability. Also, widespread adoption of the features would underpin savings due to reduced health care services for the elderly and people with a temporary impairment.

Targeting the features to a small subset of new homes would not achieve the Government's policy goal of widespread visitability, ie. adoption of the features in

all BCA Class 1 dwellings, all ground-floor dwellings of Class 2 medium density buildings with no lift and one in five dwellings in Class 2 high-rise buildings with lifts.

Table S1: Summary of MCA results

Option	Effectiveness (weighted score)	Cost (weighted score)	Overall score
1. Information and education campaign	12.5	-7.5	**5.0**
2. Self-regulation regime	17.5	-5.0	**12.5**
3. Regulation (minimum set of features)	42.5	-17.5	**25.0**
4. Regulation (above-minimum set of features)	45.0	-25.0	**20.0**
5. 5. Tax and subsidy scheme (minimum set of features)	25.0	-10.0	**15.0**

Description of the proposed variation

The preferred option is to make a Victoria-specific variation to the BCA ('proposed variation') to require adoption of the minimum set of accessibility features for all Class 1 buildings and a subset of dwellings in Class 2 buildings from May 2011. The proposed variation was identified as the best option for achieving minimum levels of housing accessibility. The proposed variation entails the highest net benefits for the community and would provide consistent standards across municipalities which would provide consistent costs for industry.

The principal effects on society of the preferred option are in the form of enhanced safety and amenity, greater social inclusion and social capital, and higher quality housing.

The preferred option would affect the community as a whole, and specific groups including home occupiers, people with a disability, and building industry participants.

The estimated total annual extra-over cost of the features is $30.8 million. This estimate is based on an estimated cost of $870 (for Class 1 dwellings), $190 (Class 2 dwellings, low-rise) and $1000 (Class 2 dwellings, high-rise with lift), for a total of new 35,727 dwellings per year. This estimate is conservative because some existing designs have open planning and wider doorways and hallways and would not incur these costs. Additional one-off adjustment and implementation costs for industry and the government are estimated to be $0.85 million, and additional ongoing enforcement costs are estimated to be $0.34 million per year.

Over ten years, the estimated net present value (NPV) of the costs is $259.8 million (constant prices, 3.5 discount rate; including the one-off implementation and adjustment costs and ongoing enforcement costs). The estimated costs do not

include other costs, such as the opportunity cost of alternative use of space to accommodate the four features, which may or may not involve financial costs for consumers.

The annual value of the quantified benefits of the features is estimated to be $5.4 million. This estimate excludes the unquantified benefits of reductions in hospital stays, greater safety and amenity, better quality homes and ageing in place. This estimate also excludes benefits from participation that are expected to be large in magnitude. Over ten years, the estimated NPV (constant prices, 3.5 per cent discount rate) of the quantified benefits is $44.9 million. Taking into consideration the unquantified benefits and the significant unquantifiable participation and equity benefits, DPCD believes that the benefits of the preferred option would outweigh the costs.

The following conclusion was reached in the analysis of the expected costs and benefits of the four features:

- Against the reference cost of retrofitting the minimum set of features, the cost of designing-in the proposed features is very low. The costs are incremental in nature and in some cases negligible.
- The net benefits of designing-in the proposed features – with these benefits including the equity and dignity benefits of widespread visitability and adaptability in new housing, along with other benefits such as greater safety and amenity, better quality homes and ageing in place, lower healthcare costs – are assessed as outweighing the costs.

Small business impact

Given the structure of the building industry, the impact of the proposed variation would fall more heavily on small businesses. However, the overall impact and the compliance burden are not expected to vary significantly between a typical small business and a large business. There would be a modest one-off cost to amend the existing plans and other documents for standard house designs. Small business would have sufficient time to revise their documents in an orderly and efficient way.

Competition impact

The regulatory proposal represents a minor variation to the overall regulatory framework for the building industry. The proposed variation would not restrict competition, and no broader competition impacts would arise from the proposed variation. The impact on business costs is expected to be negligible; the proposed

minimum standards would not affect the ability of businesses to innovate; and the proposal entails small changes to dwelling designs, utilising readily available products offered in the market.

Change in administrative burden

The preferred option is not associated with any significant new administrative burden. The preferred option would not require separate building plans to be produced (existing plans would be revised); it would not require the retention of additional paperwork or copies; and it would have no additional reporting requirements.

The only associated administrative requirement is the cost of familiarisation with the new requirements. To reduce this potential cost, the Victorian Government, via the Building Commission and DPCD, would hold familiarisation briefings and seminars with industry participants, and would publish relevant guides and toolkits on their websites and elsewhere, to help abate the cost of familiarisation with the requirements. It is considered that the administrative burden associated with the proposed requirements is not material.

DPCD will work to clarify the extent to which the proposed requirements will impose additional administrative costs on business, and whether a Standard Cost Model measurement needs to be undertaken.

Conclusion

This Regulatory Impact Statement concludes that:

- **the benefits to society of the proposed variation to the BCA are expected to exceed the costs;**
- **the net benefits of the proposed variation are greater than those associated with any practicable alternatives;**
- **the proposed variation does not restrict competition; and**
- **the proposed variation would not lead to a material change in the administrative burden on industry.**

Implementation and enforcement

The preferred option would be implemented as a Victoria-specific variation to the Building Code of Australia. A revised version of the BCA is released annually on 1 May. The enforcement of the new requirements would be based on current arrangements for enforcing the BCA standards. Enforcement of the building regulatory framework is carried out primarily by municipal and private building surveyors. Authorised officers from the Building Commission may conduct audits to ensure compliance with the *Building Act 1993* and the *Building Regulations 1994*.

Evaluation strategy

To inform the ongoing evaluation of new regulatory requirements, the Building Commission collects data through audits, industry reporting and compliance activities, inquiry databases and stakeholder consultation. The Building Commission has commenced development of an evaluative framework to enable assessment of the *Building Act* and the associated Regulations. The intent is to allow an ongoing review of the effectiveness of the Act and Regulations with a view to streamlining and simplifying the Regulations in line with the Government's support for regulatory reform. The framework would apply to existing and new requirements under the BCA in Victoria.

Consultation

The primary function of the RIS process is to enable members of the public to comment on regulatory proposals before they are finalised. Public input, which draws on practical experience, can provide valuable information and perspectives, and thus improve the overall quality of regulations. The proposed variation to the BCA is being circulated to key stakeholders and feedback is sought. DPCD, which is responsible for administering the *Building Act 1993*, welcomes and encourages feedback on the proposed variation.

While in no way limiting comments, stakeholders may wish to comment on:

- any practical difficulties associated with the proposed variation to the BCA;
- the impacts of the proposed variation on different parts of the economy;
- the use of performance-based requirements rather than prescriptive requirements;
- any unintended consequences associated with the proposed variation; and
- the specific questions set out below

All submissions will be treated as public documents and will be made available to other parties upon request. The period for public consultation closes on the 5 March 2010.

Specific questions for consultation

Q1: Proposed variation and accessibility

The proposed variation comprises four features:

- *a clear path from the street (or car set-down/park) to a level entry*: (1 metre wide path or ramp with no handrails, from the street or car parking; exemption for sites with an average slope steeper than 1 in 14);
- *wider doorways and passages*: a minimum clear opening width of 820mm to required doors (based on approximately an 870 wide door leaf) and a minimum clear opening width of 1000mm to halls;
- *a toilet suitable for people with limited mobility on the entry level*: achieved with a toilet compartment measuring 900mm wide and 1200mm from the front of the pan to the nearest part of a doorway, or for a toilet located in a bathroom it must be in the corner; and
- *reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later*: required to two sides of the entry level toilet, a bath and one side of a shower for a certain extent.

<u>If accessibility and affordability were objectives in the construction of private dwellings in Victoria, what features, and what dimensions of those features, would you consider to be the minimum requirements? You may also wish to give consideration to the proposed requirements for the common areas in Class 2 buildings.</u>

<u>Given that some studio apartments and small apartments may not currently be designed with toilets located in the corner of the bathroom, does the proposed requirement raise any issues for stakeholders?</u>

Q2: Proposed variation, affordability and amenity

Independent quantity surveyors have estimated the cost of the proposed variation to be $870 for a house and land package.

<u>What do you consider to be a realistic cost that consumers would be prepared to pay for the package of accessibility features?</u>

Do you consider the cost estimates presented in this RIS to be reasonable estimates of future costs?

To what extent do you consider that the four features would result in reduced amenity for residents due, for example, to alternative use of space or altered designs (eg. an inability to have steps leading to the house)?

Q3: Application of any mandatory standards on Victoria's new dwellings

The proposed variation applies to the entry level of all new private dwellings [14] which are BCA Class 1 (including Class 1a and 1b), to new ground floor dwellings of medium density housing and one in five dwellings in new high-rise buildings which are BCA Class 2. The proposal does not apply to Class 4 dwellings (ie. a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building).

Given the *Melbourne 2030* policy objectives of a more compact city, and given that apartments are an affordable choice for many people who have a disability, what are your views on the proposed application of the features to the BCA building classes?

Please give consideration to:

- BCA Class 1a and 1b;
- BCA Class 2; and
- BCA Class 4.

An analysis of the accessibility requirements for all BCA classes is included at Appendix 11.

Q4: Proposed variation and the national Premises Standard

The proposed Victorian variation supplements the requirements of the national draft *Disability (Access to Premises – Buildings) Standards 2009* for BCA Class 1b dwellings (boarding house, guest house, hostel etc.).

The Premises Standard, which addresses the needs of people with a disability, is proposed to have more stringent requirements when it comes to sanitary facilities and common areas. Where there are a number of holiday accommodation

[14] The proposed variation is not requiring an entry level shower and/or bath; it is only proposed to require wall reinforcement for grab rails for those items. If there is no bathroom on the entry level the wall reinforcement feature for the shower and bath would be required to be installed upstairs (or on the level that the bathroom is located) to allow the fitting of grab rails.

dwellings on one allotment, only a proportion (1 in 4 to 1 in 10) of dwellings would need to meet these requirements.

The proposed variation would pick up the remaining holiday accommodation dwellings not covered by the Premises Standard. These remaining dwellings would need to meet a lesser accessibility standard, designed to meet the safety and amenity requirements of the broader community.

Do you consider that the inclusion of BCA Class 1b dwellings in the Victorian variation would be likely to raise any issues for stakeholders?

1. THE ISSUE TO BE ADDRESSED

Key points

- The Victorian Government has made a policy commitment to ensuring that people with a disability or limited mobility will not be excluded from participating in social life and work[15] and that all types of housing will be visitable and adaptable.
- The Victorian Government's policy commitment has implications for the design and construction of new homes. When a house is designed and built, decisions are made about housing features that affect future occupants and visitors. The terms 'accessible housing', 'visitable housing' and 'adaptable housing' refer to residential building features that permit access to and use of those buildings, and future adaptation of those buildings.
- A range of features that would improve the visitability and adaptability of housing, and the overall quality, safety and liveability of housing, are not being included in new homes. These features include clear pathways, wider doorways, accessible toilets and adaptable bathrooms.
- DPCD estimates that approximately 96 per cent of new homes built in Victoria lack these features. [16] The omission of visitability and adaptability features is felt most sharply among people with a disability or some other form of mobility limitation. However, it can be felt by many people when their needs change. For example, their needs may change when raising small children, using crutches while recovering from an injury, or welcoming ageing parents. The whole community is affected by the reductions in quality, safety and liveability that arise when visitability and adaptability features are not included in new homes.

Defining visitable, adaptable and accessible housing

The terms 'accessible housing', 'visitable housing' and 'adaptable housing' refer to residential building features that permit access to and use of those buildings, and future adaptation of those buildings. There are many definitions for these terms. The following definitions, adapted from VCEC definitions, are used for the purposes of the RIS:

[15] *A Fairer Victoria: Building on our Commitment*, May 2007, page 46.
[16] Office of Housing (Vic) data.

- **Visitable** housing – allows most people to visit a home with dignity, including overnight, and for a person with a disability to reside temporarily;
- **Adaptable housing** – has provisions that enable a home to be altered without major structural works and at a much lower cost to make it accessible and useable in the future; and
- **Accessible housing** – allows access and use by most occupants and visitors, including people with a disability or some other form of mobility impairment.[17]

The most basic features of visitable housing are:

- a traversable pathway to a level entrance;
- sufficiently wide doors and passageways; and
- a toilet that a mobility-impaired person can access with assistance.

A key feature of adaptable housing is the installation of reinforcement in bathroom and toilet walls to allow the subsequent fitting of grab rails.

These visitability and adaptability features are discussed in the following sections. The discussion includes an analysis of the relevant costs. The accessibility features are a sub-set of the features included in 'universal design' standards.

The market is under-providing visitable, adaptable and accessible housing

In Victoria, private dwellings are not currently required to be visitable, adaptable or accessible. In this regulatory environment, some developments with government involvement are including visitability, adaptability and accessibility features in new homes. For example:

- developer Australand's recently constructed Parkville Gardens estate (built for the Commonwealth Games Athletes' Village) included accessibility features in 170 villas and homes.[18]
- VicUrban's Accessible Adaptable Housing demonstration project will explore two approaches to achieve increased market delivery of accessible and adaptable housing. The first project will look to partner with a builder/developer to deliver a master planned integrated accessible and adaptable housing project at Roxburgh Park. The second will seek to influence market take up of accessible and adaptable housing through the use of design controls in the Lakes Edge residential project (Hamilton) which VicUrban and

[17] Adapted from the VCEC's 2005 inquiry, *Housing Regulation in Victoria: Building Better Outcomes.*
[18] HIA 2005, Submission to the Australian Building Codes Board and the Building Commission accessible housing in Australia research report, Canberra 2005b, p. 4.

the local council are undertaking as a joint venture. VicUrban's Accessible Adaptable Housing Project seeks to:

- normalise the concept that homes should meet the access needs of residents and their visitors or be capable of cost effective adaptation;
- improve industry and consumer awareness of housing design that is accessible and adaptable for people of all ages and abilities;
- quantify and communicate the lifetime cost savings of integrating access standards in the design and construction of new homes; and
- use these lessons to embed the integrated delivery of accessible and adaptable housing in future VicUrban projects.

- VicUrban's Sustainable and Affordable Housing Initiative will construct five architect-designed 7 star homes as a demonstration and education centre at Meridian (Dandenong South) which are planned to be open to the public in 2010. Each home includes accessible and adaptable design features.[19]

One of the criteria the Commonwealth Government has applied when assessing social housing proposals for the $42 billion Nation Building – Economic Stimulus Plan is the adherence to universal housing standards, which include the four accessibility features.

Notwithstanding these efforts, the great majority of new homes being built in Victoria are unvisitable, inaccessible and costly to adapt for people with a disability or some other form of mobility limitation. Most importantly:

- the majority of new homes built on level ground or nearly level ground nevertheless feature steps to the entrance, or other physical barriers at the entrance which prevent access by people with limited mobility;
- the majority of new homes are being built with door and passage widths that do not permit access by a person in a wheelchair or other mobility aid; and
- bathrooms are not being designed to allow a person with impaired mobility to use them with assistance in a dignified manner.

The market as a whole is not providing housing that is accessible, despite the fact that accessibility concepts are widely discussed and understood in the broader commercial construction sector, and are expressed in Australian Standards, one specifically relating to housing.[20] The Productivity Commission in 2004 concluded that 'It is most unlikely that certain building qualities, such as access for people with disabilities, would be delivered widely in the absence of government intervention'

[19] For further information see <www.vicurban.vic.gov.au>.
[20] AS 4299-1995 Adaptable Housing.

(page xxiii). The Productivity Commission did not conclude, however, that this necessarily warranted intervention via regulation.

The UK model is based on a combination of mandatory requirements for the four minimum features (in the Building Regulations) and a target that by 2013 all new homes will be built to Lifetime Homes Standards (similar to universal housing), comprising above-minimum adaptability features. All public sector funded housing is to be built to the Lifetime Homes Standards by 2011.

Participants in the 2005 VCEC Housing Regulation Inquiry, *Housing Regulation in Victoria: Building Better Outcomes*, noted that the market had not delivered housing stock with visitable, adaptable and accessible features. The Disability Support Housing Alliance (DSHA) noted:

- the market is failing to provide a choice of suitable rental and purchase housing options for a large segment of the population presently;
- there is no indication that the market will adequately and economically cater for people's desire to 'age in place' and the forthcoming rise in the older population. ('Ageing in place' means that elderly people are not required to move to a hospital or nursing home purely as a result of ageing related reasons that render their current home unliveable. 'Ageing in place' options include staying in your own home, or moving to a suitable home nearby, such as to other peoples' houses for short stays post hospital, or to a suitable new home in the same community. The benefits of ageing in place are discussed below); and
- the market offers little in the way of even basic 'visitability' features, such as 'no step' entries and wider doorways (submission 59, p. 2).

The DSHA also submitted that: 'It is quite clear that without government intervention, the needs of people with mobility impairments are likely to continue to be largely ignored in the commissioning, design and construction of homes' (submission DR149, p. 3).

Similarly, the Equal Opportunity Commission of Victoria noted:

> 'To date the housing construction market has responded unsatisfactorily to accommodate the needs of individuals with a disability or providing independent living solutions for the ageing population. Given the absence of market driven solutions we need regulation to facilitate attitudinal change and sustainable inclusive growth in housing' (submission 75, p. 7)

The extent of the problem is large. Approximately 40,000 new homes are built in Victoria each year. At present, DPCD estimates that 96 per cent of all new homes built in Victoria lack basic visitability, adaptability and accessibility features.[21]

A possible reason for the under-provision of accessibility features is that builders and developers may not perceive that there is a marketing advantage from including these features, or that people with limited mobility, for example, are a potential client group.

Further, market research conducted by the Building Commission indicated that there is confusion in the construction sector about which accessibility standards to apply in the design of private dwellings.

In its 2005 Housing Regulation inquiry, the VCEC concluded: *The Commission considers it is inappropriate to introduce specific Victorian Building Regulations in this area at present. This is not because it believes that government intervention could not be warranted, or because it doubts that such regulation would deliver benefits for some people with some disabilities. Rather, it is because it is not clear that government intervention in this form is the most cost-effective manner of delivering improved accessibility and, thus, in the best interests of the community generally.*[22]

Cost-effectiveness is applied as a key criterion in the remainder of this RIS. In particular, cost-effectiveness is a principal criterion in the formulation and evaluation of the options to achieve the relevant policy objectives. (See sections 3 and 4 for more details of the application of this criterion.)

Consequences of the lack of visitability, adaptability and accessibility features

A number of consequences arise from the fact that people with limited mobility are denied access to homes:

- People with a disability or mobility limitation are excluded from visiting the homes of friends, neighbours, relatives, carers, clients and other people. This exclusion has numerous social and psychological consequences for people with limited mobility. It also affects the health of people in the community, and damages community cohesion in a way that affects the quality of life in the community as a whole. A variety of physical impairments may cause people to have limited mobility, and require people to use a wheelchair or some other form of assistance such as a walking frame, a stick or crutches. Approximately 180,000 people in Victoria have a disability and require assistance with self care

[21] Source: based on Office of Housing (Vic) data. For further information see the discussion of this figure in the Summary section.
[22] VCEC Housing Inquiry report, 2005, page 124.

and mobility and live in private accommodation. [23] This corresponds to approximately 155,000 households (8.7 per cent of households)[24];

- In homes without accessibility features (eg. homes with narrow doorways and passageways) there are barriers to timely access by emergency services personnel. Consultation with access consultants has indicated that access for ambulance personnel with a trolley is also limited;
- Homes that lack adaptability features are expensive to modify for people with a disability to live in. For example, level thresholds are a structural feature of a house, such that removing threshold steps can require significant building work, and entail significant cost. (See the following sections for a discussion of the relevant costs.);
- People whose mobility is temporarily impaired (such as through a workplace injury or a sporting injury) experience lower amenity than they would if their home had accessibility features. The number and rate of incidents of hospitalisation are on the increase and the average length of time spent in hospital is decreasing. While the reduced length of stay may be attributed to improvements in medical practices, it also suggests that individuals are returning home earlier to convalesce. In Victorian hospitals, the average length of stay dropped from 4.1 days in 1996 to 3.1 days in 2006-07.[25] However, people living in inaccessible housing may need to stay longer in care because of the lack of a suitable discharge destination;
- People who acquire a permanent mobility impairment, such as through disability or ageing, are less able to remain in their home if it lacks accessibility features. The ageing of the population and the trend in increased medical intervention mean that reduced mobility is a reality for many (See the following section for a discussion of relevant Government assistance.);
- People with a disability or other mobility impairment are less able to participate in work that is undertaken in other people's private homes that lack accessibility features. Relevant types of work include tutoring, babysitting and

[23] ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0. The ABS defines disability as any limitation, restriction or impairment which has lasted or is likely to last for at least six months and restricts everyday activities. The figure of 180,000 people comprises those people who use aids or equipment for self care or mobility because of their disability.

[24] Source: DPCD, based on ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0. This figure excludes people who have a short term injury (such as an injury for less than six months). Data are not available for the other people who would benefit, however DPCD estimates that eventually almost all housing would be home to people who would benefit including: people with a short term injury or mobility-limiting illness; people who use prams (most housing would eventually be home to some infant children); people who are frail aged (2006 Census data indicates 135,000 Victorians are over 80 years of age and live in a private dwelling); and people who are moving furniture (DPCD estimates there are 150,000 home moves in Victoria each year).

[25] DPCD, based on ABS Australian Social Trends 2007. Cat. No. 4102.0 and AIHW Australian Hospital Statistics 2006-07.

music teaching. Workplaces such as shops and offices are designed for accessibility, and subject to the *Disability Discrimination Act 1992*, whereas people with a mobility impairment choosing to work from home would need to modify their home. Working in other people's homes would be limited by accessibility barriers. Data are not available on the precise extent of this problem, but flexible and home-based work options are on the rise throughout the community; and

- People with a disability or other mobility impairment face a lack of access to rental accommodation opportunities and are therefore largely excluded from the rental market as a housing option due to the absence of accessibility features.

The need for housing with accessibility features will increase in the future, as will the consequences of people with limited mobility being denied access to homes. This is based on forecasts that Victoria's population is ageing, and the corollary, as indicated by AHURI research, that the prevalence and severity of rates of disability will increase.[26]

Monash University Accident Research Centre research into slips, trips and falls in buildings related to construction design has found that they are the most prevalent fall hazard; they account for a significant number of falls in people who are aged resulting in loss of confidence, injury, hospitalisation or death.[27] The report identifies that single steps or a two riser stairway are one of the leading causes of stair falls.[28] The risk of slip and fall incidents increases with age; Archicentre has found that the homes of older people could on average present greater slip and trips hazards.[29] Young children under four years of age also have a significant number of falls resulting in admissions to hospitals for treatment.[30] The Monash University Accident Research Centre research findings indicate that widespread measures should be adopted to improve home safety, including the requirement to install slip resistant surfaces on external paths and level thresholds in homes to eliminate slip and trip hazards.[31]

Minor safety modifications in the home have been found to contribute to reducing the number of falls among the elderly by 58 per cent, although there is no evidence

[26] DPCD and AHURI: Andrew Beer and Debbie Faulkner, 2009, 21st Century Housing Careers and Australia's Housing Future.
[27] Monash University Accident Research Centre, The relationship between slips, trips and falls and the design and construction of buildings, (funded by the ABCB), 2008, p. 12 – 13.
[28] op. cit., p. 24-25; the research cites Pauls (1984) who notes that the failure to notice a one or two riser stairway in a user's path is one of the leading causes of stair accidents.
[29] op. cit., p. 55-56.
[30] op. cit., p. 107.
[31] op. cit., p.189.

that the provision of a safer environment alone is of benefit in preventing falls.[32] Monash University Accident Research Centre reports that 5 per cent of falls in buildings are caused by slip or trip hazards.[33]

It is not only older people who have accidents or injuries as a result of poor building design.

Box 1.1: Consumers, the building industry and 'Build for Life'

Consumers visiting the Government's 'Build for Life' stand at a 2009 Homeshow tended to be one of two groups; younger consumers who thought accessible housing was a good idea in concept and would meet their needs with young children, and consumers aged 50 and over who recognised that they would need accessibility features in the future.

Volume builders indicated that they can provide accessibility features when consumers ask for them, but that they do not provide accessibility features in their standard products. One builder identified the potential market for accessibility features owing to the ageing population. Builders are also concerned that there have been cases of different requirements in different local government areas all of which adds to costs.

When buying a volume built home, many first homebuyers do not know to ask for accessibility features, as the features are not listed in the stated options, and buyers may not be informed about their benefits. Notwithstanding the future value of accessibility features, they are not a consideration in many people's buying decisions.

There is some confusion in the sector about which features to offer consumers. Building designers have indicated that it is difficult to make decisions about which features to offer because of a lack of guidance information available, and the fact that there is not yet a 'standard' set of accessibility features. In this light, designers gave positive feedback on the 'Build for Life' consumer guide (2009) which has a checklist for selecting features to suit your accessibility needs to make selections simpler.

Consumers who do not live with an ongoing disability are not focused on accessibility features when buying a home. There is a need to raise awareness so that people factor in the possibility that they themselves or someone they know will acquire a mobility restriction at some time. The message that families' needs change over time is highlighted in the 'Build for Life' campaign.

Qualitative research on the decisions by empty-nesters to move home found that, because of a general disinclination to move, people in this category seek suitable housing options 'just around the corner'. They have limited interest in moving to an apartment or retirement village unless it is around the corner. A strong motivator was to stay close to family. Some of the people moved due to financial pressures or to seek a 'sea-change'. The ideal new home

[32] Hill, Vrantsidis, Haralambous, Fearn, Smith, Murray and Sims on Thompson and Plautz, 2004, An analysis of research and preventing falls and falls injury in older people: Community, residential care and hospital settings, p. 22.
[33] Monash University Accident Research Centre, The relationship between slips, trips and falls and the design and construction of buildings, (funded by the ABCB), 2008, p. 63.

was open-plan, low maintenance home that was on one level, however these homes were in short supply because they were in high demand.[34]

Specific data are not available on the average time people live in the same home; however DPCD analysis shows that most people as they age are staying in their homes for the vast majority of their older years. They do not move home until very late in life and then typically to non-private accommodation which is costly.[35]

Current regulatory and policy framework

Regulation of building in Victoria is embodied in three main sets of instruments:

- the Building Code of Australia (BCA) – the minimum requirements for building practices and for aspects of building performance;
- state legislation comprising the *Building Act 1993*, Regulations and variations to the Building Code of Australia; and
- municipal planning laws.

The BCA is discussed below. The *Building Act* (the Act) sets out the framework for the regulation of the construction of buildings, building standards and the maintenance of specific safety features in Victoria. The Act substantially enacted the National Model Building Act (Commonwealth), which the Australian Uniform Building Regulations Co-ordinating Council completed in 1991.

The Act is supplemented by Regulations which 'call up' the BCA and give it legal status as a technical reference. The Regulations prescribe standards, fees and other matters to give effect to the Act. The Regulations are derived from the Act and contain requirements relating to matters such as registration of building practitioners, building permits, building standards and the maintenance of specific safety features in Victoria.

The Act is also supplemented by ministerial guidelines relating to fees, charges and the functions of building surveyors (section 188) and guidelines relating to the design and siting of single dwellings (section 188A).

The Act has been subject to few major revisions since it was first enacted. Major amendments were undertaken in 1996, 2000 and 2004, and all were unrelated to accessibility:

- part 12A Plumbing Work was inserted in 1996 to ensure plumbing work is carried out safely and competently;

[34] Sweeney Research, 2006, Insights into the housing decisions made by empty nesters, for the Department of Sustainability and Environment, p. 50-55.
[35] DPCD, based on Australian Census data.

- part 5A, Registration of Cooling Tower Systems, was inserted in 2000; and
- the *Building (Amendment) Act 2004 (Vic.)* applied special provisions for owner–builders.

The *Building Act* has ten objectives (see Appendix 2). Of particular relevance to the subject matter of this RIS are the first and third objectives of the Act:

- to establish, maintain and improve standards for the construction and maintenance of buildings; and
- to enhance the amenity of buildings and to protect the safety and health of people who use buildings and places of entertainment.

The BCA is a uniform set of technical provisions for the design and construction of buildings throughout Australia. It prescribes the minimum building standards for all new and existing buildings in Australia and is maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian and State and Territory Governments. Appendix 1 defines the various classes of buildings under the Code.

The BCA is given legal effect by building regulatory legislation in each state. Each State and Territory's legislation adopt the BCA subject to variation of some of its provisions to reflect the particular circumstances of each jurisdiction. Recital C (iv) of the Inter-governmental Agreement for authority to vary the BCA provides that:

'To strengthen reforms to building regulation nationally, the respective governments of the Commonwealth, the States and the Territories commit to, inter alia:

iv. restricting any New Variations from the BCA by State and Territory governments by, as far as practicable:

A. limiting variations to those arising from particular geographical, geological or climatic factors, as defined in the BCA;

B. requiring that any variations be subject to a Regulatory Impact Assessment; and

C. requiring that any variation be approved by the State or Territory Minister'.[36]

The BCA includes provisions that aim to achieve a range of different objectives including safety, amenity and energy efficiency. Currently, the BCA has no requirements for accessibility features in relation to private dwellings. The Commonwealth Government is reviewing the technical requirements for buildings to meet the intent and objectives of the Commonwealth *Disability Discrimination Act 1992* (DDA). Presently, the Commonwealth is considering a national draft

[36] *An Agreement between the Governments of the Commonwealth of Australia, the States and the Territories to continue in existence and provide for the operation of the Australian Building Codes Board*, April 2006, p. 4.

Disability (Access to Premises – Buildings) Standards 2009 which will apply to premises the public is entitled to enter or use (BCA Classes 3, 5-10 and specified Class 1b buildings). Once the Premises Standard has been formulated, the BCA will be amended to include the same technical detail. In the future, compliance with the BCA will mean compliance with the Premises Standard and hence the DDA.

As the VCEC noted in 2005, 'there appears to be little effective regulation to deliver accessible, visitable or adaptable private housing in Victoria':

- The Commonwealth DDA prohibits discrimination against people with a disability. However, the DDA relates to premises to which the public has access, but not private premises such as private housing;
- Victoria's *Equal Opportunity Act 1995* prohibits discrimination in terms similar to the DDA, but does not deal with access to private housing by people with a disability, other than their right to make alterations;
- The access provisions of the BCA do not apply to Class 1 (detached houses, terrace houses, row houses), Class 2 buildings (apartments) and Class 4 buildings (a single dwelling in a building); and
- The Victorian Planning Provisions have two relevant objectives. Clause 55.05 has the objective of encouraging 'the consideration of the needs of people with limited mobility in the design of developments'. The associated Standard B25 requires that 'The dwelling entries of the ground floor of dwellings and residential buildings should be accessible or able to be easily made accessible to people with limited mobility'. Clause 55.02-3 has the objective of encouraging a range of dwelling sizes and types in developments of ten or more dwellings. The associated Standard B3 requires that 'At least one dwelling that contains a kitchen, bath or shower, and a toilet and wash basin at ground floor level'. The planning provisions do not, however, prescribe minimum door widths, ramp gradient and dimensions for bathrooms or toilets.[37] (Nor does it apply to single dwellings.) Provisions in the VPP are implemented through the planning system by the relevant planning authority. Enforcement is under the *Planning and Environment Act 1987*. The relevant building surveyor must not issue a building permit unless it is consistent with the planning permit.

[37] Clause 55.02-3 and clause 55.05 of the Planning Scheme under the *Planning and Environment Act 1987*.

The inclusion of accessibility features in the VPP is inconsistent with the Council of Australian Governments (COAG) National Reform Agenda to implement building regulation through the BCA, rather than a parallel regulation. The *2009 COAG Reform Council Report* recommended that COAG:

q. notes that reform is being implemented within the BCA as agreed but that it may not be achieving the objective of a more nationally consistent system of building regulation due to regulation being pursued outside the BCA; and

b. agrees that the development, consideration and implementation of proposals to deal with such regulation should remain a priority for governments.

The COAG Principles are enshrined in the objectives of the ABCB. One of the COAG principles is the harmonisation of state requirements to achieve a nationally consistent system of building regulation ,[38] expressed as:

> 'Ensure that BCA requirements are consistent across the States and the Territories, except for circumstances arising from particular geographical, geological or climatic factors' (p. 5)

The flat topography of inner Melbourne and the majority of Melbourne's growth areas make it more cost efficient to provide access to homes in Melbourne, in comparison to other large Australian cities like Sydney or Brisbane, which typically have steeper topography.

In *A Fairer Victoria: Building on our Commitment* (May 2007) the Victorian Government expressed the following high-level policy goal (Strategy 10):

> 'We want to ensure Victorians living with a disability can participate fully in community life and that services for people with a disability provide them with maximum choice and opportunity in the way they live their lives. A Fairer Victoria focuses on ensuring Victoria is a more supportive and accessible place for people with a disability and their families and carers. Our programs and actions are designed to assist people with a disability [to] remain living independently in their own homes, have greater control over their own lives, and participate fully in the economic and social life of Victoria, including preparing for and entering the workforce'. (p. 46)

A Fairer Victoria: Building on our Commitment also set out the following specific policy commitment:

> 'Through the Accessible Housing Program, we will increase the supply of accessible housing that meets the needs of people with a disability now and into the future. We will work with industry and local government on a range

[38] ABCB, *Strategic Review of the BCA Against COAG Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies*

> of initiatives including a Homes for Life guideline. We will also promote greater understanding and awareness of accessible building issues and develop low cost/no cost accessibility options for ground floor apartments in new medium density developments and in 20 per cent of units in new high density apartment blocks.' (p. 48)

Other relevant policy commitments of the State Government include the *State Disability Plan* and the 'Charter of Human Rights and Responsibilities'. While the charter does not mandate accessibility, it is relevant with regard to the equity and dignity impacts of a lack of accessible housing, and relates to the Government's policy commitments with respect to accessibility in housing.

In light of the Charter and the policies discussed above, the Victorian Government has a commitment to achieving accessibility, visitability and adaptability in housing. At present, the BCA as it applies in Victoria is not meeting the State Government's commitments with respect to accessible housing. Moreover, the community as a whole is incurring unnecessarily high costs arising from the need to retrofit or rebuild homes to accommodate people with a disability or other mobility impairment, and the need for longer hospital stays. (These costs are examined in the following sections.)

As a matter of policy, the Victorian Government has encouraged people to live independently in their own homes for as long as possible. Presently, the majority of people with a mobility limitation reside at home.[39] Some people with mobility limitations live in unsuitably designed dwellings, or use their own resources to modify their homes to suit their mobility needs. In addition, the Victorian Department of Human Services funds a range of options for people who meet eligibility requirements.

DHS provides accessible or modified public housing properties to eligible Victorians in housing need. A significant number of people are not eligible for the program.[40] Since 2001, DHS has built all public housing to an accessible and adaptable standard. To date, approximately 22,000 public housing properties have had some form of disability modification, including over 8,000 properties with major, or full, modifications.[41]

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[39] In 2003, 70 per cent of Australians who used a mobility aid lived in a private dwelling. DPCD based on ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0.

[40] In Victoria, people can apply for public housing if they cannot afford a suitable home to rent and they meet the eligibility conditions. The income threshold is $450 per week for a single person and increases to $987 per week for a family with seven dependent children. People must not own/part own housing, must live in Victoria, must be a permanent resident and must repay any money owed to the Office of Housing. People are prioritised who are in urgent need because of homelessness or other critical circumstances.

[41] Department of Human Services.

The Victorian Government also provides other funding support for private and public households to modify their homes through various programs. Only eligible applicants can apply and funding is capped. These programs are for home modifications and are more expensive than building in accessibility features from the start. (DHS provides loans, or funding, for modifications to homes through the Home Renovations and Loans Scheme and the Aids and Equipment Program.) Government assistance for structural modifications is limited to undertaking modifications for public and social housing tenants and providing assistance through loans and advice to private households. [42]

Table 1.2 shows the number of people with a disability who live in private households and who have made modifications to their home.

Table 1.2: Persons with a Disability in Australia: Living arrangements by whether home modifications are made because of health conditions [(a)]

	Lives alone in private dwelling	Lives with others in private dwelling	Total
	'000	'000	'000
Home modifications made			
Structural changes	10.1	25.0	35.0
Ramps	22.9	57.4	80.3
Toilet, bath or laundry modifications	54.8	133.2	188.0
Doors widened	0.7	11.1	11.8
Handgrab rails	78.6	156.5	235.0
Other home modifications	24.0	73.1	97.2
All who have made home modifications(b)	**113.8**	**281.9**	**395.7**
No home modifications made	**598.7**	**2 684.4**	**3 283.1**

Source: ABS, Disability, Ageing and Carers 2003/4. Cat. No. 4430. (a) Not asked of people living in non-private dwellings. (b) Total may be less than the sum of components as persons may have made more than one type of modification.

Under the Home Renovations and Loans Scheme, the building advisory service Archicentre of the Victorian Chapter of the AIA provides free home inspections and

[42] AHURI: Jones, Desleigh de Jong and Phillips, 2008, The impact of home maintenance and modification services on health, community care and housing outcomes in later life, p. 46-47.

makes recommendations on modifications.[43] Low-cost loans are provided for home modifications costing up to $25,000. On average, 60 per cent of the recommendations by Archicentre, relating to accessible ramps and bathrooms, are being adopted.[44] Of the 220 properties inspected under the scheme in 2008-09, 13.6 per cent (30) resulted in loan funding, indicating that a share of people are using independent resources to modify their properties, using the technical advice received from the scheme.[45]

Funding is also provided under the Aids and Equipment Program for mobility aids, equipment and modifications to dwellings for people who have a permanent disability, or are aged and live in their own home, private rental, or Office of Housing properties. Grant funding is capped at $4,400 (including GST). Table 1.3 shows the number of modifications funded.

Table 1.3: Number of Department of Human Services Aids and Equipment Program modifications funded in 2007-08

Item	Number of clients
Home modifications - ramps	91
Home modifications under $1,000	1508
Home modifications >$1000	377
Portable ramps/steps	70
Total Home modifications	**2046**

Source: Department of Human Services (Vic) data. People living in the own home, privately rented accommodation or Office of Housing properties.

The Victorian WorkCover Authority (VWA) and the Transport Accident Commission (TAC) operate home modification schemes to assist people who are injured at work or in a transport accident. See Box 1.3 for details of these schemes.

Box 1.3: Victorian WorkCover Authority (VWA) and Transport Accident Commission (TAC) modification schemes

The *Accident Compensation Act 1985* provides that the VWA can for reasonable costs of modifying a home (whether privately owned, private or public rental) in which an injured worker resides in Australia, where the modifications are required as a result of a work-related injury or illness. Where the home cannot be reasonably modified, the VWA can contribute a reasonable amount to the purchase cost of a

[43] AHURI: Jones, Desleigh de Jong and Phillips, 2008, The role of home maintenance and modification services in achieving health, community care and housing outcomes in later life, p.2.
[44] Department of Human Services (Vic).
[45] Department of Human Services (Vic).

semi-detached portable unit or to the costs of relocating the worker to another home that is suitable or capable of being reasonably modified.

The VWA considers payments for home modifications:

- when they are necessary to modify the worker's living environment to promote independence, improve mobility and increase safety in the home; and
- where the modification is based on the recommendation of an approved provider such as an occupational therapist.

The TAC can fund the reasonable cost of modifications to a home for a client residing in Australia with prior written approval. The TAC requires clinical justification for home modifications based on access and function within the home related to the transport accident injuries.

The TAC can fund home modifications following:

- advice on all housing/residential options from an occupational therapist
- prior written approval by the TAC, including costings.

The TAC considers all reasonable options when addressing a request for home modifications inclusive of installation and provision of equipment, structural alterations and relocation. Eligibility is determined by the client's need to reasonably access and complete functional activities within the home as a result of the transport accident injuries.

The Federal, State and Local Governments together provide Home and Community Care (HACC) funding for non-structural modifications, repairs and maintenance and personal care delivered primarily through local government. There is limited availability of structural modifications under HACC.[46]

In its 2007 Australia's Welfare report, the Australian Institute of Health and Welfare (AIHW) noted the low number of structural accessibility modifications carried out in private dwellings:

> 'Current applications of assistive technology in the homes of older Australians tend to be conventional in nature, that is, low technology home modifications, aids and equipment. Approximately 24 per cent of older people with disability who were living in private dwellings in 2003 had made modifications to their dwelling because of disability. Installation of

[46] AHURI: Jones, Desleigh de Jong and Phillips, 2008, 'The impact of home maintenance and modification services on health, community care and housing outcomes in later life', pp. 46-47; Municipal Association of Victoria. The Victorian HACC data do not separate maintenance work.

> handrails was the most common type of modification (18 per cent), followed by toilet, bath or laundry modifications (13 per cent). Relatively fewer people reported structural changes to dwellings (2 per cent) or installation of ramps (5 per cent). (AIHW analysis of ABS 2003 SDAC CURF)'.[47]

AHURI researchers are developing an Australian framework for research and policy on home modification programs and outcomes, and international research is used as the basis for current Australian research.[48] AHURI findings on international research on unmet need for home modifications has indicated that many older people with identified difficulties in the home are reluctant to undertake modifications and that substantial unmet need persists.[49] The precise extent of the unmet need is unclear. Barriers to adoption of modifications include the following:

- the need for modifications can arise unexpectedly;
- there may be a lack of knowledge about what modifications are available and how to undertake them;
- there can be a lack of awareness of the benefits of modifications; and
- there are practical difficulties with modifying some homes for some features. [50]

The cost of retrofitting accessibility features can be prohibitively high (this is discussed and quantified below).

There is growing evidence about the merits of enabling people to 'age in place'. Research on people's desire to age in place is summarised by AHURI research which states:

> 'Understanding older people's housing aspirations, especially their emotional attachment to their home, must also be taken into account when considering the need and demand for HMM. There is evidence that a strong focus on safety and independence can lead to an emotional connection with their home by older people and to overlooking their lifestyle choices (Heywood, Oldman and Means 2002; Heywood 2005, Tanner, Tilse and de Jonge, 2007). In the consumer study, most older people interviewed wished to continue living in their homes due to a combination of strong emotional attachments, the presence of important social and family networks in the local area and factors relating to the ambience, convenience and capacity of the house itself. This confirms the findings of previous studies that emphasise the strong personal

[47] AIHW, Australia's Welfare, 2007, Chapter 3 Ageing and Aged Care, p. 73.
[48] AHURI: Jones, Desleigh de Jong and Phillips, 2008, 'The impact of home maintenance and modification services on health, community care and housing outcomes in later life', p. 2.
[49] AHURI: Jones, Desleigh de Jong and Phillips, 2008, 'The impact of home maintenance and modification services on health, community care and housing outcomes in later life', pp. 63-64.
[50] ibid, p. 64.

> meaning of the family home, the importance of local connections, and convenience and utility factors (Heywood 2005; Stone 1998)'.[51]

The *Disability Discrimination Act 1992: the Productivity Commission Inquiry Report 2004* concluded:

> 'in 2001, people with disabilities were not significantly more likely than those without disabilities to consider their housing inadequate (table D.2). They were, however, more likely to find their housing needs met 'adequately' rather than 'more than adequately' (p. D.12).

These findings are consistent with the findings of the AHURI research that environmental problems in housing continue to remain unreported by older people and their families.[52]

The range of data support a number of conclusions of relevance to this RIS:

- there is significant unmet need for housing with accessibility features among people with a disability;
- home modification programs are expensive and are not extensively utilised by people who have a disability or are ageing;
- living in an unmodified home does not preclude satisfaction with housing as there is a strong desire to remain in one's home; and
- the majority of the homes of people who are aged are unmodified, have environmental (slip and trip) hazards and are not ideal for 'ageing in place' or returning home after hospitalisation.

The knowledge base concerning visitability, adaptability and accessibility is much higher than in past years

In 2005, the Victorian Minister for Planning established an Accessible Housing Taskforce to provide advice on non-regulatory and regulatory options for increasing the stock of housing that is accessible and adaptable. In 2006, the Taskforce made a number of recommendations to the State Government relating to accessibility and adaptability. The Taskforce process informed the present RIS. The Taskforce's recommendations are summarised in Box 1.4.

[51] AHURI: Jones, Desleigh de Jong and Phillips, 2008, 'The role of home maintenance and modification services in achieving health, community care and housing outcomes in later life', p. 126.
[52] AHURI: Jones, Desleigh de Jong and Phillips, 2008, 'The impact of home maintenance and modification services on health, community care and housing outcomes in later life', p. 63.

Box 1.4: Summary of the recommendations of the Accessible Housing Taskforce

The Taskforce recommended the following initiatives to achieve an increase in the quantity of dwellings that can be easily accessed and cost-effectively modified:

1. A Guideline and supporting technical information *[The Government has released the 'Build for Life' Guideline and design template]*;
2. An education and awareness campaign *[The Government has launched the 'Build for Life' awareness campaign comprising the website, media and events]*;
3. Basic low to no cost accessibility features to be made mandatory through the Victoria Planning Provisions to certain dwellings in multi-unit developments. (This recommendation was not supported at the time by building industry representatives). *[The Government has decided to support the low to no cost features as a proposed variation to the BCA, rather than an amendment to the Victorian Planning Provisions];*
4. An access rating system that can be used to ascertain the accessibility of a dwelling *[The 'Build for Life' Guideline outlines the access standards and the rating system will be developed following the outcome of the RIS]*;
5. Financial incentives to include higher levels of accessibility in new single housing and in multi-unit developments and linked to the access rating system. (This recommendation was supported by the disability advocacy organisations subject to implementation of recommendation 3 and to be used for achieving access above the minimum set by regulation). *[One of the criteria the Commonwealth Government has applied when assessing social housing proposals for the Nation Building – Economic Stimulus Plan will be the adherence to universal design standards. As part of the 'Build for Life' campaign the Victorian Government is promoting the access standards through industry Homeshows]*;
6. Promotion of the benefits of accessibility features though networks and partnerships *[The 'Build for Life' campaign is supported by professional bodies and community organisations who are assisting with providing information to industry and consumers]*; and
7. Monitoring the performance of the initiatives to indicate progress utilising existing systems where possible. *[The Building Commission is developing an evaluation framework that will enable ongoing evaluation of the effectiveness any regulatory BCA amendments]*.

In addition to the work of the Taskforce and the VCEC Inquiry into Housing Regulation, there has been considerable research and public discussion concerning accessible housing in recent years. Key analyses and references of relevance to the RIS include:

- The Commonwealth Government's Nation Building – Economic Stimulus Plan, which has as one of the criteria that newly funded social housing projects to be built to universal design standards;

- The Victorian Building Commission's publication 'Welcome: Design Ideas for Accessible Homes' (2002) and the 'Build for Life' information website (2008) based on the publication;
- The Victorian Building Commission's 'Build for Life' industry design template, distributed to all registered building practitioners in December 2008;
- Victorian Council of Social Service (VCOSS) discussion paper on universal housing regulation in Victoria, Universal Housing Universal Benefits, 2008;
- Victorian Competition and Efficiency Commission (VCEC), A State of Liveability: An Inquiry Into Enhancing Victoria's Liveability, Draft report, 2008, pp xlv & 111. (The draft report noted that Victoria's liveability could be enhanced through improving urban design policies; the report did not explicitly refer to adaptable or accessible housing);
- The Building Commission's Accessible Built Environment Working Group (2001-03);
- Research by the Australian Building Codes Board (ABCB) and the Building Commission on the supply of accessible housing and the range of interventions the government could consider if the current supply is insufficient;
- UK Joseph Rowntree Foundation, Cobbold, 'A cost benefit analysis of Lifetime Homes', (1997);
- UK 'Lifetime Housing, Lifetime Neighbourhoods' strategy (2008) (includes the universal Lifetime Homes Standard);
- Queensland Office of the Public Advocate Issues Paper 'Housing Design for All: Universal Housing Design in Queensland' (2005);
- New South Wales Landcom 'Universal Housing Design Guidelines' (2008);
- Australian Human Rights and Disability Discrimination Commissioner's open letter 'Body Corporate Responsibilities in relation to the Disability Discrimination Act' (2008);
- Australian Network for Universal Housing Design 'Homes for Living' information website on universal housing;
- Australian Standard 4299-Adaptable Housing and Australian Standard 1428.1-2001 Design for Access and Mobility Part 1 General requirements for access – New building work; and
- 'The relationship between slips, trips and falls and the design and construction of buildings', Monash Accident Research Centre, Report number 281, 2008 (study commissioned by the Australian Building Codes Board).

In 2005, the Victorian Parliamentary Outer Suburban Interface Services Development Committee completed its inquiry into sustainable urban design for new communities in outer suburban areas, and recommended that the government:

- give consideration to inclusive and accessible design to bring Victorian housing regulation standards in line with UK standards for housing in relation to visitability; and
- investigate the economic and social viability of incorporating Australian Standard 4299-Adaptable Housing into the Building Regulations as a requirement for all new homes in Victoria; and
- determine the economic and social viability of making future public housing stock accessible and adaptable. (sub.75, p.8)

The UK standards for housing (*Building Regulations 2000: Access to and use of buildings – 2004 Edition*) require visitable access to all ground floor dwellings, including new single dwellings and upper storey dwellings where they are serviced by a lift. These or similar standards have been in place since the 1990s. The requirements are to enable people with a disability to use a toilet in the principal storey of a new dwelling and to enable occupants with disabilities to cope better with reducing mobility and to remain longer in their own homes. The requirements are similar to the four features and a target is set to achieve the Lifetime Homes Standard (similar to universal housing) by 2013 or the Government will extend the Regulations.

The national *Disability Standards for Access to 200X (consultation draft 2004)* and the Schedule 1 *Draft Access Code for Buildings* (Section 1.3.) canvassed for common areas in Class 2 buildings (where one or more sole-occupancy units are made available for short term rent) [53] the following requirements:

> From a pedestrian entrance required to be accessible, to the entrance doorway of each sole-occupancy unit located on not less than one level.
>
> To and within not less than 1 of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, individual shop, eating area, or the like.
>
> Where a ramp complying with AS 1428.1 or a passenger lift is installed-
>
> (i) to the entrance doorway of each sole-occupancy unit; and

[53] 'Sole-occupancy unit' refers to a dwelling within a larger building, for example an apartment within an apartment building. Sole-occupancy unit in the BCA *means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant , or other occupier and includes (a dwelling).*

(ii) to and within rooms or spaces for use in common by the residents located on the levels served by the lift or ramp.

The national draft *Disability (Access to Premises – Buildings) Standards 2009* released for public consultation in 2009 replaced the 2004 *draft Disability Standards for Access to Premises 200X*. No provisions for Class 2 buildings were included in the 2009 standards.

Summary of rationale for intervention

The rationale for visitability and adaptability features in housing is summarised in Box 1.5.

Box 1.5: Summary of the rationale for visitability and adaptability features

Health and safety:

- People's mental wellbeing is enhanced by social interaction and independence.
- People in accessible housing can be safely removed from a dwelling or apartment building by emergency services.
- Reduced risk of injuries and deaths due to falls caused by slips and trips and other hazards, particularly by children and older people.
- Community cost savings from reduced healthcare costs including shorter stays in hospitals and rehabilitation centres.

Human rights and equity:

- People are not unfairly excluded from social participation and work conducted in private homes.
- People are able to live and participate in the community with dignity.

Social capital and economic growth:

- Greater community involvement and interaction from increased accessibility contributes to a prosperous, liveable community.
- Visitability enables people with impaired mobility to make a stronger economic contribution through work.
- Reduced need for wasteful retrofitting and unnecessary relocations.

Risks of not intervening

The issue to be addressed is primarily one of equity, though there are also significant safety, efficiency and amenity dimensions. The principal risks of not intervening to address the problem are as follows:

- social welfare (or social wellbeing) will be reduced because the wider social costs from inaccessible, unvisitable and unadaptable housing will not be addressed;
- people will continue to be excluded unfairly from participation in social life, work and housing;
- people will be exposed to the safety risks of more falls in the home;
- it would be more difficult for emergency services to evacuate a person in a medical emergency; and
- more people will have to leave home to be cared for in a hospital or institutional setting, and will not be able to return home as quickly.

Accessible housing features would generate benefits for all Victorians:

- As people age, their demand for accessibility and adaptability features increases. While the incidence of disability is about 20 per cent of Victorians, it exceeds 50 per cent for people aged 60 years or over. [54] Health care costs and relocation costs would be lower if people were more able to 'age in place'. Ageing in place has other health and wellbeing benefits for the individual and benefits for society.
- A large proportion of the population have limited mobility but do not identify as people with disability. In particular, many Victorians suffer from arthritis, diabetes, stroke and acquired brain injury. As a result of these conditions, these people would benefit from homes which have accessibility features.
- Accident victims with temporary restrictive injuries would benefit from greater accessibility.
- People with vision impairments are assisted by some accessibility features, such as level entrances.
- In the event of a fire or other emergency, emergency services personnel are better able to achieve timely access to homes that have accessibility features.
- Families with children who use prams and strollers benefit from level entrances, wider passageways and wider doorways.
- Other advantages for the general population include greater housing quality and general amenity in everyday activities such as carrying shopping, furniture and other things into the home.

[54] DPCD, based on ABS, Disability, Ageing and Carers 2003/04, Cat. No. 4430.0.

The Review of the *Disability Discrimination Act 1992: the Productivity Commission Inquiry Report 2004* found that rates of ageing and disability in Australia will more than likely increase:

> 'Given that Australians are living longer than ever before and, on average, older people tend to have a higher rate of disability than that of younger people, the overall disability rate is likely to continue to rise. The rate at which the overall disability rate is likely to change is, however, difficult to estimate. Disability rates within age categories may change in the future. Disability rates have fallen in older age categories in some OECD countries (AIHW 2003a), with factors such as improved medical interventions and behavioural change possibly contributing to these trends (Cutler 2001; Manton and Gu 2001). These factors are likely to have benefited Australia also. As people live longer, the number of disability years might remain constant but be shifted to later years….Nonetheless, the ageing population tends to suggest that, overall, an increasing proportion of the Australian population will have disabilities in the future. But the rate of increase may be mitigated by the factors highlighted above.' (p. 39-40)

AHURI research indicates that the prevalence and severity rates will increase:

> 'Although there is evidence within some OECD countries, of a decline in disability prevalence for the older age groups, Mather (2007) suggest that at present there is no clear evidence of this trend in Australia. He notes that even if age specific rates were to fall over the next 10-20 years it is likely that prevalence and severity rates will increase with the ageing of the population as a higher proportion of the population will be in the oldest age groups where disability levels are higher. Health and disability therefore are likely to exert a considerable influence on housing decisions.' [55]

Tables 1.4 and 1.5 below show that the number of people with a disability or mobility limitation has grown in recent years and is projected to continue to grow. At present, 19.1 percent of Victoria's population is aged over 60. This figure is expected to rise to 22.8 per cent by 2020, and to over 25 per cent by 2030.[56] As noted above, one key effect of population ageing is that people are forecast to live with a disability or mobility limitation for a longer period. (The AIHW analysis did not include data for moderate and mild activity limitations, which are also relevant to accessibility features and which affect a much larger number of people.) Table 1.6 below shows the significant number of people with a moderate or mild disability limitation in Victoria.

[55] AHURI: Andrew Beer and Debbie Faulkner, 2009, 21st Century Housing Careers and Australia's Housing Future.
[56] Source: DPCD population projection data.

Table 1.4: Projected state-by-state population of persons aged 0–64 years with a severe or profound core activity limitation 2006–10 ('000)

	2006	2007	2008	2009	2010
NSW	238.9	241.7	244.6	246.9	249.0
Vic	175.6	177.7	179.8	181.5	183.2
Qld	141.6	144.4	147.3	149.8	152.1
WA	71.9	73.1	74.3	75.4	76.4
SA	53.5	53.8	54.2	54.4	54.5
Tas	16.8	16.8	16.9	16.9	16.9

Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers confidentialised unit record file.

http://www.aihw.gov.au/publications/dis/cafdfsds/cafdfsds-c06.pdf

Table 1.5: Projected state-by-state population of persons aged 65 years and over with a severe or profound core activity limitation 2006–10 ('000)

	2006	2007	2008	2009	2010
NSW	216.8	222.8	228.7	235.2	241.9
Vic	159.7	164.5	169.3	174.4	179.7
Qld	110.9	115.2	119.5	124.3	129.4
WA	54.3	56.4	58.5	60.7	63.1
SA	56.6	58.0	59.5	61.0	62.5
Tas	16.3	16.8	17.2	17.7	18.2

Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers confidentialised unit record file.

http://www.aihw.gov.au/publications/dis/cafdfsds/cafdfsds-c06.pdf

The Core Activity Need for Assistance variable has been developed to measure the number of people with a profound or severe disability. The ABS 2003 Survey of Disability, Ageing and Carers and the 2006 Census of Population and Housing defines the profound or severe disability population as: 'those people needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication, because of a long-term health condition (lasting six months or more), a disability (lasting six months or more), or old age'.

Table 1.6: Number of persons with a moderate or mild core activity limitation in Victoria ('000)

Age Group	Moderate core-activity limitation	Mild core-activity limitation
0-64	100.5	144.5
65 years and over	69.6	117.4
Total	**170.1**	**261.9**

Source: ABS, Disability, Ageing and Carers 2003-04. Cat. No. 4430.0.

While Victoria does not have the highest rate of disability and aged-related disability (it is second to New South Wales) the number of Victorians who are affected by the lack of visitable and adaptable features in housing is significant. In Victoria, the population of people with a severe or profound core activity limitation is projected to number 362,900 people in 2010. In addition there is the group of people with a moderate or mild core activity limitation which numbered 261,900 people in 2003-04. (see Tables 1.4 to 1.6) People who use aids or equipment[57] would directly benefit from accessibility features due to the mobility limitations caused by a disability, or long term injury or illness. The estimated number of relevant households is 155,000. However, DPCD notes that almost every home in Victoria will be used at some time by a person who will raise infants, have a disability (temporary or long term) or will age in their home. This is broadly consistent with United States research that there is a 91 per cent probability that a newly built dwelling will have at least one resident or visitor with a disability during its lifetime. [58]

Low impact of other factors on future trends

Changes in other factors, such as advances in technology and government information on accessible design, are expected to have a minimal impact on the growing need for accessibility standards in housing in Victoria.

Notwithstanding technological advancements in the design of mobility aids and wheelchairs (including stair climbing and high-reaching models), these devices would still require interior accessibility features to be manoeuvrable within a home. Technological solutions may overcome the need for a clear path to the entry, but wider doorways and passages and larger toilet areas would still be necessary to accommodate advanced wheelchairs.

[57] People who use aids and equipment are a proportion of the group who have a mild core activity limitation. Australian Bureau of Statistics, 14 July 2009.
[58] Smith, Rayer and Smith, 2008, Aging and Disability: Implications for the Housing Industry and Housing Policy in the United States, Journal of the American Planning Association, p 301.

In the *Housing Regulation in Victoria Building Better Outcomes 2005*, the VCEC suggested that with the serious implications for our ageing population, the market may respond to government information on accessible design:

> 'with the generally elevated seriousness of disability and ageing trends, further useful progress could be achieved with an information plan coordinated by the Building Commission. VicUrban noted it would support action to achieve demonstration projects and market promotion of material that will improve industry and public awareness of the value of accessibility or adaptability features in new homes (sub. DR129, p. 3). This information could assist in promoting the value of accessibility or adaptability features, and thus provide an incentive to include these features in a dwelling. With extra demand arising from population ageing, the market might be expected to develop such informational characteristics in time.' (p. 124)

While providing information through the 'Build for Life' campaign and the VicUrban demonstration projects is a responsible action by government to the projected rate of ageing and disability in Victoria, its is likely that information will have a limited impact on design decisions; this will result in higher costs through the need for more home modifications and longer stays in hospital and/or institutional care.

2. OBJECTIVES OF GOVERNMENT INTERVENTION

Key points

- The primary objective of government intervention is to achieve the Government's policy commitment to ensuring that people with a disability or limited mobility will not be excluded from participating in social life and work. This commitment is based on principles of equity and fairness, but also recognises that the whole community benefits socially and economically when all its members are able to participate and contribute.
- The secondary objective is to provide the means to realise the primary objective, by ensuring that a significant proportion of private dwellings are visitable and adaptable for people with a disability or a mobility limitation that is either temporary or ongoing.
- Achieving wide adoption of a minimum set of visitability and accessibility features would achieve a range of benefits outlined below and in the previous section. In addition, they would provide a 'baseline' such that current home-modifications programs would supplement the minimum in order to meet individual needs.

The minimum visitability and adaptability features are:

- a clear path from the street (or car set-down/park) to a level entry;
- wider doorways and passages;
- a toilet suitable for people with limited mobility on the entry level; and
- reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later.

The Victorian Government's policy commitment

The Victorian Government has made a policy commitment to ensuring that people with a disability or mobility limitation that is either temporary or ongoing, will not be excluded from participating in social life and work. This commitment is based on principles of equity and fairness, but also recognises that the whole community benefits socially and economically when all its members are able to participate and contribute. The primary objective of the proposed intervention is to support the achievement of this policy goal.

The primary objective is to achieve the Government's policy commitment to ensuring that people with a disability or limited mobility will not be excluded from participating in social life and work. This commitment is based on principles of equity and fairness, but also recognises that the whole community benefits socially and economically when all its members are able to participate and contribute.

In light of the primary objective, the secondary objective of government intervention is to ensure that all new single dwellings and a significant share of high density housing (defined in the Summary of Key Findings) meet minimum standards of visitability and adaptability for people with limited mobility.

The secondary objective is to provide the means to realise the primary objective, by ensuring that a significant proportion of private dwellings are visitable and adaptable for people with a disability or a mobility limitation which is either temporary or ongoing.

Achieving wide adoption of a minimum set of visitability and accessibility features would achieve a range of benefits outlined below and in the previous section. In addition, they would provide a 'baseline' such that current home-modifications programs would supplement the minimum in order to meet individual needs.

The minimum visitability and adaptability features are examined in detail below. In brief, they are:

- a clear path from the street (or car set-down/park) to a level entry;
- wider doorways and passages;
- a toilet suitable for people with limited mobility on entry level; and
- reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later.

Rationale for focusing on new homes

The focus of the intervention is on new housing because:

- the cost of altering the design of new homes up-front is low to negligible, while the cost of altering existing homes is high (see the costs in Tables 4.2 and 4.4);
- a large number of new homes (detached dwellings and apartment buildings) are built each year, so the cumulative impact on housing options for people with limited mobility is expected to be significant over time; however the community benefits, including participation benefits, are also expected to be significant in

the shorter term. To accommodate the projected population increase, 600,000 new households will be required in Melbourne by 2026[59];

- the focus on new homes is an appropriate way to phase in accessibility features into a large share of the housing stock; and
- this focus will achieve a geographically diverse impact. Many new homes are being built in Melbourne's outer growth areas and major regional centres. However, in line with the Victorian Government's 'Melbourne 2030' strategic framework and 'Melbourne 2030: a planning update Melbourne @ 5 million' it is projected that established areas will accommodate a significant share of new dwellings. This is particularly the case in relation to infill dwellings, apartment buildings and other high and medium density housing.

The four features entail low costs and offer high accessibility benefits

Work has been undertaken across the State Government to identify the appropriate set of minimum standards for housing accessibility. The key considerations in identify this minimum set were:

- identifying features that would achieve a reasonable and practical level of accessibility;
- identifying the minimum set of changes, so as to minimise the scope of intervention; and
- identifying changes that could be achieved at minimal or no cost to the housing sector, home buyers and government.

As a result of these considerations, the following set of minimum features were identified. The proposed scope of the features is set out in Table 2.1. The number of homes affected each year is estimated to be 35,727 (see Table 2.2).

Feature 1: A clear path from the street (or car set-down/park) to a level entry (visitability and adaptability)

Class 1	Clear path of travel from the street boundary or car set-down area or car parking space; minimum clear width of 1 metre[60]; continuous, firm and slip

[59] DPCD Factsheet, Victoria in Future 2008 – population projections.

[60] Industry and the community sector have indicated the benefits of consistency with the Australian Standards. Therefore DPCD have increased the proposed dimensions to be consistent with the relevant Australian Standard for housing. The quantity surveyor, Davis Langdon has confirmed the cost estimates for the proposed features, as the estimates initially costed the path being 1 metre wide and doors being 870mm wide, which the Australian Standard indicates allows for an 820mm clear opening width.

	resistant; slope not steeper than 1 in 20; crossfall not more than 1 in 40; ramps (landings required, no handrail required) must not have a slope steeper than 1 in 14. One entrance doorway must have a level threshold (may be any entry). Prevention of water inundation at the entrance achieved with a porch and graded landing; depending on the building orientation, a door seal may be required. This feature would eliminate steps on the pathway from the allotment boundary or driveway to the front door. The feature would only apply 'where reasonably practicable'. It would not apply to allotments whose average natural slope was steeper than 1 in 14.
Class 2	Traversable path of travel from the street or car parking; same as for Class 1 except that the minimum clear width for Class 2 would be 1.2m. If adequate car parking is not provided on grade, an accessible pedestrian ramp must be provided from the underground car parking. Car park pedestrian ramp grades must be between 1 in 14 and 1 in 20. The building entrance doorway must have a level threshold. For Class 2 high-rise buildings with lifts, the lifts must be accessible and passing/turning spaces must be provided in common corridors at 20m intervals. These requirements are consistent with the extent of access ways for BCA Class 2 buildings in the 2004 *draft Disability Standards for Access to Premises 200X* (document undated until implemented).

Note: Current practices under the *Building Act 1993* suggest an approach to the path requirement, which would not incur costs for builders as a result of delayed final payments.

The clear path of travel to the level entry is not something that would delay the issue of the occupancy permit, as it is not a safety or habitability item.

Where a dwelling is complete, building surveyors could deal with non-completion of the path, in the same manner as they deal with non-completion of other items that are required under the legislation and are not safety or habitability items, for example, energy efficiency measures. The relevant building surveyor can issue the occupancy permit subject to a suitable condition or issue a building notice, or building order for minor work, or notice at the time of the final certificate of inspection, served on the building owner, who is responsible for providing the path.

In the case where the path was included in the builder's contract, it would be reasonable that the builder complete the path, before claiming the final payment.

Feature 2: Wider doorways and passages (visitability and adaptability)

Class 1	The entrance doorway and internal doorways to entrance-level living, dining, bedroom, bathroom, kitchen, laundry and toilet areas would have a minimum clear opening width of 820mm. There would be no changes in level between these areas. Passageways, which include the required wider doors, would have a minimum width of 1m. The clear opening width of 820mm for doorways translates into door widths of 870mm, which is marginally wider (50mm or 5cm) than the current standard width of 820mm. The passageway width of 1m is already standard for entry halls. This is

	marginally wider than the standard width of passageways to bedrooms which is 900mm. A wider passage can be achieved by minor changes in wall locations.
Class 2	The building entrance doorway and the entrance doorway to each ground floor sole-occupancy unit in medium density housing, with no lift and every entrance doorway to required sole-occupancy units in high-rise apartment buildings, with a lift would have a minimum clear opening width of 820mm. Wider doors would also be required in each type of area in common use by residents, such as a laundry, gym or meeting room. Common area corridors, which include the required wider doors, would have a minimum width of 1m, which is currently a BCA requirement. Within each ground floor sole-occupancy unit in medium density housing, with no lift and 20 per cent of sole-occupancy units in high-rise apartment buildings, with a lift, the entrance-level doorway and level passageway requirements are the same as for Class 1. These common area access requirements are consistent with the extent of access ways for BCA Class 2 buildings in the 2004 *draft Disability Standards for Access to Premises 200X*.

Feature 3: A toilet suitable for people with limited mobility on entry level (visitability and adaptability)

Class 1	A toilet suitable for people with limited mobility must be included on the entry level. Where a toilet is located between walls (such as in a separate toilet compartment), those walls must have a minimum clear width of 900mm. The toilet compartment must have at least 1.2m between the front of the pan and any part of a door. Where a toilet is located within a bathroom, the toilet must be in a corner.
Class 2	Within each ground floor sole-occupancy unit in medium density housing, with no lift, and 20 per cent of sole-occupancy units in high-rise apartment buildings, with a lift, the requirement for an entrance-level toilet is the same as for Class 1. For each type of space for use in common by residents (such as a gym) if there is a sanitary facility, at least one facility must be unisex accessible.

Feature 4: Reinforced bathroom and toilet walls (adaptability)

Class 1	Noggings would be installed to accommodate the future fitting of grab rails to the walls of the entry level toilet, a shower and bath. (Structural sheeting would be permitted as an alternative: the minimum requirement would be 12mm structural sheeting fixed to studs.) The extent of reinforcement is based on standard requirements suitable for

	people with limited mobility.
Class 2	Within each ground floor sole-occupancy unit in medium density housing, with no lift, and 20 per cent of sole-occupancy units in high-rise apartment buildings, with a lift, the requirement for reinforcement is the same as for Class 1.

Table 2.1: Scope of proposed new accessibility features

Features	**Class 1 (Single house)**	**Class 2: Low rise, no lift**	**Class 2: High-rise with lift**
1. Path of travel to entrance Continuous slip resistant, traversable path from the street or, car parking to a level entry.	✓	✓	✓ (typical industry standards comply)
Ramp grades must be between 1 in 14 and 1 in 20.	✓ (site slopes between 1 in 14 and 1 in 20)	✓ (site slopes between 1 in 14 and 1 in 20)	✓ (car park pedestrian ramp)
Lifts must be accessible and passing/turning spaces must be provided in common corridors at 20m intervals.	NA	NA	✓ (current lift industry standards comply)
Prevention of water inundation at the entrance threshold achieved with door seal.	✓	✓	✓ (typical industry standards comply)
2. Doorways and passage and common corridor width Minimum clear opening of 820mm.	✓	✓	✓
Minimum passage width of 1m between walls and no change of level between required doors.	✓	✓	✓
3. Toilet access A toilet suitable for people with limited mobility must be included on the (dwelling) entry level.	✓	✓	✓
If provided, one sanitary facility in each type of space for use in common by residents must be accessible.	NA	NA	✓
4. Reinforced bathroom and toilet walls	✓	✓ (sole-occupancy	✓ (sole-occupancy

		units)	units)

Table 2.2: Number of homes that would incorporate the four accessbility features each year

Single Houses (Class 1) [1]	34,651
Medium Density (Class 2) [2]	464
High-Rise (>4 storeys) (Class 2) [3]	612
Total	35,727

Source: Spatial Analysis and Research, DPCD. (1) Excludes Class 1b boarding/guest houses and hostels. (2) All ground floor medium density dwelling units. Estimate 40 per cent of total approved 1159. (3) 20 per cent of high-rise dwellings. Estimate of total approved 20 per cent of 3060.

Discussion of the proposed four features

The four features are minimal in nature. The features do NOT include mandatory standards relating to:

- disabled parking;
- entry lighting, external lighting and internal lighting;
- fully wheelchair accessible kitchens, laundries, bathrooms or toilets;
- switches and power outlet locations;
- window sill heights and light switch heights;
- slip-resistant flooring indoors; and
- load bearing walls located adjacent to stairs for the future fitting of a stair lift;
- a sheltered entry.

In its 2005 Housing Inquiry, the VCEC noted that if Victoria were to introduce mandatory accessibility standards unilaterally, there was the risk that the requirements would not be replicated in the other jurisdictions. The VCEC argued that Victoria might then forgo the benefits of a national approach, including economies of scale in materials and standardised designs, and the development of knowledge and skills.

In the case of above-minimum standards of accessibility, the VCEC was right to point out that such benefits could be substantial. However, in the case of the proposed four minimum features of visitability and adaptability, the costs of unilateral action are likely to be low to negligible, because:

- the proposed visitability and adaptability features do not require specialised parts, fittings or materials;
- the proposed visitability and adaptability features involve designs that are already in use in Victoria's housing construction sector. Making the features more widely adopted in Victoria would increase economies of scale in their application, rather than reduce economies of scale;
- the knowledge and skills base required to apply these features already exists in Victoria and is already being used in the broader construction industry. This includes both the design of accessibility features and the application of those features;
- even if the other states were not to follow soon, the proposed minimum standards will still allow local builders to innovate and to benefit from future changes to national standards;
- the other states are considering adopting accessibility features. The minimal nature of the four proposed features means they are likely to be adopted as part of any future moves by other jurisdictions to improve accessibility; and
- if the features were adopted in a standardised way in Victoria, other states and territories would be able to adopt the standard.

The net benefits of the four features are likely to be higher in Victoria than in other states on average, due to the relatively flat topography of most established areas and growth areas in Victoria, compared in particular with some important growth areas in Queensland and NSW. Many Victorian development sites in Melbourne's growth areas are available with a less than 1 in 14 natural slope (see Table 2.3). The Government's policy objective is that the level path feature would not be required on sites steeper than 1 in 14. On such sites, an exemption would apply to the clear path of travel from the street, or car parking to a level entry requirement.

Table 2.3: Melbourne metropolitan growth areas – Sloping sites (steeper than 1 in 14)

Growth corridor	Housing numbers in corridor	Proportion in area of sloping sites (per cent)
Casey-Cardinia	1,447	0
Wyndham	1,093	0
Melton-Caroline Springs	510	4
Hume	282	1.5

Source: Building Policy, DPCD.

Stakeholder comments are invited on the nature and extent of the four proposed features.

3. OPTIONS TO ACHIEVE THE OBJECTIVES

Key points

- There are a number of non-regulatory and regulatory options for achieving the objective.
- The set of viable options comprises: a public information and education campaign; a self-regulation regime; two government regulation options; and a subsidy scheme.

This section describes the viable non-regulatory and regulatory options for achieving the objective set out in section 2. The *Subordinate Legislation Act 1994* (section 10(1)(c)) requires that non-regulatory options must be considered as part of a RIS.

A preliminary analysis of the various options was undertaken to identify viable options and to eliminate those options that were clearly inappropriate or unworkable. In this analysis, consideration was given to factors such as enforceability, compliance and cost implications.

The option of regulation at the local government level was considered. A number of Victorian councils have already sought to establish accessible housing laws, such as through planning scheme amendments. In its 2005 Housing Regulation Inquiry report, the VCEC noted: 'Where there is no effective regulation to establish standards for accessible or visitable private dwellings in Victoria, or where there is no prospect of any imminent improvement, some local governments have sought to introduce planning scheme amendments that reference Australian Standards on accessibility to housing'.[61] In a submission to the Inquiry, Robert Knott noted: 'These well-intentioned efforts [by local governments] are to be commended but are, by their nature, parochial and disparate in content. These matters should more appropriately be addressed by the state government to achieve state-wide consistency of policy' (VCEC Housing Inquiry, submission 37, p. 2).

VCAT has opposed local councils seeking to achieve building outcomes through planning powers where those outcomes are covered by building regulations (Hasan v Moreland CC [2005] VCAT 1931). VCEC in its Inquiry report expressed 'doubts that the piecemeal approach by local government regulation is an efficient or effective path for improving the level of accessible, visitable and adaptable private housing, and thus the approach is unlikely to be in the best interests of Victoria'.

[61] VCEC, 2005, Housing Regulation Inquiry report.

The assessment undertaken in this RIS concurred with the VCEC and concluded that the option of local government regulation of accessibility was unviable. The following potential options were also assessed as unviable:

- 'Increased enforcement' is not a viable option because, at present, the BCA does not include accessibility features for private dwellings and the planning system does not provide for enforcing features relating to building design.
- 'Extending the coverage of existing legislation' at the State level is not a viable option as there are at present no relevant legislative instruments in place for accessibility, adaptability and visitability in Victoria.
- 'Removing other legislative impediments' is not a viable option because the issue to be addressed is not the result of legislative impediments.

Five options were assessed as viable:

- Option 1: Informing and educating consumers and industry participants via a public campaign;
- Option 2: Industry self-regulation;
- Option 3: Government regulation: minimum levels of visitability and adaptability;
- Option 4: Government regulation: above-minimum levels of visitability and adaptability; and
- Option 5: Market-based instruments (tax and subsidy scheme): minimum levels of visitability and adaptability in new homes.

The five options are described in more detail below, and the costs and benefits of the options are analysed in the following section.

Option 1: Informing and educating consumers and industry participants

This option would involve a multifaceted campaign to inform and educate participants in the housing sector, including builders, designers and home purchasers, about the value of accessibility, visitability and adaptability features in housing. As programs already exist to inform consumers and industry participants about accessibility, such as the 'Build for Life' awareness campaign, this option would build on those existing programs. This option would also seek to input into the knowledge base on the amount of housing that includes accessibility features. For example, a web directory to assist people to find homes and apartments which meet their accessibility needs would be included in the campaign.

The Option 1 campaign would feature printed information materials, participation in industry events, and electronic media advertising. The campaign would run for one year and would have the following features:

- common branding of all the elements of the visitable and adaptable housing campaign to create presence and coherence;
- a media strategy focused on daily, electronic, specialist (industry), suburban, regional and stakeholder media, using approaches including booked advertising, radio media releases and shell media releases;
- online communications and information provision via a campaign website and web directory;
- recruitment of champions from industry and a variety of fields who will appeal to media and help build buy-in;
- consumer and industry focused collateral and resources;
- media and stakeholder events; and
- presence at home shows and other industry events.

Option 2: Industry self-regulation

Self regulation – such as through voluntary codes of practice – refers to benchmark actions or procedures, as determined by a particular industry or profession, that are generally acceptable within the group and within wider society. Where firms in an industry or members of a profession have accepted mutual obligations under a regime of self-regulation, these obligations are typically described in a code or industry standards. The relevant industry or profession is responsible for enforcement of the associated standards and rules.

Under a self regulation regime for visitable and adaptable housing, the industry would set standards and establish arrangements for applying and enforcing those standards.

Option 3: Government regulation: minimum levels of visitability and adaptability

This option involves binding minimum standards for each of the four visitability and adaptability features, in order to fulfil the Victorian Government's policy objectives. The scope of the features is outlined in the previous section.

In developing this option, the following principles, from the VCEC and the *Victorian Guide to Regulation*, were applied:

- regulation should be understandable and introduced only after proper consultation;
- regulatory effort should be the minimum necessary given the scale of the problem (and generally should not restrict competition);
- regulation should not be unduly prescriptive;
- regulation should be consistent with other laws and regulation;
- regulation should be enforceable;
- there should be pressures for continual improvement; and
- regulators should be accountable.

Accordingly, this regulatory option is minimal in nature, is not unduly prescriptive, and has been designed with matters of understandability, consistency, enforceability, continual improvement and accountability in mind.

Option 4: Government regulation: above-minimum levels of visitability and adaptability

This option would require new housing to feature higher levels of accessibility, visitability and adaptability than the levels required under Option 3. The following table shows the Option 4 features in comparison with the Option 3 features. The scope of Option 4 would be the same as Option 3.

Table 3.1: Comparison of features under Options 3 and 4: Class 1

Aspect of building	Option visitability and adaptability features (see details of features above for full description)	Option 4 visitability, adaptability and accessibility features (based on the 'Build for Life' silver standard and design template)
Path	Class 1: Minimum 1 metre wide, slip resistant, firm path to level entrance; not steeper than 1 in 20. Class 2: same as for Class 1 except that the minimum clear width for Class 2 would be 1.2m. Car park pedestrian ramp grades must be between 1 in 14 and 1 in 20.	Same as for Option 3 except minimum 1.2m wide slip-resistant path of travel from street for both Class 1 and Class 2 buildings.
Entry	Level entry.	Sheltered entry with threshold no higher than 5mm, except with ramp with maximum gradient of 1 in 8.
Doorways and hallways	Doorways with a minimum clear opening of 820mm. Minimum passage width of 1m between walls	Doorways with 850mm minimum clear opening; 1.2m between walls in hallways with doorways or changes of direction.
Bathroom	Suitable toilet on entry level. Where toilet	Accessible or adaptable toilet, shower and basin

Aspect of building	Option visitability and adaptability features (see details of features above for full description)	Option 4 visitability, adaptability and accessibility features (based on the 'Build for Life' silver standard and design template)
	located between walls, walls must have minimum clear width of 900mm. Where located in a bathroom, the toilet must be in a corner. Toilet compartment in a dwelling must have 1.2m between the front of the pan and any part of a swing door.	at entry level. Minimum 2m by 1m toilet, with demountable wall. Shower and basin area minimum 2m by 2.5m.
Bathroom walls	Noggings to allow future fitting of grab rails.	Same as for Option 3.
Shower	NA	Sheet walls 13mm plywood into studs to allow flexibility for future installation of grab rails.
Kitchen and laundry	NA	Minimum circulation space of 1.55m between benches.
Switches and power outlets	NA (standard heights)	Switches fitted 900mm to 1.1m above floor. Switches and power outlets at least 500mm from corners.
Door handles	NA	D-pull or lever door handles located 900mm to 1.1m above floor.
Parking	NA	Level space minimum width 3.5m for primary parking space.

Option 5: Market-based instruments (tax and subsidy scheme): minimum levels of visitability and adaptability in new homes

Option 5 involves the use of market based instruments, in the form of a tax and subsidy scheme. A tax would be applied to new homes. The tax would be used to fund targeted provision of accessibility features up front in new homes. In practical terms, a differential building levy could be applied. For example, new houses that included the proposed features would be charged a lower levy rate compared to those that chose not to adopt the features (with the latter subsidising the former group).

Under this option the minimum levels of accessibility (outlined in option 3) would be included up-front at the time of designing and building the home for those who decided to adopt the proposed features.

This option would be feasible and relatively straightforward to administer. The effectiveness of this option would vary in relation the differential rate. The concessional rate would be set at a level to encourage the uptake of the four features. However, the overall position of the program would need to get to a revenue neutral position to maintain the building permit levy funding of the Victorian building control system. (The demand for the subsidy to build-in the

features may or may not be balanced by the proportion of people paying a higher levy rate and not building-in the features.)

This option may directly benefit those who currently needed the four accessibility features, and they would pay lower subsidised costs for the four features, as opposed to those who may have a future need, or may live in these houses in the future.

The main and potentially significant drawback associated with the option is that the government's objective of widespread adoption may not be achieved. A lower rate of adoption would also reduce the positive externalities, or community benefits, associated with the proposal because visibility and the number of suitable homes to meet people's changing needs would be affected.

Associated with this, the intergeneration benefits would also be lower compared to the proposal (that is, every new house that does not adopt the features at the building stage will potentially need to be retro-fitted in the future). Those with a future need for the four features may have to pay further higher costs later, to retrofit the four features into their homes, or move to more suitable housing.

Legislative change would be required for the new differential building levy arrangements. The *Building Act 1993* provides for the levying of building permits on the basis of the value of the building work. These levies are used for a number of purposes such as funding the dispute resolution service, Building Advice and Conciliation Victoria and the Building Commission.

4. COSTS AND BENEFITS OF THE OPTIONS

Key points

- This section provides an assessment of the costs and benefits of the viable options identified and described in Section 3. The base case for the options assessment is that the existing Building Code of Australia provisions would remain in force.
- The options would principally affect the community as a whole, and the following groups within the community: people with a disability or other ongoing or temporary mobility impairment; families, friends and carers of people with limited mobility; participants in the building industry including developers, builders, building designers, architects, engineers and building surveyors; home buyers; and government agencies.
- The principal costs arising from each of the options relate to the additional construction costs associated with the set of minimum visitability and adaptability features. Other costs relate to implementation and adjustment and the opportunity cost of the space required to accommodate the proposed features.
- The principal benefits relate to the benefits of widespread visitability and adaptability (including equity and dignity benefits), reduced healthcare costs, and benefits arising from improved housing quality and amenity.
- The option that applies minimum standards of visitability and adaptability through regulations (Option 3) was assessed as yielding the greatest net benefit to the community.
- The annual direct financial cost of the preferred option is expected to be $30.8 million, plus one-off adjustment and implementation costs of $0.85 million in the first year, and ongoing enforcement costs of $0.34 million per year.
- The value of the quantified benefits of the features is estimated to be $5.4 million. This estimate excludes the unquantified benefits of reductions in hospital stays, greater safety and amenity, better quality homes and ageing in place. This estimate also excludes unquantifiable participation benefits.
- Over ten years, the estimated NPV (3.5 per cent discount rate) of the quantified benefits is $44.9 million, and the estimated NPV of the costs (including one-off implementation costs and ongoing enforcement costs) is $259.8 million. There are quantifiable benefits that have not been quantified because there is no collected data, such as the actual cost of delays to stays for some patients in

rehabilitation care because of inaccessible housing. Taking into consideration the unquantified benefits and in particular the significant unquantifiable participation and equity benefits, DPCD believes that the benefits of the preferred option would outweigh the costs. The principal impacts on society as a whole would be in the form of lower social costs through safer and more suitable housing; greater equity, dignity and participation for people with a disability or mobility limitation; and greater amenity for people who are raising small children, recovering from an injury, and undertaking a range of day-to-day activities.

Introduction

This section provides an assessment of the costs and benefits of the viable options identified and described in Section 3. The base case for the options assessment is that the existing Building Code of Australia provisions would remain in force. Both quantifiable and non-quantifiable costs and benefits are considered in the analysis. This is important because all material costs and benefits should be considered when intervening in a market. Ignoring significant non-quantifiable benefits, for example, can lead to interventions that are unduly costly for society, or can lead to socially beneficial steps not being taken.

Types of costs and benefits of interventions to achieve visitable and adaptable housing

The costs and benefits of interventions to achieve visitable and adaptable housing were examined as part of the RIS process. The examination of the costs and benefits included consideration of the financial, economic, environmental and social impacts. Consideration was given to the impacts of the costs and benefits on the different groups affected, and the impact on the community as a whole.

The nature and extent of the social benefits of greater visitability, adaptability and accessibility were discussed in the preceding sections. The social benefits are key to the rationale for the proposed four accessibility features. Nevertheless, the features would also involve economic and financial costs and benefits. The principal types of relevant economic and financial costs and benefits are summarised in the following table. The options are not expected to have any significant environmental impacts.[62]

[62] A small environmental benefit may arise from people moving house less often.

Table 4.1: Summary of relevant types of economic and financial costs and benefits

Group	Costs	Benefits
Business	• Costs from changes to production • Compliance and administration costs • Opportunity cost of space	• Improvements in market information • Ability to take greater advantage of economies of scale [for firms that currently build a mixture of accessible and non-accessible housing]
Consumers	• Higher priced housing due to higher construction costs • Opportunity cost of space • Reduced choice in house design (for example, wider doorways and hallways)	• Improved visitability, adaptability and accessibility • Better quality, higher value housing • Safer housing (fewer trips and falls; easier egress and escape in event of emergencies) • More clarity about what features new homes will have • Greater choice for people with a disability or mobility limitation
Government	• Administration and enforcement costs • Program costs (principally for the information and education option, and the tax and subsidy option)	• Improvements in public health and greater ability for people with limited mobility to be at home, resulting in lower costs to the public health system

People likely to be affected by the options

The following groups are likely to be affected by the options:

- home buyers and occupiers (including tenants);
- parents with children;
- people who are aged;
- people with a disability or other form of mobility impairment;
- families, friends and carers of people with a disability or other form of mobility impairment, temporary or ongoing;
- people with a temporary injury or impairment; and

- participants in the construction industry. This includes large developers, small construction firms, building designers, architects, engineers, building surveyors, tradespeople and owner-builders;
- government agencies and regulatory bodies.

The geographic impact would cover the whole of the State of Victoria, and the impact would be particularly concentrated in growth areas such as outer Melbourne, established areas in Melbourne with in-fill development, and major regional centres.

The cost of the four accessibility features

Table 4.2 shows the estimated costs (extra over) of building-in the proposed set of minimal features, if they were designed-in from the start. The estimated costs have been prepared by an independent quantity surveyor, Davis Langdon, based on assumptions developed in consultation with DPCD. Relevant assumptions and data are set out in the notes and Appendix 5. The costs are based on typical industry designs. The incremental building costs are expected to fall over time as visitability and adaptability features become standard. Alternative estimates of costs were sought from the building sector during the consultation undertaken in preparation of this RIS. Relevant information provided on the estimated costs for single houses (BCA Class 1) is included in Appendix 6.

Table 4.2 shows that the estimated costs of designing-in the proposed set of minimal features are clear and quantifiable. The incremental building costs of the features are low: for example, the expected cost of the features (extra over) in a Class 1 dwelling is $870. The incremental cost of some of the individual features is very low: for example, the estimated cost of installing noggings in a bathroom is $50. Compared with the total cost of a home, these costs are not material. They represent less than a third of one per cent of the per-dwelling cost of new Class 1 and Class 2 dwellings, and approximately 1 per cent of the cost of significant dwelling upgrades.

Regarding the alternative estimates of the costs of the four features for single houses (BCA Class 1), one estimate was $480 to $805 and was lower than the estimated cost of $870. Two estimates are higher than the estimated cost, ranging from $1,527 to $2,000. These higher cost estimates assume that extra floor area is required to achieve the wider passage feature and the toilet for people with limited mobility feature. DPCD and the independent quantity surveyor consider it to be possible to accommodate the passage and toilet features within the existing overall building floor area by making minor wall layout changes at the design stage (this is discussed further below). Actual builder's costs could be absorbed through value

management prior to commencing construction. These higher cost ranges are therefore not indicative of the expected cost of the four features. Some designs would result in no additional costs and the quantity surveyor's estimate is an overestimate in those cases. In some dwellings, no additional cost will be incurred where the design of the dwelling incorporates the features. For example, in cases where the design is step free, uses open planning in living areas and bathrooms, and masonry walls, there would be no additional cost. The application of good design principles will often inexpensively provide equivalent outcomes. The Building Commission supports DPCD's assessment that the proposed features would have an insignificant effect on the floor area of dwellings and on the amenity of other areas of a dwelling, as they are minor dimensional adjustments.

Table 4.2: Costs of visitable and adaptable design changes (extra over)

Features	Cost Per Single House (Class 1)	Cost per unit: Class 2: Low rise, no lift	Cost per unit: Class 2: High-rise, with lift
1. Path of travel to entrance 1.1 Minimum clear width of 1metre (Class 1) 1.2 metres (Class 2) continuous, slip resistant, traversable path of travel is required from the street boundary or, private car parking. (An exemption applies for Class 1 dwellings and Class 2 building on allotments whose average natural slope is steeper than 1 in 14). A ramp is required from any required accessible car park building (Class 7 a) associated with a Class 2 building. 1.2 For the path of travel referred to in 1.1, pathways must not have a slope steeper than 1 in 20.	$120 (earth fill to grade path. Path included in total unit cost)	$20 (earth fill to grade path. Path included in total unit cost)	NA
1.3 For the path of travel referred to in 1.1, ramp grades must be between 1 in 14 and 1 in 20.	NA	NA	$170 (car park pedestrian ramp)
1.4 For high-rise (Class 2) lifts must be accessible and passing/turning spaces must be provided in common corridors at 20 metre intervals.	NA	NA	$700 (passing/turning spaces) $0 Lifts (current building standards apply)
1.5 Water inundation at the entrance threshold must be prevented. (achieved with door seal)	$200	$40	$0

Features	Cost Per Single House (Class 1)	Cost per unit: Class 2: Low rise, no lift	Cost per unit: Class 2: High-rise, with lift
2. Doorways and passage and common corridor width 2.1 Minimum clear opening of 820mm.*	$300	$40	$60
2.2 Minimum passage width of 1metre between walls and no change of level between required doors.	$0	$0	$0
3. Toilet access 3.1 A toilet area suitable for people with limited mobility must be included on entry level (Class 1). 3.2 A toilet compartment in a dwelling must have 1.2 metres between the front of the pan and any part of a swing door and 900mm between walls. 3.3 For a toilet located in a bathroom it must be in a corner.	$200 (Sliding door. Re-plan walls and toilet location at no cost)	$70 (Sliding door. Re-plan walls and toilet location at no cost)	$50 (Sliding door. Re-plan walls and toilet location at no cost)
3.4 For Class 2, if sanitary facilities are provided in common areas, one sanitary facility in each type of space for use in common by residents, must be accessible.	NA	NA	$0 (included in common areas)
4. Reinforced bathroom and toilet walls 4.1 Noggings must be installed above finished floor level for the future fitting of grab rails to the walls of the entry level toilet, a shower and bath.**	$50	$20	$20**
Total Extra Over Cost of Features (Items 1-4)	**$870**	**$190**	**$1,000**
Total Unit Cost	$370,000 (includes land, paths and driveway)	$250,000 (includes ground floor unit, path and on-grade parking)	$330,000 (includes lifts and basement car park)
Extra Over Cost of Features as a % of Total Unit Cost	**0.2%**	**0.1%**	**0.3%**

Source: DPCD and Davis Langdon. A typical dwelling cost estimate was used. This is because the four features apply to elements that are generally consistent in size across a range of large and small homes (the ground level hallways and toilet), the area requirements for the four features are similar to current typical areas, and the features may be included by making design changes. A range of floor plans were studied to establish typical hallways and toilet sizes.

Notes: * For houses (Class 1), based on five standard 870mm wide doors comprising one solid core entry door and four internal hollow core doors. Based on an open plan kitchen, meals and living area, wider doorways are required in five locations: the entry and one entry level bedroom and set of wet areas. In sole-occupancy units (Class 2), based on a laundry cupboard and the toilet being located in the bathroom, the entry door is retained and the number of wider internal doors is reduced to two. A wider door is required to the building entry of high-rise (Class 2). For areas in common use by residents in high-rise (Class 2), such as the gym or meeting room, wider doorways are required in three locations.

** Based on no provision of a bath in high-rise sole-occupancy units.

The low-cost of designing the features in up-front is crucial to the rationale for the intervention. The minimum set of features entail low costs because they involve incremental up-front design changes:

- a pathway that is at least 1 metre wide, slip-resistant and firm from the street or, car parking, is a minimal incremental design requirement. Most pathways are already this wide and are firm and flat. To achieve slip resistance, a variety of surface types would be acceptable. Importantly, the requirement would only apply where a path of travel can be achieved on a natural slope less than 1 in 14;
- similarly, the requirement to have no steps on the pathway from the allotment boundary or driveway to the front door would have limited application: it would only apply 'where reasonably practicable', and only to flat or nearly flat allotments (ie. natural slope less than 1 in 14);
- the need to adopt additional measures to prevent water inundation would be of limited application as most porches have weather protection;
- the clear opening width of 820mm for doorways translates into the standard door width of 870mm, which is marginally wider (5cm) than the current standard width of 820mm;
- the requirement that there be no changes in level between the entrance-level living, dining, bedroom, bathroom, kitchen, laundry and toilet areas would have limited impact as most houses do not have a change of level on the entry level;
- the required passageway widths would be equivalent to current standard widths in many cases, and only incrementally wider in all other cases;
- the location of a toilet between walls a minimum of 900mm apart is a minimal requirement that can be achieved by the relocation of minor walls at the design stage;

- locating a toilet in the corner of a room is a minimal requirement that can be achieved in the layout of the bathroom at the design stage; and
- the reinforcement in the toilet and bathroom walls is typically in lengths of 600mm. It would be located between studs, which are part of the building framing. Framing off-cuts can be used for the reinforcing material.

Importantly, the four proposed features would not require changes to the size of homes. The four features can be accommodated without changing the overall size of homes. This was confirmed by some of the industry consultees in the initial consultation on this RIS. The reasons behind this conclusion are the following:

- the dimensions of the proposed features are close to the dimensions used as industry standards, such as the width of doorways (820mm), passages (1 metre front and 900mm rear) and the width and breadth of toilet compartments (900mm wide by 1.5 metres long);
- most hallways already meet the standard width of 1 metre, so would not need to change
- widening hallways that are narrower than 1 metre would have a minimal impact on the size of adjoining rooms. For example, widening a hallway by 5 cm would reduce the size of an adjoining 3 metres by 3.5 metres room by approximately 1.7 per cent, with no material impact on space or amenity;
- widening a doorway by 5 cm could be accommodated in the design of the doorframe and adjacent walls, and would make no material difference to adjacent room sizes;
- the bathroom and toilet space requirements can be achieved through the design of the layout of the bathroom and toilet, and via decisions about the position of walls and type of doors and pans, for example; and
- with regard to Class 2 high-rise and medium density dwellings, the requirements would only apply to a specified subset of dwellings. The impact on individual dwelling designs could be accommodated in the overall design of the building.

Based on consultation, DPCD estimates that the total impact on dwelling size would be no more than half a square metre. This impact can be accommodated through design changes that do not affect the overall size of the building, but it may limit the alternative use of space in some areas within homes. (This conclusion and the associated analysis are discussed further below.)

The requirements would necessitate some minor changes to room sizes in some new home designs. Precise information about the number and size of houses and apartments built in Victoria that meet the minimum door and hallway width

requirements, the number and size of bathrooms currently built on the ground level of two-storey houses, and the number of stand-alone toilets currently built, is not available. Making a precise estimate of the liveable space that may be used to accommodate the four accessibility features is therefore not possible. There are a range of tools that can be used to estimate the cost of space as explained in Appendix 7. After reviewing the available data, DPCD believes that $1000 per square metre is an appropriate estimate for the cost of space (relevant data are in Appendix 7). Using the estimate of $1,000 per square metre, and given that, under the policy proposal, 35,727 new homes built annually in Victoria would incorporate the four features, the cost of the alternative use of space to accommodate the features would be $17.9 million per year, or $148.9 million over ten years (NPV, discounted at 3.5 per cent). In most cases, **it is expected that this would not be a financial cost added to the price of new homes, but would be absorbed via amenity impacts of alternative designs for homes.**

Quantifiable and unquantifiable benefits of the four accessibility features

The four features were selected on the basis that they would entail low costs but achieve a high impact with regard to accessibility. The benefits of applying the features to most new housing are difficult to quantify because they comprise several different types of benefit. Some of the types of benefit are quantitative and some are qualitative and some should be quantifiable but data is not kept in a way which allows quantification.

Among the key benefits are the dignity and participation benefits of visitability and adaptability, safety benefits, housing quality benefits and lower aged care and healthcare costs. (Relevant data are in Appendix 8.)

Each year, the number of new homes built with the four features would amount to 1.98 per cent of the total housing stock in Victoria. Accordingly, in ten years, 17.8 per cent of homes in Victoria would contain the four accessibility features if the Government's desired rate of adoption of the features was achieved. Most of these homes would be based in Melbourne's growth areas (Class 1a) and inner Melbourne (Class 1a dwellings and Class 2). Adoption of the four features would enable these homes to be visitable, which would enable individuals with limited mobility to visit the 17.8 per cent of homes that accommodate Victorians living in these areas. It would not, however, be sufficient to enable all individuals to live comfortably in these homes (some people with severe or profound core activity limitations for example, would need more extensive home modifications), and would not address the transportation and other issues that may also affect the ability of individuals with mobility impairments to participate fully in community life. However with the four features the housing would be able to be less

expensively adapted than if the housing had no features. Access to transport, shops, health care and other services are important to people with mobility impairments, they increase the expected benefits to people with mobility impairments to participate in community life.

Over a period of ten years, an average of 8.9 per cent of homes would have the four features if they were adopted in all new Class 1 dwellings and in the specified proportion of Class 2 dwellings (8.9 per cent is the mid point between zero and 17.8 per cent). The 8.9 per cent figure represents the average level of adoption of the features over the period; the actual profile of adoption would feature a lower level of adoption in the first years of the regulatory period and a higher level of adoption in the latter part of the regulatory period.

A previous UK analysis on the benefits of Lifetime Homes (above-minimum level adaptability features) is relevant to this analysis because the adaptable features in the Lifetime standard are similar to the four proposed features. This source study, from the Joseph Rowntree Foundation, is Cobbold's 'A cost benefit analysis of Lifetime Homes' (1997).

The four principal types of benefit of the four accessibility features are analysed below.

Benefit 1: Improved safety and reduced falls hazards

In the case of safety, the lack of accessibility features leads to costs from in-home falls due to slip and trip hazards on entry paths, door thresholds and internal steps and loss of balance while using toilets, baths and showers. Some falls lead to injuries, while others lead to deaths.

Injuries from falls are associated with healthcare costs. According to the AIHW *Hospital Statistics 2006–07*, the average length of stay for all patients in public acute hospital is 3.6 days; in private hospitals it was 2.5 days (private hospitals account for 33 per cent of hospital beds). In public acute hospitals, the average cost per separation (leaving hospital) for all patients was $4067. Of these patients the average length of stay per case for fall injuries in 2004–05 was longer: 6.1 days.[63]

For the purposes of the present analysis, it was assumed (conservatively) that the average daily cost of a stay in public acute care is the same as the cost of a day in private acute care (though the public stay is longer). Taking account of the proportions of people in public and private care, the longer length of stays for public patients, and the longer length of stays for patients with fall injuries, it is

[63] The longer time period is attributable to the high rate of falls among people who are aged. AIHW, Hospital separations due to injury and poisoning, Australia 2004–05.

estimated that $6183 is the average cost of an acute hospital separation relating to a fall injury.

Fall injuries are more common among people who are aged and young children. Victorian hospital admissions data indicate that 54 per cent of falls on steps and 58 per cent of falls in wet areas are by people aged 70-plus, meaning that there are high rates of falls within this proportionately small age group.[64] DPCD believes that people aged over 70 would most benefit from the increased safety provided by a step-free pathway and dwelling entry and reinforced bathroom and toilet walls. This is based on information about the correlation of people aged 70-plus and the higher incidence of disability[65] and the age profile of people in care accommodation or nursing homes.[66] DPCD believes that people in this age group would be able to better prevent falls and improve their personal safety by arranging to have grab rails fitted to the reinforced bathroom and toilet walls.

Table 4.3 relates the annual number of injuries and deaths to the housing attributes that are the subject of the proposed features. For the fourth feature, only people aged 70-plus have been included, on the basis that this age group would be most likely to benefit from, and more likely to fit, grab rails that reduce the risk of falls.

Table 4.3: Number of Victorian hospital admissions and patient deaths related to home falls in 2007 by visitability and adaptability features

Features	Hospital admissions	Patient deaths
1. **Path of travel to entrance** (no steps on path or entry)	242* (falls on path and door step)	3.8* (falls on path and door step)
2. **Doorways and passages** (no steps on entry level)	0 (typical housing industry standards comply)	0 (typical housing industry standards comply)
3. **Toilet access** (clear space for mobility aid) 4. **Reinforced bathroom and toilet walls** (able to fit grab rails)	145 (people aged 70-plus)	6 (people aged 70-plus)

[64] Monash University Accident Research Centre 'Home injuries related to falls on or from stairs and steps', and 'Home injuries related to falls in the toilet, bath tub and shower' (January to December 2007).

[65] The number of people with a disability rises sharply with age; in Victoria 48 per cent of people aged 70 to 74 and 81 per cent of people aged 85 and over, have a disability. ABS, Disability, Ageing and Carers, Summary Tables, Victoria 4430.2.40.001, 1998.

[66] The number of people who reside in care accommodation rises sharply for people aged 85 and over. AIHW, Australia's Health 2004, p. 360.

Total	**387**	**9.8**

Source: DPCD, based on Victorian hospital admissions data.[67]

* Estimate based on data that 20 per cent of falls on steps take place on outside steps and at the doorstep.

There were at least 387 Victorian hospital admissions related to home falls on or from entry level steps or on or off a toilet and falls in or into a bath or shower in 2007.[68] Over a period of ten years, an average of 8.9 per cent of homes would have the four features. Accordingly, it is estimated that the four features would generate an annual saving of $0.2 million (current prices) due to preventing hospitalisations from some types of injurious falls in the home. This figure does not include the personal cost of pain and suffering from the injury.

With respect to fatalities, DPCD believes that the four features would improve the safety of the home environment and reduce the incidence of falls fatalities from a low height (steps and wet areas). These fall fatalities are in most cases (and in all cases for falls in wet areas) linked to people who are aged over 70. The four features give people a strategy for preventing falls in the home. With one entry to the home that is step-free, people would have a reliably safe, step-free entry for coming and going from the home. Similarly, with reinforcement in the walls of a toilet, shower and bath, people could arrange to install grab rails to the wall reinforcement to reduce the likelihood of falling.

Fatalities arising from falls in the home are concentrated among people aged over 44 years (93.9 per cent).[69] One life saved from preventing a fatal fall equates to a $3.5 million benefit, using the 'value of a statistical life' method. (No adjustment is made here for the age of the people concerned, as to discount the lives of a particular category of people would be difficult and inappropriate.)

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[67] DPCD estimate, based on Monash University Accident Research Centre 'Home injuries related to falls on or from stairs and steps', and 'Home injuries related to falls in the toilet, bath tub and shower' (January to December 2007). These data are conservative because only 68 per cent of hospital admissions specify a location code and there may be other deaths from falls which do not result in hospital presentations because the body is taken directly to the morgue. The number of falls related to steps has been correlated with UK Liverpool City Council data on the location of falls on steps, http://www.liverpool.gov.uk/Environment/Environmental_health/healthyhomes/accidents_in_the_home/index.asp. This figure is a proportion of the Victorian falls on steps based on the UK data on the location of non-fatal falls from stairs or steps in the home; 13 per cent occur on outside steps; and 7 per cent occur over the doorstep (a total of 20 per cent). Only falls by people aged 70-plus have been included in the number of falls related to wet areas. DPCD estimates that these home occupiers would benefit from, and be more likely to install, grab rails to meet their accessibility needs. In summary, in 2007, the number of Victorian hospital admissions related to home falls from or on stairs or steps was 1,210 and the number of home falls on or off the toilet or into the bath or shower by people aged 70-plus was 145 (1,210 x 20 per cent + 145 = 387 falls).

[68] ibid.

[69] Monash University Accident Research Centre, 'The relationship between slips, trips and falls and the design and construction of buildings', April 2008, p. 74.

In 2007, there were 9.8 patients who died in Victorian hospitals in relation to in-home falls on or from entry level steps or in the toilet, bath or shower.[70] After applying the percentage representing the proportion of homes with the features (8.9 per cent), it is estimated that 0.87 deaths per year would be prevented by the four features, implying an annual benefit of $3.05 million using the 'value of a statistical life' method. This may be an overestimate of the number of deaths from falls relating to the features, as a proportion of deaths would still occur from falls on or from entry level steps or in the toilet, bath or shower, even in homes in which the features were adopted. (While the four proposed features include one clear entry to a dwelling and wall reinforcement in wet areas, falls in these locations could still occur even with the features.) Accordingly, the estimate was adjusted downward to 0.5 deaths per year to mitigate the risk of overestimating the number of deaths that would be prevented by the features. This revised estimate implies an annual benefit of $1.75 million using the 'value of a statistical life' method.

The annual aggregate of these estimated benefits from preventing injuries and deaths is $1.95 million. In addition to these benefits, there are expected to be unquantified benefits from preventing deaths and injuries from emergency personnel being unable to achieve timely access or people with mobility restrictions being unable to achieve egress due to the lack of accessibility features.

Benefit 2: Reduced costs of future adaptations

The accessibility features would go some way toward the costs of making a home fully accessible by providing level access to the dwelling entry, wider doorways and halls, space for a mobility aid in the toilet and providing for the future fitting of grab rails. With further adaptation, localised circulation areas could be increased to a higher accessibility standard to meet the occupant needs. Annual demand for extensive home modifications is approximately 40 homes. These modifications would include the four accessibility features, plus additional more extensive accessibility features. The cost of including the features in an existing home is approximately $19,400 (see below for the calculation of this estimate). The annual savings from avoiding the cost of retrofitting the four features into the extensively modified homes depends on whether the modifications are made predominantly in new homes (with the four features) or predominantly in existing homes. The savings would be approximately $0.8 million per year if the extensive modifications were only made in new homes with the four features. Alternatively, the savings would be approximately $0.07 million per year if 8.9 per cent of the extensively

[70] DPCD estimate based on Monash University Accident Research Centre 'Home injuries related to falls on or from stairs and steps' (January to December 2007) and the UK Liverpool City Council data, http://www.liverpool.gov.uk/Environment/Environmental_health/healthyhomes/accidents_in_the_home/index.asp.

modified homes were new homes with the features. The latter more conservative figure is used as the basis for the estimate of the quantified benefits. In addition to these benefits, there are expected to be unquantified benefits from savings in private expenditure on home modifications for the share of people who are using independent resources to modify their properties.

Benefit 3: Lower aged care and healthcare costs, and reduced cost of moving to more suitable accommodation

Inaccessible housing gives rise to greater home and community care, aged care and healthcare costs, and costs from having to move to more suitable accommodation. Commensurately, benefits from improved accessibility include: savings in relocation costs from not having to move to more suitable accommodation; and health and wellbeing benefits from ageing in place. Wide adoption of the features would also assist people who are aged to move to a suitable home that is nearby, and therefore a home that they have a stronger personal connection to.

In the case of aged care and home and community care costs (for people of all ages), greater accessibility in new homes would achieve savings against the current respective budgets for aged care and home and community care programs. Such savings would arise from the ability to delay entry into hostels, or nursing homes and other types of supported accommodation, because people could remain in their own home independently for longer, or would be able to move into suitable private accommodation nearby.

As the data are not collected in a way that allowed DPCD to quantify the savings in relocation costs from not having to move to institutional care or the wellbeing benefits if people were able to remain at home, or move to a new home nearby rather than enter institutional care, DPCD developed an estimate based on the available data (see below).

Home and Community Care (HACC) and aged care benefits

HACC services provide support for individuals who need assistance in the home.[71] Department of Human Services has advised DPCD on the potential savings to HACC if the four features were fitted into all new Class 1 dwellings, new ground floor dwellings of medium density housing, and one in five dwellings in new high-rise buildings. Savings would arise from the reduced client need for HACC services from the proportion of households whose homes had the four features. It is estimated

[71] The DHS program is designed to support people whose capacity for independent living is at risk, or who a re at risk of premature or inappropriate admission to long-term residential care. Eligibility does not depend on age or income.

that the potential savings would be in the order of $1.71 million per year (as a mid-point estimate, in current prices and taking account of the fact that on average 8.9 per cent of homes would have the four features over the first ten years) for property services, allied health services and personal care. This does not include savings to Workcover costs as a result of safer working environments for HACC personal care workers.

In addition to these HACC savings, other benefits would be expected from reductions in other aged care costs due to the ability to delay entry into hostels or nursing homes (residential aged care)[72] because people could remain in their own home for longer. As people age, being able to remain at home for the longest time possible is associated with improved wellbeing and is associated with lower health care costs to the community.

- Wellbeing: there are important social and emotional benefits from being able to remain in the family home and to retain connection to a particular neighbourhood and community (ageing in place). These benefits are not possible to quantify but are expected to be significant.
- Lower healthcare costs: People who remain in the family home for longer can do so at lower cost than the cost of residence in aged care facilities. (Also, costs are lower if people are not required to move home so as to move into more suitable accommodation.)

Precise data on the factors that can delay entry into residential aged care are not available, however DHS has advised DPCD that entry into residential aged care is frequently linked to the incidence of falls by frail aged people. International research in this area illustrates the issue.[73]

Table 4.4 shows that in Victoria people over 70 years of age have the greatest number of hospital admissions as a result of home falls on outside steps, doorsteps

[72] Government now refers to hostels and nursing homes as residential aged care. Hostels are classified as Low Care and nursing homes are classified as High Care.

[73] Entry into residential aged care is usually linked to a combination of factors such as cardio vascular disease and dementia which may lead to a trigger event such as a fall resulting in a person being admitted for a long stay up to twelve months or on an ongoing basis. According to Cobbold (1997), 25 per cent of people may have a delayed entry to residential care if their home was built with above-minimum adaptable features; Cobbold, 1997, A cost benefit analysis of Lifetime Homes, p. 48. (This assumption is based on research by the Personal Social Services Unit at the University of Kent on residential care admissions: 80 per cent are related to the person's physical needs, 40 per cent are associated with the ability of carers to provide support; and 16 per cent were associated with inappropriate housing). Tinetti and Williams (1997) identify the link between falls and risk of admission to nursing homes and conclude that 'among older people living in the community falls are a strong predictor of placement in a skilled-nursing facility; interventions that prevent falls and their sequelae may therefore delay or reduce the frequency of nursing home admissions' (p. 2). See Tinetti and Williams, 1997, Falls, Injuries Due to Falls and the Risk of Admission to a Nursing Home, New England Journal of Medicine. Bridge, Phibbs , Kendig, Mathews and Cooper (2008) identify that several other studies found that housing adjustments significantly reduced the number of falls among older people (Campbell et al. 2005, Close et al. 1999, Cumming et al. 1999, Plautz et al. 1996 and Thompson 1996).

and in the toilet, bath and shower (ie. locations where the four features would improve safety); people over 70 years of age account for 56 per cent of all falls that occur in these places. Table 4.5 shows that people between 75 and 84 years of age account for 50 per cent of the number of hospital admissions of people aged 70 plus, as a result of these particular falls.[74]

Between the ages of 75 to 84 years, when hospital admissions from these particular falls increase, significant numbers of people also enter residential aged care. Table 4.6 shows that there is a marked increase in the number of people in aged care between the group who are 65 to 74 years of age and the group who are 75 to 84 years of age.

Table 4.4: Number of Victorian hospital admissions related to home falls by age on or from outside steps, doorsteps and toilets and in baths and showers in 2007

Age	Hospital admissions by falls from outside steps and doorsteps	Hospital admissions by falls in toilet, bath or shower	Total Falls	Per cent
0 to 4	*7	14	21	**5**
5 to 69 years	*104	91	195	**39**
70-plus	*131	145	276	**56**
Total falls	*242	250	492	**100**

Table 4.5: Number of Victorian hospital admissions related to home falls for people aged 70-plus, on or from outside steps, doorsteps and toilets and in baths and showers in 2007

Age	Hospital admissions by falls from outside steps and doorsteps	Hospital admissions by falls in toilet, bath or shower	Total Falls	Per cent
70 to 74 years	*19	27	46	17
75 to 79 years	*33	23	56	20
80 to 84 years	*41	43	84	30
85-plus years	*38	52	90	33
Total falls 70-plus	***131**	**145**	**276**	**100**

[74] According to the Productivity Commission, health costs increase significantly at the end of life; Productivity Commission, 2005, Economic Implications of an Ageing Australia. Higher health costs late in life is consistent with the higher numbers of people in hospital and residential aged care who are over 85 years of age, as shown in Tables 4.5 and 4.6.

Source for Table 4.4 and Table 4.5: DPCD, based on Victorian hospital admissions data.[75]

* Estimate based on 20 per cent of total number of falls

Table 4.6: People aged 65 years and over in Australia: Living arrangements in 2001 (per cent)

Age group	Total in private dwellings (a)	Resident of cared accomm-odation (b)	Total in non-private dwellings (c)	Total
65 to 74 years	98.25	1.3	1.75	100
75 to 84 years	93.25	6.05	6.75	100
85 to 94 years	74.55	23.9	25.45	100
95 years and over	54.65	41.95	45.35	100
Total 65 and over	**93.55**	**5.75**	**6.45**	**100**

Source: DPCD, based on AIHW analysis of 2001 Census data.[76]

(a) Includes persons in other private household arrangements, and persons living in 'not classifiable' households.

(b) Includes persons living in hospitals, residential aged care accommodation, hostels for the disabled, childcare institutions and other welfare institutions.

(c) Includes persons living in other types of non-private dwellings such as hotels/motels, boarding houses, refuges, hostels for the homeless, convents/monasteries, etc. Includes owners, proprietors, staff and family living in non-private dwellings.

As data are not collected in a form to enable DPCD to directly quantify the benefits of delayed entry to residential aged care, DPCD has used other data to estimate the benefits.

Residential aged care is a Commonwealth program responsibility. In 2007-08 the Commonwealth Government funded 44,770 operational places in Victoria at an estimated cost of $1.5 billion.[77] The average Commonwealth funding per aged care place (per person) is $33,270 per annum.[78] The Victorian Government, through

[75] DPCD estimate, based on Monash University Accident Research Centre 'Home injuries related to falls on or from stairs and steps', and 'Home injuries related to falls in the toilet, bath tub and shower' (January to December 2007). The estimate for the number of falls from steps is based on 20 per cent of the total of 1,210 home falls from stairs and steps in Victoria in 2007. This estimate is based on data that 20 per cent of falls take place on outside steps and at the doorstep, as outlined in Benefit 1 above.
[76] Australian Institute of Health and Welfare, Australia's Health 2004, p. 360. AIHW source: 2001 Census of Population and Housing, ABS Cat. No. 2048.0.
[77] Department of Human Services, based on the Report on Government Services 2009.
[78] Department of Human Services, based on the Report on Government Services 2009. In 2007-08, there were 44,770 operational places in Victoria (split approximately 50/50 between Low and High

public health services, provides $154 million recurrent annual funding (for state policy costs that apply to 15 per cent of Commonwealth funded aged care places).[79] Victorian taxpayers contribute to the state-funded and federally funded aged care expenditures.

Against these program costs, savings would arise from the delayed entry to residential aged care services for the proportion of people who were able to remain at home longer because their homes, or the homes of friends and family, included the four features. The savings would apply for each year that entry to aged care was delayed.

The data on falls by age group and entry to residential care by age group can be used to infer the effect of more accessible housing on delaying entry into aged care.

Among people aged over 85 years, residence in aged care facilities is relatively common: 23.9 per cent of people in this age group, and 41.2 per cent of people aged over 95, are in residential aged care. Accordingly, the potential to delay people in these age groups from entering aged care is relatively small; this reflects the fact that people in these age groups have a variety of reasons for entering aged care, only some of which relate to building design and mobility.

For people aged below 85, however, entry into aged care is far less common. Only 6 per cent of people aged 75 to 84 years, and 1.3 per cent of people aged 65 to 74 years, are in residential aged care. The potential to prevent entry into aged care among this age group (less than 85 years of age) is relatively high (because causes of entry other than mobility difficulties and unsuitable housing are less important for this age group).

If the four features were included in the proposed proportion of new homes, it is expected that 8.3 home falls would be prevented in the 70 to 84 age bracket (ie. falls on or from entry level steps or on or off a toilet and falls in or into a bath or shower). The basis for this estimate is as follows:

- it is assumed that half of the 186 falls in this age group would be prevented.[80] The figure is halved because not all falls would be prevented by the features, but at least half of the falls would be expected to be prevented; and

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Care). In 2007-08, the average annual Commonwealth funding for all places funded in Victoria was $33,270. The average for High Care places is $43,645 and for Low Care places $15,684.

[79] Department of Human Services, based on the Report on Government Services 2009. The Victorian Government contributes to the funding of 6,385 operational places (mixture of Low and High Care) and the recurrent contribution in 2009-10 is $154 million.

[80] This assumption is based on the correlation of disability and living arrangements for people who are 70 to 84 years of age; disability rates increase in this age bracket (in Victoria 48 per cent of people aged 70 to 74 have a disability and this increases to 81 per cent for people over 85 years of age) (ABS, Disability, Ageing and Carers, Summary Tables, Victoria 4430.2.40.001, 1998) and Table 4.6 shows between 98 per cent and 93 per cent of people in this age bracket live at home. Threrefore, DPCD believes people who are 70 to 84 years of age, would benefit from the increased safety provided by

- the proportion of 8.9 percent was applied, representing the number of new homes that would have the features over a ten year period.

This estimate must be further adjusted to reflect the fact that some people living in unsuitable housing will enter aged care before experiencing a fall. Precise data on this are not available, so it is assumed that the number of people aged 70 to 84 entering aged care to avoid falls in unsuitable housing is equal to the number of people in that age bracket experiencing falls due to inaccessible housing and subsequently entering aged care.

This gives an estimate of 16.6[81] instances of delayed entry to aged care. It is assumed conservatively that the average length of delay of entry into aged care due to the four accessibility features would be three years.[82] The actual average length of delay is expected to be significantly higher than three years among the 70 to 84 age group, because, as noted above, mobility and access issues are a primary reason for people in this age group entering aged care. For people at the older end of this age group (eg. aged 83 or 84) the length of delay of entry into aged care would be relatively low, while for people at the younger end of the age bracket (eg.

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the step-free pathway and level entry and reinforced bathroom and toilet walls. This broadly correlates with Australian research that by 70 years of age, home occupiers would benefit from adaptable features to meet their accessibility needs (see Hill PDA, Adaptable Housing Study, A cost benefity analysis of Adaptable Homes, 1999, p.18.) On this basis, DPCD believes that people in this group would be likely to take fall prevention measures, by using step-free entries and installing grab rails in their bathrooms, to prevent the future risk of slipping or tripping. This is broadly supported by the Monash University Accident Research Centre, which recommends that the BCA be amended to reduce the number of slip and trip hazards and prevent some building related falls, including in home falls (the highest number of which are by people in this age group). (See Monash University Accident Research Centre, The relationship between slips, trips and falls and the design and construction of buildings, (funded by the ABCB), 2008, p. 189).

[81] This estimate is proportionally lower than the UK estimates by Cobbold (1997) which included physical, carer and unsuitable housing reasons (and not just fall related reasons): Cobbold, 1997, A cost benefit analysis of Lifetime Homes, p. 46-51. For delayed moves to residential care, over a 60 year period, the UK research estimates that each year 0.4 per cent of households have someone who moves into residential care and the assumption is that 25 percent of these people would not need to do so because their home included the above-minimum features. Further there would be a reduced need for temporary residential care; the UK research estimates that each year 1.2 per cent of households have someone who moves to temporary residential care and that 10 per cent of these people would not need to do so because their home included the above-minimum features. By way of comparison with Victoria, this would translate into 159 households delayed moving to residential care and 190 households having a reduced need for temporary residential care (based on the number of households in Victoria and 8.9 per cent of the homes having the features).

[82] This assumption is based on a three year delay period for moving to aged care according to the UK research: Cobbold, 1997, A cost benefit analysis of Lifetime Homes, p. 48. This is a benchmark for an assumption of the likely delay period, which assumes that people would be able to remain in their home for longer but may not be able to remain in their home indefinitely. The benchmark assumption is based on the Lifetime Homes Standards. A home based on the Standards would have a similar level of amenity to the level provided by the four features. The Standards include the same four proposed accessibility features (step-free pathway, level entry, wider doorways and passages, a visitable toilet and reinforced bathroom walls) and additional adaptable housing features. (These additional adaptable housing features could be retrofitted into a home with the four proposed features, to achieve the same level of adaptability).

aged 71 or 72) the potential for delaying entry into aged care can be as long as a decade or more.

If 16.6 instances of delayed entry into aged care are achieved by adoption of the four features in 8.9 per cent of homes; and the average length of delayed entry is three years; and the average annual cost of aged care is $33,270; then the estimated quantitative benefit of the four features delaying entry into aged care is $1.65 million per annum.

The annual aggregate of these estimated benefits from savings to home and community care and aged care is $3.36 million.

This estimate is conservative and does not include savings to private expenditure on residential aged care in the form of bonds or capital contributions. It also does not include substantial social and community benefits from ageing in place.

Rental housing and crisis accommodation benefits

Inaccessible rental housing gives rise to greater crisis accommodation costs and costs from having to move between crisis accommodation and moving to more suitable rental housing. When people have an injury or illness that restricts their mobility, they may need to relocate with their family to suitable rental housing. Benefits from improved accessibility include: where people have a mobility limitation, savings in crisis accommodation costs where no rental suitable housing is available and not having to move between crisis accommodation; and health and wellbeing benefits from having suitable rental housing. Wide adoption of the features would increase the number of homes with accessibility features for rent and assist people with mobility restrictions to find suitable rental housing.

The Government funds crisis accommodation, including temporary accommodation where suitable rental housing is not available. (For example, the cost to stay in a motel, which as a BCA Class 3 building and required to be accessible for people with disabilities, because there is no accessible rental accommodation. There was a client who was in crisis accommodation for three months with their family because no accessible rental accommodation was available, which created an additional financial and social cost.) DPCD believes there would be a significant benefit if access to rental housing with the four features was improved for people with mobility restrictions who reside in crisis accommodation. This benefit could be quantified if the necessary data were available. In the absence of these data, the present RIS treats this benefit as an additional unquantified benefit.

Box 4.1: Supporting evidence from the HACC Program [83]

The HACC Program gathers quarterly data on approximately 264,000 clients in Victoria via the HACC minimum data set (MDS). This is client-level data from all 500 HACC service providers. It includes demographic data such as age and living arrangements. It also includes a set of 14 items on client functional status or need for assistance in tasks of daily living.

Key demographics of HACC clients

Group	Number	Per cent
Number of clients	264,000	100
Number of clients aged 70-plus	173,000	65
Number of clients aged 70-plus living alone	128,200	48
Number of clients aged 80-plus	98,500	37
Total no. Victorians aged 70-plus	556,600	

HACC client functional status

The 14 items in the HACC data set cover the person's abilities to perform the following activities of daily living: housework, mobility outdoors, shopping, taking medication, handling money, walking, and mobility in bed/chair transfers. It also covers four self-care tasks: bathing, dressing, eating and toilet use. The three-point scale is: without help, with some help, or unable to do.

Data analysis: method

Data on three of the functional status items were analysed in relation to the four features: ability to walk, bathe, and use the toilet. Only agencies that were designated as HACC Assessment Services were selected, because data on functional status emanating from other agencies may be less reliable. These data items are relatively new, and not all agencies are qualified to collect them. Only clients aged 75-plus were selected, because this is the age group most likely to have reduced functional ability in these areas.

This procedure selected 105,437 clients who were aged 75-plus and had been assessed

[83] Department of Human Services (Vic).

by a HACC Assessment Service.

Findings: need for assistance

Overall, 49 per cent of client records had data on those three key activities (need for assistance with walking, bathing and using the toilet). See Table 1 and Figure 1.

- The majority of older clients can do all these daily activities without help. For example, two-thirds of clients can bathe without help.
- 38 per cent of older clients needed some help with walking or were unable to walk.
- 33 per cent needed some help or complete help with bathing.

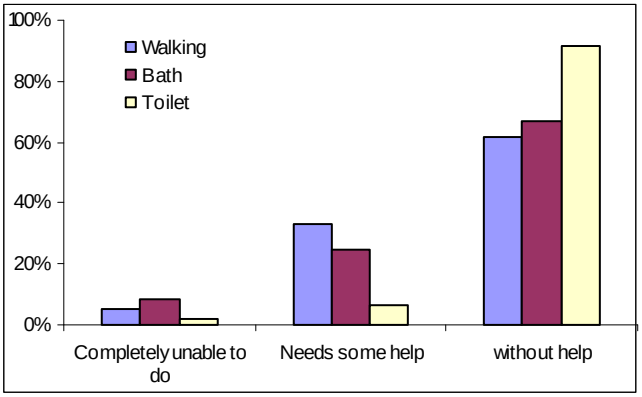
HACC client scores on three basic activities of daily living

	Unable to do	%	Needs some help	%	Without help	%	Total Clients With Valid Answers
Walking	3,183	5.2%	20,593	33.4%	37,933	61.5%	61,709
Bath	4,012	8.2%	12,088	24.7%	32,893	67.1%	48,993
Toilet	772	1.7%	2,999	6.8%	40,414	91.5%	44,185

Extent of help needed by older HACC clients with three activities of daily living, Victoria 2008-09

[84] This assumption is similar to the 20 per cent reduction to the number of households in new homes that might require reduced levels of help by an amount of two hours per week according to the UK Joseph Rowntree Foundation: Cobbold, 1997, A cost benefit analysis of Lifetime Homes, p.53. The UK analysis is based on the Lifetime Homes Standards which include the same four proposed accessibility features (step-free pathway, level entry, wider doorways and passages, a visitable toilet and reinforced bathroom walls) and additional adaptable housing features. (These additional adaptable housing features could be retrofitted into a home with the four proposed features, to achieve the same level of adaptability).

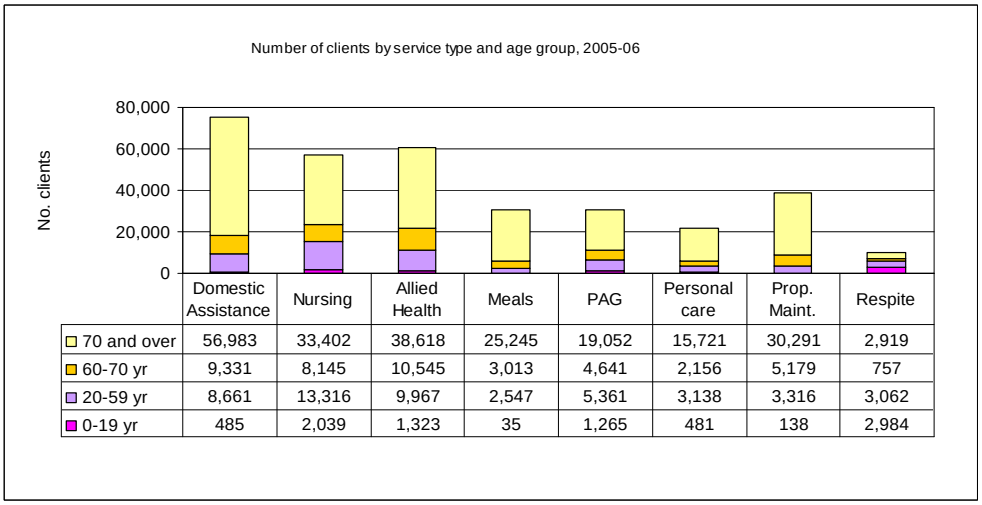
[85] According to the research frail aged people with home modifications had a slower rate of declining mobility and had less expenditure on all home-care visits (medical and non-medical) including 37 per cent for aides; Mann et al, Effectiveness of Assistive Technology and Environment Interventions in Maintaining Independence and Reducing Home Care Costs for the Frail Elderly, 1999.



These figures are considered to be conservative; that is, the view of HACC managers is that more like 70 per cent of older clients had mobility problems or were at risk from falling and would directly benefit from living in a dwelling that had step-free entry.

Impact of four features on the HACC Program

The most significant impacts on HACC services would be in regard to home maintenance, allied health and personal care. There would also be some unquantifiable gain in domestic assistance, as better design facilitates house cleaning. The numbers of people receiving these HACC services are shown in Figure 2.



	Domestic Assistance	Nursing	Allied Health	Meals	PAG	Personal care	Prop. Maint.	Respite
70 and over	56,983	33,402	38,618	25,245	19,052	15,721	30,291	2,919
60-70 yr	9,331	8,145	10,545	3,013	4,641	2,156	5,179	757
20-59 yr	8,661	13,316	9,967	2,547	5,361	3,138	3,316	3,062
0-19 yr	485	2,039	1,323	35	1,265	481	138	2,984

Impact on HACC home maintenance

The biggest savings would be in expenditure on HACC home maintenance. The budget for 2009-10 was $11.4 million. Last year, the equivalent of around 280,000 hours of service were delivered to 39,000 clients (of whom 77 per cent were aged 70-plus). The most common kinds of work done are the installation of grab rails in bathrooms and entrances and the installation of ramps at front entrances (note that these HACC home

maintenance changes are separate and additional to the home modifications discussed in Benefit 2). Ramps can cost $1000 for the whole job. This work would account for an estimated 50–60 per cent of council expenditure on HACC home modification jobs. With the proposed standards on step-free entrances and improved bathroom access, the estimated savings to the HACC home maintenance budget would be 30 to 40 per cent, or $3.42 million to $4.56 million. The mid point estimate of these savings is $3.99 million. After applying the percentage representing the proportion of homes that would have the features over ten years (8.9 per cent), the estimated savings would be **$0.36 million.**

The savings would stem from reduced need to install ramps and reduced need to demolish wall linings to fit grab rails. Clients who may have previously needed a home modification to install a ramp would be able to access their home via the clear path of travel to a level entry feature (in the proportion of homes with the features). While grab rails would still need to be installed in homes, the wall reinforcement feature would reduce grab rail costs because standard rails could be fitted directly without the need to remove linings, install reinforcement and reinstate linings and tiling at significantly greater costs. There would still be a need to provide customised ramp and grab rail installations to suit individual mobility needs in a small proportion of cases, and in the proportion of homes that lack the features.

Impact on HACC allied health services

Home modifications such as ramps and rails typically require a prior home visit by an Occupational Therapist to assess the required work and leave instructions for the tradespeople. The corollary of the potential savings to HACC expenditure on home maintenance is savings in the Allied Health budget. The unit price of Allied Health is currently around $80 an hour. An estimated 20 per cent of the $51.2 million Allied Health budget would be saved, or $10.24 million a year (as 20 per cent of the existing Occupational Therapists visits relate to the four features in any combination of, ramp, doorway and/or toilet access and/or grab rail installations). After applying the percentage representing the proportion of homes with the features (8.9 per cent) the estimated saving is **$0.91 million.**

The savings estimate is based on the anticipated reduction in the number of home assessments by occupational therapists. Where clients had the features installed in their homes, they would be able to advise health professionals of the accessibility of their home (such as, a step-free entry, no steps on the entry level and the ability to fit grab rails.) The corollary is that as occupational therapists are skilled in using Australian Standards, they would be skilled in interpreting the impact of the four features on the accessibility of a home without having to carry out on-site assessments of certain new homes.

Impact on HACC personal care

Personal care typically involves a person assisting an older HACC client with having a bath or shower, dressing, and getting in and out of bed. Expenditure in 2008-09 was $33 million on 23,000 clients, of whom 73 per cent were aged 70-plus. The unit price is $30 an hour.

The proposed features would not have a large impact on reducing the demand for personal care. (A more significant impact would occur if the regulations extended to requiring a step-free, walk-in shower with grab rails. If this were the case, perhaps 25 per cent of current users of personal care could manage to have a shower unaided.)

Nevertheless, the proposed features (particularly wider hallways and step-free internal access) would have some beneficial impact on personal care, estimated to be 10 to 20 per cent savings in staff time per annum[84], or $3.3 million to $6.6 million. The mid point estimated savings are $4.95 million. After applying the percentage representing the proportion of homes with the features (8.9 per cent) the estimated saving would be **$0.44 million.**

The savings estimate is based on savings in staff time to assist clients. The four features would enable some people with restricted movement to independently move about their home without the aid of a carer. The literature indicates that this enables people to maintain their mobility which reduces the need for care. The estimate assumes that clients might have a reduced need for personal care, but that it is likely they would still need some care. Where the wall reinforcement feature enables grab rails to be fitted, some clients would not need assistance with bathing. While some clients (with the wall reinforcement feature) would still need assistance with bathing, wider doorways and step-free hallways would enable some clients (including those using a mobility aid) to independently visit the toilet, the kitchen or another room without the aid of a carer. International research has found that the effect of home modifications and assistive technologies reduced the expenditure on personal care hours for frail elderly people by 37 per cent.[85]

Impact on client participation in the community

Step-free entrances would lead to a significant improvement in the ability of frail aged people to come and go unaided, particularly older people who use walking frames. Fear of stumbling over the steps is a factor in deterring people from getting out and about, and the front steps are a common site of actual falls and injuries.

Impact on council OHS costs

The proposed design improvements would have a beneficial effect on the high cost of WorkCover paid by local government in Victoria. Ultimately these labour costs are paid by the HACC Program. The impact would be in a safer working environment for HACC personal care workers (less risk of falls when manoeuvring a frail older person in the bathroom, corridors and front entrance).

Summary of potential savings to HACC

HACC home modifications and property maintenance	$0.36 million
Allied health services	$0.91 million
Personal care	$0.44 million
Total	**$1.71 million**

Funds saved could be redirected to meeting other identified client needs in the HACC Program.

In addition to these benefits, there are expected to be unquantified benefits from the health and wellbeing aspects and cost savings from not having to move to more suitable private accommodation or being able to move to more suitable private accommodation in a new home nearby. There are also expected to be unquantified benefits from the impact on private carers when there is less assistance needed with moving and lifting friends and family who have mobility restrictions. When people do need care services, there are also expected to be unquantified benefits from cost savings to private expenditure on home care and aged care services.

Hospital discharge benefits

Hospitals have a duty of care to safeguard patients against further injury. Patients suffering from restricted movement (either temporary or ongoing) after treatment for falls and other injuries are at risk of having further injurious falls because of their condition. Patients with restrictive movement after treatment typically have longer hospital stays than the number of days for average hospital stays. Patient recovery is variable. Factors that delay discharge are that some patients require acute care for longer and other patients are delayed because their homes are unsuitable to return to (such as, because of steps and an inaccessible toilet). A lack of accessible housing (which is suitable for people with movement restrictions) means that some

patients must stay in hospital or sub-acute care longer, or go into rehabilitation services until they are well enough to be discharged into a home that would otherwise be unsuitable to receive them. In such circumstances, requiring patients to remain in hospital longer is one aspect of how hospitals meet their duty of care. More widespread adoption of accessible housing would mean that some people could return to their own home, or the home of a family member or friend, earlier.

Precise data on the reasons for discharge delays are not available, but the following five case studies (in the box below) illustrate the issue.[86] Patients need to regain their mobility before they return to inaccessible homes (for example homes with steps) or have their homes modified to suit their ongoing mobility needs (such as installing ramps and widening doorways). Where patients require the ongoing use of a wheelchair, the four features would go some way to meeting their access needs, by providing a level entry, wider doorways and passages, and the ability to fit grab rails. Further home modifications could be made to suit their individual accessibility needs (such as a level entry shower). This has been confirmed by a Caulfield Hospital audit of 94 spinal patients (most of whom would use a wheelchair) discharged over a three-year period. The audit found that, of the 94 people discharged, it was recommended that modifications be made in the majority of patients' homes. It was recommended that:

- a wall be removed in 13 per cent of cases;
- a door be widened in 15 per cent of cases;
- grab rails be installed in 62 per cent of properties; and
- a ramp be installed in 16 per cent of properties.

These data indicate that about 20 percent of the people discharged were recommended to carry out a modification to their home that related to one of the four accessibility features (in 26 per cent of cases, one of the features was recommended to be installed).

The audit identified that the most common recommendation was to install grab rails. Installing reinforcement and grab rails can delay patient discharge by up to one week.[87] The five case studies show that delays of three to five weeks are experienced for more extensive modifications, such as building a ramp and a suitable toilet. As the data were not collected in a way that allowed DPCD to quantify the benefits if people were to leave hospital earlier after procedures, falls and other injuries, to provide a quantification of the benefits, DPCD has developed an estimate based on other available data. The other data relate to hospital

[86] Clinical data, Caulfield Hospital, Melbourne (case study 2-5) and Southern Health, Melbourne (case study 1) August 2009.
[87] Clinical data, Southern Health, Melbourne, 2009.

discharges (separations) following treatment or procedures that would result in restricted movement. The length of hospital stay for these conditions ranges from 4.6 to 21.2 days and exceeds the average length of stay for all treatments and procedures including the length of stay for patients with restricted movement (3.6 days in public hospitals and 2.5 days in private hospitals). Patients may also have care for rehabilitation following treatment; this care has an average length of stay of in Victoria of 23 days.[88]

Table 4.7 shows the annual number of patients leaving public or private hospitals who have had treatment for restrictive injuries that would require recovery in an environment (hospital, rehabilitation centre or home) with the four accessibility features.

Table 4.7: Number of hospital separations involving patients with restricted movement, Victoria, 2007-08.

Hospital type	Treatment*/ *Procedures*	Number of separations	Total Length of stay	Average length of stay (days)**
Private	Amputation of ankle and foot including toes	6	127	21.2
Private	Arthrosis of hip	14,260	65,673	4.6
Private	Fracture of femur	2,127	30,483	14.3
Private	Fracture of foot except ankle	469	5,783	12.3
Private	Fracture of lower leg, including ankle	1,530	19,335	12.6
Private	Fracture of lumbar spine and pelvis	1,393	21,648	15.5
Private	*Hip replacement*	***1,861	***15,070	8.1
Private	*Knee replacement*	3,537	27,305	7.7
Private Total		***25,183***	***185,424***	
Public	Amputation of ankle and foot including toes	59	498	8.4
Public	Arthrosis of Hip	6,957	51,426	7.4
Public	Fracture of femur	9,009	142,440	15.8
Public	Fracture of foot except ankle	1,670	12,692	7.6
Public	Fracture of lower leg, including ankle	6,346	53,575	8.4

[88] Australian Hospital Statistics 2006-07, selected separation statistics by principal diagnosis. Based on Australian Hospital Statistics 2006-07, 23,155 patients in Victoria had care after treatment involving the use of rehabilitation procedures. In 2006-07, Australia had 149,954 hospital separations where the principal diagnosis was 'Care involving use of rehabilitation procedures'. Using the proportion of Australia's population living in Victoria, it is estimated there were 23,155 hospital separations for care involving use of rehabilitation procedures.

Public	Fracture of lumbar spine and pelvis	3,418	45,497	13.3
Public	*Hip replacement*	***1,046	***8,814	8.4
Public	*Knee replacement*	2,131	16,498	7.7
Public Total		***30,636***	***331,440***	
Total number of separations		**55,819**	**516,864**	

Source: DPCD, based on Victorian Department of Health data.

*Data extracted from all diagnoses fields (i.e. TDIAG1 to TDIAG40)

**DPCD estimate derived by dividing the total length of stay by the number of separations.

*** There are various reasons why people require hip replacements, arthritis being the most common reason.[89] DPCD has adjusted the number of separations and total length of stay for hip replacements downward by 50 per cent to address potential double counting for the hip replacement procedure with the arthrosis of the hip diagnosis.

Based on the data in Table 4.7, the average length of stay is 9.2 days. For private hospital stays, the average was 7.4 days, and for public hospital stays the average was 10.7 days. These exceeded the average length of stay for hospital stays generally (2.5 days in private hospitals and 3.6 days in public hospitals) by 4.9 days and 7.1 days respectively. The average of these two figures, weighted according to the proportions of private and public stays in the total number of stays, is 6.3 days.

DPCD assumes that all patients listed in Table 4.7 have restricted movement (either temporary or ongoing) and are in hospital (and/or sub-acute care) for longer, to either regain their mobility to return to inaccessible homes, or to have time to modify their inaccessible homes (with the exception of the 4 per cent of patients who lived in homes with some accessibility features). Injury recovery times vary. (The average length of stay for patients with restricted movement is 4.6 days to 21.2 days in acute care and 23 days in sub-acute care). DPCD estimates that a total of 53,586 hospital discharges annually (96 per cent of identified hospital separations involving patients with restricted movement) could be reduced (because patients did not have to recover their mobility or modify their home). The data is not in a form that enables DPCD to estimate the number of days that the average hospital stay (and/or sub-acute care stay) for patients with restricted movement may be reduced. However, DPCD believes that hospital stays may be

[89] The reasons for hip joint damage are osteoarthritis, rheumatoid arthritis, osteonecrosis, and injury and bone tumors. Medical news, accessed October 2009, http://www.newsrx.com/library/topics/Hip-Replacement.html

reduced by an equivalent of three[90] days of acute care (for either acute or sub-acute care) if patients had homes with the four features to return to (this estimate is an average; some discharges would be delayed by more than three days and some discharges would be delayed from sub-acute care settings at lower costs). Using three days as the average number of days that hospital stays may be reduced, it is expected that hospital stays for some patients with restricted movement could be reduced by one day at an estimated cost per annum of $5.39 million and up to six days at an estimated cost per annum of $32.33 million (if the average daily cost of hospital care is $1130 and 96 per cent of these hospital stays were shortened). This estimate accounts for the fact that, even if the four features were adopted in all new homes, not all homes would have the features. Over ten years, the average level of adoption of the features would be 8.9 per cent of the total housing stock. This estimate ignores the fact that, once all new homes had the four features, patients whose discharge was significantly delayed due to the lack of suitable accommodation, would have access to a home with the four features, whether that home was their own home (including rental accommodation) or the home of a relative or friend. (If 8.9 per cent of homes had the features, the great majority of people with a network of relatives and friends would have a relative or friend with a home that has the four features.)

Table 4.8 shows the length of hospital stays for all falls that have taken place in homes, including minor falls. Of the length of stays, 31.9 per cent were eight to thirty days in length and 6 per cent were longer than thirty days in length; therefore the estimate that hospital discharges could be reduced by three days for patients with restricted movement listed in Table 4.7 is a short period in comparison to a significant number of the length of stays for all fall related injuries in homes listed in Table 4.8.

Table 4.8: Length of stay: falls related hospital separations in the home, Australia, 2002-05 by frequency and percentage.

Length of stay	2002-03	2003-04	2004-05	Total	Per cent
Less than two days	20,870	22,461	23,536	**66,867**	**33.9**
Two to seven days	17,339	18,796	19,366	**55,501**	**28.2**
Eight to	19,021	20,889	22,961	**62,871**	**31.9**

[90] There is some considerable variance associated with the estimated number of days by which hospital stays will be extended, due to several uncertainties. Accordingly, for conservatism, the estimate adopted for the purposes of this RIS is half the calculated average extension of 6.3 days (ie. 3.15 days, rounded to 3 days). This is expected to be equivalent to approximately one standard deviation below the mean length of extension of stays.

thirty days					
Greater than thirty days	3,431	3,962	4,478	**11,871**	**6**
Total	**60,661**	**66,108**	**70,341**	**197,110**	**100**

Source: Monash University Accident Research Centre, The relationship between slips, trips and falls and the design and construction of buildings, 2008, p. 116.

In addition to these estimated benefits from reduced hospital stays, DPCD expects that there would be further benefits arising from reduced stays in acute care and sub-acute care for hospital separations not indentified in Table 4.7, if people had homes with the four accessibility features to return to earlier. (During the public consultation phase, DPCD proposes to commission a study to establish typical reductions in hospital stays if the four features were mandatory, as the data is not in a form that enables this to be done.)

Box 4.2: Five case studies

Case study 1: Patient W on a wheelie walking frame was unable to be discharged from service until capable of independently being able to lift the walker frame clear of one step. Steps outside many patients' homes are problematic, particularly for people who use walking frames. The step depth is never sufficient to accommodate a walking frame; this results in the frame being abandoned (either at the top or bottom of the steps) and a grab rail needing to be installed. Many elderly patients utilise the rail with a two-handed ascent and descent approach. This places the body in an awkward, twisted position and heightens the possibility of a trip fall.

Case study 2: Patient X was admitted in 2009 with a trans-tibial amputation secondary to peripheral vascular disease (PVD) and poorly managed diabetes.[91] Due to the amputation, X required equipment and assistance to complete several daily tasks including self-care. X was mobilising in a wheelchair and unlikely to progress far with a prosthetic leg. A home visit identified limited access to the toilet due to a narrow doorway and limited circulation space for the wheelchair (removal of the wall or widening of doorway was not structurally possible); narrow doorways throughout the home; and no access for a wheelchair into the home due to several steps at both the front and back of the house. For the patient to go directly home, the following modifications were needed: A ramp to allow X to enter and exit home

[91] There is a link between peripheral vascular disease and smoking. See: <http://www.quit.org.au/article.asp?ContentID=10297>. Amputations are also linked to type 2 diabetes (7% of adult Australians have diabetes); see <http://www.limbs4life.com/content/articles/diabetes/Diabetes%20and%20amputations.pdf>.

in emergency situations as well as completing daily tasks; and a second toilet be installed in the bathroom due to the inability to modify the existing toilet area for access via a wheelchair. X's discharge was delayed for three weeks whilst awaiting completion of the modifications (estimated cost of delay $23,730).

Case study 3: Patient Y was admitted in 2009 following a through knee amputation secondary to PVD. Following amputation, the patient required equipment and environmental set up to complete their daily tasks independently. Y was mobilising with a wheelchair due to poor wound healing; a prosthetic leg was delayed until wound controlled. A home visit identified: inappropriate access into the home due to several steps as well as slope of the land; and narrow doorways limiting access into toilet area and laundry. The following modifications were recommended: installation of ramp at side entrance into home; and widening of toilet doorway to allow wheelchair access to toilet area. The patient was unable to access home and could therefore not be discharged home. The construction of this ramp took several weeks and delayed discharge (estimated cost of delay $15,820).

Case study 4: Patient Z was admitted in 2009 following a trans-tibial amputation secondary to PVD. Following the amputation Z required assistance with showering and dressing as well as other domestic and community tasks. Z was mobilising with a wheelchair and was starting to commence prosthetic use and follow up as an outpatient. A home visit identified inappropriate access into the home due to several steps at the front and the back of the house; narrow doorways limiting access into bathroom/toilet, laundry and bedroom areas; narrow hallways limited turning circle for the wheelchair and split level shower/toilet area. Recommendations: Installation of a ramp at the back access into home, as well as a platform/porch area to ensure that the requirements remain within Australian Standards and is accessible by others using the home; widening of bathroom doorway to allow wheelchair access to toilet and shower area; construction of platform to build up step down to shower area; and increase doorway width to allow turning into certain rooms to prevent need to widen corridors. Z was open to recommendations however concerned about cost and structural changes to the home. Z arranged for the construction of the platform in the shower area. Z declined changes to door widths and hallways due to cost and ended up requiring a wheeled commode chair which he would transfer from his wheelchair through the doorway area onto to access the bathroom. These changes delayed the patient's discharge (estimated delay period of one week and estimated cost of delay $7,910).

Case study 5: Elderly (80+) person with Parkinson's disease and dementia who was admitted after a fall at home**.** Lives with spouse in three level unit. Entry was via the middle level of unit which contained the living room. Upper level of unit contained bedroom and bathroom, lower level of unit contained kitchen, family room and toilet. Given this person's Parkinson's disease, dementia and falls history, rails were

required prior to discharge: on the internal stairs; shower recess; and toilet. Discharge was delayed. Due to the nature of the rails, quotes had to be obtained and then permission sought from the owner of the unit for installation of the rails (estimated delay period of one week and estimated cost of delay $7,910).

The issues do not relate only to people who are aged, active young adults are involved in sports injuries and bicycle accidents and are also not able to return directly home and need to stay in care for longer periods.

Benefit 4: Participation in community life

The largest category of benefit of the proposed features is the fulfilment of the Victorian Government's policy commitment that people with a disability or other type of mobility impairment will not be excluded from key aspects of participation in community life. This commitment is about equity and dignity and cannot be expressed in monetary terms.

A life-changing impact is expected for many people with a disability. The accessibility features would enable people with a disability to participate in numerous types of activity that others may take for granted. These types of activity were outlined above and include the ability to visit friends and family inside their home and to escape a dwelling in a timely way in an emergency.

If the four features are adopted in all new Class 1 dwellings and a proportion of Class 2 dwellings, it would be some years before the majority of homes had the features. As noted above, after ten years, 17.8 per cent of homes would have the features. While not all homes would have the features, all people with a disability or mobility limitation would benefit from more accessible housing being included in the housing stock. This is because, as a consequence of the adoption of the features, people with a disability would have greater potential to access dwellings, and would be excluded from fewer dwellings, even though they would continue to be excluded from some dwellings. This benefit would apply to all people with a disability or mobility limitation, and all elderly people who would be more able to visit friends and family as a result of the adoption of the features in a proportion of the housing stock.

The dignity and participation impact of greater accessibility cannot be directly calculated in monetary terms, but DPCD believes it to be large in magnitude due to the life-changing potential for individuals currently impeded by a lack of accessibility features.

Other benefits from adopting the four features in a large proportion of new homes are expected to arise from enabling:

- elderly parents to visit the homes of their children and grandchildren;
- parents with young children in prams to socialise; and
- people with temporary injuries to visit friends.

Overall, adoption of the four features would make new homes more amenable and of higher quality. The greater the number of dwellings that incorporate the accessibility features, the greater will be the level of visitability in the built environment in outer Melbourne and major centres in regional Victoria. In particular, more accessibility features in private dwellings will enable more participation among new communities. These changes have a value for the whole community.

Total estimated benefits

The following table presents the estimated benefits of the four features. The estimated total quantified benefit is $5.4 million. This monetary estimate of the benefits excludes the life-changing impact of enabling people with a disability or mobility limitation to participate in key aspects of everyday life. The figure of $5.4 million also excludes the wider amenity benefits of more accessible housing. The figure also excludes the unquantified benefits of providing:

- more timely access by emergency personnel and egress by people with mobility restrictions;
- cost savings to private expenditure on home modifications, home care and aged care services;
- the ageing in place health benefits and cost savings to private expenditure of not having to move, or being able to move to more suitable accommodation nearby;
- the beneficial impact on private carers;
- the ability for people with mobility restricting conditions in Table 4.7 (and other people with mobility restricting conditions not in Table 4.7) to return home earlier from acute care or from sub-acute care or rehabilitation because their home had the four accessibility features.

These unquantified benefits could be quantified if the data were collected in such a way that enabled them to be quantified.

Table 4.9: Estimated benefits

Category of benefits	$ million
Quantified component of Benefit 1 (Safety)	1.95
Quantified component of Benefit 2 (Reduced cost of future adaptations)	0.07
Quantified component of Benefit 3 (Lower aged care and healthcare costs)	3.36
Quantified component of Benefit 3 (Hospital discharge benefits)	Not available
Total quantified benefit	**5.4**
Unquantified benefits of greater safety and amenity, better quality homes and ageing in place (preventing injuries and deaths, reducing private expenditure on modifications and care, assisting carers, reducing public expenditure on crisis accommodation and non-quantified shorter stays in acute and sub-acute care)	Unquantified benefits
Unquantifiable component of Benefit 4 (Enabling greater participation in community life)	Significant unquantifiable benefit
Total including unquantifiable component of Benefit 4	**5.4 plus unquantified benefits listed above, and unquantifiable benefit from greater participation**

It has been difficult to quantify all the benefits, given that in many cases the data is not collected in the required form. DPCD will have some work undertaken to generate the data to further quantify the benefits.

The following sub-section considers the cost of the four accessibility features in comparison to the cost of adapting housing for accessibility once the housing has been built.

Retrofitting cost: benchmark cost for analysing the cost of designing-in the four features

In understanding the cost of the four features, it is helpful to compare it to relevant benchmarks and reference costs. A benchmark that can be expressed precisely in monetary terms is the cost of retrofitting the set of minimum visitability and adaptability features to the homes of people with a disability or mobility impairment (rather than to all new homes). While retrofitting the features to such a subset of the total number of new homes would not achieve the desired broad application (which is critical for the goal of visitability), from the point of view of

comparing quantifiable costs and benefits, the cost of retrofitting the features is a useful benchmark against which the cost of designing-in the features can be measured.

Table 4.10 shows the estimated cost of retrofitting each of the proposed features.

Table 4.10: Costs of retrofitting features: Class 1 building

	Retrofit features per single house (BCA Class 1)
1. Path of travel to entrance Minimum clear width of 1 metre (Class 1) 1.2metres (Class 2) continuous slip resistant, traversable path of travel is required from the street or, car parking and for Class 2, a ramp from any required accessible car park (Class 7 a). Pathways must not have a slope steeper than 1:20. Ramp grades must be between 1:14 and 1:20.	$1,000 (demolish existing path; build new path ramped up to porch)
Water inundation at the entrance threshold must be prevented (achieved with door seal)	$400
2. Doorways and passage width Minimum clear opening of 820mm.*	$10,000
Minimum passage width of 1m between walls and no change of level between required doors.	$6,000 (move corridor wall on one side)
3. Reinforced bathroom and toilet walls Noggings must be installed above finished floor level for the future fitting of grab rails to the walls of the entry level toilet, shower and bath.	$0*
4. Toilet access A toilet suitable for people with limited mobility must be included on entry level (Class 1). A toilet compartment in a dwelling must have 1.2m between the front of the pan and any part of a swing door and 900mm between walls. For a toilet located in a bathroom it must be in the corner.	$2,000 (Sliding door after removing existing swing door)
Total Extra Over Cost of Features (Items 1-4)	**$19,400**
Total Unit Cost	$320,000 (includes land, paths and driveway)
Extra Over Cost of Features as a proportion of Total Unit Cost	6.1 per cent

Note: These estimates are based on the same assumptions as for Table 4.2; see Appendix 5. The assumptions are based on typical industry designs. * This is the minimum cost, based on

installing grab rails to suit existing stud locations; however this does not apply a consistent standard for grab rail locations. The cost to achieve a consistent standard would be $14,000 (demolish existing linings to the toilet, shower and bath, install reinforcement to required locations and reinstate the fit-out).

Table 4.10 shows that the cost of retrofitting the features is high. The total expected additional cost of retrofitting the design features in a Class 1 dwelling is estimated to be $19,400 or more than 6 per cent of the total cost of a new dwelling. The reasons for this high cost are as follows:

- the cost of demolishing an existing path and building a new compliant path is significantly higher than designing-in a particular path width and slope up-front;
- the costs of raising the existing porch level and levelling existing steps to the entry and at the threshold are high as they require rebuilding of the porch and steps;
- widening a doorway can require structural changes to a building;
- the cost of removing changes in level can be significant depending on the extent of the change in level;
- widening existing passageways can require significant structural works; and
- the cost of moving a toilet can be significant, requiring changes in plumbing, tiling and other finishes and fixtures.

The retrofitting cost is much greater than the cost of including the features up-front at the design stage. The estimated extra over cost of retrofitting the features is 2,230 per cent higher than the cost of including the set of minimum features up-front as a design feature, in the same type of dwelling. The cost of retrofitting the design features in a Class 2 unit would be similar to a Class 1 building, or marginally less, depending on the existing access to the unit for the path of travel.

Comparison between the up-front cost and the retrofitting benchmark cost can be understood in a number of ways. If the government were to provide the desired visitability and adaptability features by funding a program to retrofit the homes of the people living in private accommodation with a disability or mobility impairment, then this retrofitting cost would represent the minimum per-home cost of the program. The total program cost, excluding administrative costs, would be approximately $3 billion if applied to 155,000 existing homes, and approximately $60 million if applied to 8.7 per cent of new homes. These costs are clearly prohibitive and arise from the high cost of retrofitting the features compared with designing-in the features at the design stage.

Another way to consider the difference between the designing-in costs and the retrofitting costs is in relation to social efficiency. In the case of achieving visitable and adaptable housing, an indicator of social efficiency is whether the ratio of replacement and retrofitting costs to up-front costs is higher than the share of people in the community who require accessibility features. Let 'x' be the proportion of households requiring at least minimal accessibility features in their home. Widespread adoption or almost widespread adoption of the minimum accessibility features at the design stage is efficient when the ratio of retrofitting costs to up-front costs is higher than the following ratio: (1–x)/x. This indicator is conservative as it ignores the wider health and community benefits from visitability, and it ignores the fact that people with full mobility will benefit from the accessibility features. In this case, the proportion of households is 8.7 per cent, and the value of (1–x)/x is 10.5. Comparing this with the (significantly higher) ratio of retrofitting costs to up-front costs (22.3) shows that widespread adoption or almost widespread adoption is efficient from the point of view of social cost. This is because of the high cost of retrofitting the features (22 times the cost of designing-in the features up-front) compared with designing-in the features. The whole community would face a significant and inefficient cost impost where retrofitting was adopted for 8.7 per cent or more of households. (This cost comparison is based on the direct financial costs of the proposal. The outcomes would differ if other costs, such as the opportunity cost of space, were included.)

Total cost of widespread adoption of the four features at the design stage

The first-year total cost of designing-in the four minimum accessibility features in all new Class 1 dwellings and a proportion of new Class 2 dwellings is estimated to be $31 million (Table 4.11). **Accordingly, the cost of retrofitting the features to 8.7 per cent of new homes is approximately double the cost of including the features up-front in all new homes, yet including the features in only 8.7 per cent of homes would not generate the participation and dignity benefits that would arise from widespread visitability.** Including the features in only 8.7 per cent of homes would not achieve the Government's policy goal of widespread visitability.

Table 4.11: Cost of widespread adoption of the four features

Type of housing	Number affected	Cost per home ($)	Total cost ($000)
Single Houses (Class 1) (1)	34,651	870	30,146
Medium Density (Class 2) (2)	464	190	88
High-Rise (>4 storeys) (Class 2) (3)	612	1000	612
Total			30,847

Notes: The estimated costs were provided by an independent quantity surveyor, Davis Langdon. Alternative estimates of costs for single houses (Class 1) provided by building sector participants are included in Appendix 6. Overall, the builders generally concurred that the proposed features would cost about $1,000 but this would depend on individual house designs.[92] For example, where the design of a home at ground level was step-free, incorporated open planning, wider doorways and passages and masonry walls there would be no additional cost.

The costs are based on there being no need to increase the size of the dwelling. While dwelling sizes vary, DPCD and the independent quantity surveyor analysed a range of dwelling types and found that the building area does not need to increase to accommodate the features. Changing the floor plan (eg. moving internal walls) at the design stage will accommodate the space requirements of the accessibility features. The relevant changes in dimensions are small, eg. the width of some rooms may be reduced by 5cm where they abut a minor hallway, and some toilet compartments may be increased in length by approximately 300mm to accommodate the space requirement. Where the hallway widths and the toilet areas required changes to the floor plan to accommodate the features, there may a requirement to find up to 0.5 square metres from other areas in the dwelling.

Consistent with the level of adoption of the features set out in the Government's policy objective, the figures for medium density Class 2 were adjusted to reflect the application of the features to ground-level dwellings, and the figures for high-rise Class 2 buildings were adjusted to reflect application of the features to 1 in 5 dwellings.

To calculate the costs over ten years, the estimated net present value (NPV) of $30.8 million per year is $256.2 million (constant prices, 3.5 discount rate). (This figure excludes one-off implementation costs for government and the industry, and ongoing industry costs – these additional costs are analysed in the next sub-section.)

[92] Davis Langdon, 14 July 2009.

Implementation and adjustment costs

Another important consideration in the comparison of costs and benefits is the extent to which there will be implementation and adjustment costs. In this case, the principal implementation costs relate to the cost of industry participants preparing to apply the visitability and adaptability features, and the associated government implementation costs (familiarisation seminars etc.). Industry participants would also incur ongoing costs from enforcing and complying with any associated requirements.

The implementation and adjustment costs for industry are likely to be relatively low because:

- the features are of a minimal nature;
- the features do not require the purchase or use of new equipment, tools, materials, parts or fittings;
- some building firms that are not including accessibility features in all of their new homes are including some accessibility features in some of their buildings;
- accessibility and adaptability issues and features are widely known in the sector and are expressed in existing Australian Standards;
- enforcement of building-in the features can be included in existing checking and inspection processes by the relevant building surveyor.

The Building Commission and industry peak bodies have indicated that the proposed requirements are minor and the enforcement of the BCA standards can be managed through existing building permit inspection processes. The estimated costs of amending standard plans have been ascertained from the building industry. The expected one-off cost to the industry is not expected to exceed $250,000 (amending designs, see Section 4A for explanation of calculation method), and the expected ongoing cost to the industry is not expected to exceed $340,000 (ensuring compliance with any new requirements, see notes below Table 4.12 for explanation). Table 4.12 shows the total expected one-off costs and ongoing costs.

DPCD will work to clarify the extent to which the proposed requirements will impose additional administrative costs on business, and whether a Standard Cost Model measurement needs to be undertaken.

Table 4.12: Total estimated costs including implementation and enforcement

Type of housing	One-off costs ($000)	Ongoing costs ($000)
Cost of the features (extra over) (maximum annual cost)	0	30,847
Costs to industry (amend drawings and enforcement)	250	340
Costs to government (implementation and seminars)	600	0
Total	**850**	**31,187**

Notes: An estimate for the ongoing cost for enforcement by building surveyors was sought from a building surveyor representative. The estimated building surveyor's time involved is five minutes to check compliance on the plans (a drawing of the noggings has been provided in the proposed regulation) and five to 15 minutes on site to check compliance (of the level entry, wider doorways, halls and nogging positions). The inspections would be simpler where homes have a concrete slab construction because the threshold ramps would be integrated into the slab (advised by the building surveyor representative to be 80 per cent of cases). The inspections of homes with slab construction are expected to take five minutes (80 per cent of cases) and inspections of timber framed floors are expected to take 15 minutes (20 per cent of cases). The average weighted estimated cost of building surveyors' time is:

- $3.92 per dwelling (based on 5 minutes of building surveyor's time to check compliance on the plans at an average cost of $47 per hour).[93] The estimated cost of checking compliance on the plans is $140,000 if 35,727 homes with the features are built in Victoria each year; and
- $5.48 per dwelling (based on an average of 7 minutes of building surveyor's time to inspect the site, and an average cost of $47 per hour).[94] The estimated cost of these inspections is $196,000 if 35,727 homes with the features are built in Victoria each year.

The total estimated cost of additional ongoing enforcement, comprising compliance and inspections, is $336,000.

The actual implementation and enforcement costs for government would vary depending on which of the five options was adopted. The options are discussed in the following section. There would be some additional costs to government for implementation and enforcement of a variation to the BCA. The Building Commission advises that the implementation would be managed as part of the annual amendments to the BCA, and industry familiarisation would be part of this annual cycle. The Building Commission and DPCD would conduct industry seminars

[93] Based on the average salary for BCA consultants of $91,912, or $47 per hour. MyCareer, accessed October 2009, http://content.mycareer.com.au/salary-centre/construction-architecture/-/vic
[94] Based on the average salary for BCA consultants of $91,912, or $47 per hour. MyCareer, accessed October 2009, http://content.mycareer.com.au/salary-centre/construction-architecture/-/vic

for building practitioners during the public consultation period on the RIS. The implementation cost for government is estimated to be $600,000.

Once these additional costs are included in the NPV calculation, the expected NPV of the costs over ten years is $259.8 million.

Conclusions on the costs and benefits of the four features

The following conclusion was reached in the analysis of the expected costs and benefits of the four features:

- Against the reference cost of retrofitting the minimum set of features, the cost of designing-in the proposed features is very low. The costs are incremental in nature and in some cases negligible.
- The net benefits of designing-in the proposed features – with these benefits including the equity and dignity benefits of widespread visitability and adaptability in new housing, along with other benefits such as greater safety and amenity, better quality homes and ageing in place, lower healthcare costs – are assessed as outweighing the costs.

This conclusion rests on the nature of the set of proposed features. Rebuilding single dwellings to retrofit such features that could have been included up-front at negligible cost is wasteful from the point of view of social cost. However, building-in the accessibility features in new homes that will not immediately house people with limited mobility is, on the whole, not socially wasteful because:

- the proposed four features are of a minimal nature and entail low costs when built in up-front;
- the features would improve the quality and amenity of all homes. For example, wider doorways and passageways, and reinforced walls, are quality enhancements;
- the features will improve the safety of homes significantly for older people and also young children and reduce community healthcare costs;
- the features would allow visitation by people with limited mobility; and
- the features would have value to the home owner in the event of future temporary or permanent mobility impairment, or some other need such as the use of a child's pram, and everyday needs such as carrying shopping and moving appliances and furniture.

The RIS concludes that the features will generate net benefits, provided they are applied in a manner that achieves a high degree of adoption, and in a manner that entails low administrative and compliance costs.

Identification of the option with the greatest net benefit

Following this conclusion, that there are net benefits from achieving a high degree of penetration of the minimum visitability and adaptability features as design features in new housing, it is necessary to identify the intervention option that achieves the greatest net benefits. There are two principal aspects of this: the extent to which a sufficiently high level of penetration of the minimum features is achieved in new housing; and the up-front and ongoing costs to the community that arise from making the intervention.

These aspects formed the basis of assessment criteria that were used in a Multi-Criteria Analysis (MCA) of the intervention options. The MCA provided the decision criteria for the analysis of options.

Background to Multi-Criteria Analysis

The estimated costs of the proposed set of minimum accessibility features were presented above. Multi-Criteria Analysis (MCA) was used to compared the five options. MCA enables both quantifiable and non-quantifiable costs and benefits to be considered. The MCA approach is described in part 5–18 of the *Victorian Guide to Regulation*.

This approach requires judgements about how proposals will contribute to the criteria that are chosen to reflect the objective of the intervention. A qualitative score is assigned, depending on the impact of the proposal on each of the weightings assigned to each of the criteria, reflecting their relative importance, and an overall score can be derived by multiplying the score assigned to each measure by its weighting, and then summing the result. If a number of options are being compared, then the option with the highest score represents the preferred approach.

MCA Assessment of visitability and adaptability options

To assist in making a considered assessment of the options, an MCA assessment was undertaken. Reflecting the government policy objective of the intervention, and the objectives of the *Building Act 1993*, two criteria were chosen and

associated weightings were selected. The criteria, and the weightings applied to the criteria, are as follows:

- effectiveness in achieving minimum standards of visitability and adaptability (50 per cent); and
- low cost (50 per cent).

The criteria reflect the importance of the objective of government intervention, to provide visitable and adaptable housing in fulfilment of the Victorian Government's policy commitments; and the importance of not imposing significant costs on the industry and the wider community, or making interventions that are unnecessarily burdensome.

In the conduct of the MCA, the options were compared with the 'base case' (see below) and with each other. For the purposes of an MCA assessment, an assigned score of zero (0) represents the base case, while a score of plus one hundred (+100) means that the alternative fully achieves the objectives of that criterion. A score of minus one hundred (–100) means that the proposal does not achieve the objectives of that criterion. Therefore, by definition, the base case receives a net score of zero.

The base case

For the purposes of options analysis, a 'base case' is identified for comparison purposes. The base case represents the situation where the proposed approach is not adopted. For the present RIS, under the base case the existing Building Code of Australia provisions would remain in force.

Presently, there are no requirements for accessibility features in private dwellings (BCA Classes 1 and 2), though the industry is providing a degree of accessibility to the common areas of BCA class 2 buildings. As discussed in Section 1, the market on the whole is not providing accessibility features in Class 1 dwellings. The great majority of new homes being built in Victoria are unvisitable, inaccessible and costly to adapt for people with a disability or some other form of mobility limitation. Most importantly:

- the majority of new homes built on level ground or nearly level ground nevertheless feature steps to the entrance, or other physical barriers at the entrance which prevent access by people with limited mobility and result in fall injuries;
- the majority of new homes are being built with door opening widths that do not permit access by a person in a wheelchair or other mobility aid; and

- bathrooms are not being designed to allow a mobility impaired person to use them with assistance in a dignified manner.

Under the base case, the Victorian Government would continue to provide assistance for people with long term disability or who are frail aged. The assistance would be provided through loans, funding and advice for home modifications. Subsidies for home modifications would continue on a limited basis. The Victorian Government programs and policies that support people with a disability or limited mobility were described in the preceding sections.

The MCA was used to assess the options described in the previous section, namely:

- Option 1: Informing and educating consumers and industry participants via public information and education campaigns;
- Option 2: Industry self-regulation;
- Option 3: Government regulation: minimum levels of visitability and adaptability;
- Option 4: Government regulation: above-minimum levels of visitability and adaptability; and
- Option 5: Market-based instruments (tax and subsidy scheme): minimum levels of visitability and adaptability in new homes.

Option 1: Informing and educating consumers and industry participants

An information and education campaign would seek to provide home buyers with information to allow them to make informed, rational decisions. This option would improve efficiency to the extent that it left industry participants better informed about accessibility issues.

An MCA assessment was undertaken of this option. A targeted information campaign is likely to result in some behavioural change and voluntary adoption of accessibility features in new housing. Such an information campaign could demonstrate the private benefits (eg. the longer term amenity benefits and housing quality associated with accessible housing features) along with the broad community benefits (eg. from visitability and non-exclusion).

The main disadvantage of option 1 is the likely level of take-up of the minimum features because they remain voluntary. By way of comparison, drink driving or speeding campaigns can be effective in reducing these activities, however, a

significant minority fail to change their behaviour. Furthermore, such campaigns often complement other measures, such as rigorous enforcement. Accordingly, it is assessed that, while a well targeted comprehensive information and education campaign could result in a greater uptake of accessibility features, without complementary measures the level of adoption is likely to be limited. Option 1 therefore is rated poorly with regard to effectiveness.

Home buyers often purchase new completed houses or purchase off the plan. This may limit the extent to which they can influence builders to incorporate accessibility features in housing.

The EOCV noted in the VCEC 2005 inquiry: 'reliance upon information and education alone is insufficient to facilitate attitudinal change towards eliminating discrimination in the absence of any regulatory incentives or enforcement. Relying on non-regulatory alternatives such as moral suasion and education is unlikely to be as effective as regulation in this area' (submission 75, p. 9).

The web-directory component of this option would improve the information available to consumers regarding accessibility features in existing homes, but would not be expected to increase the adoption of accessibility features in new homes. It would therefore not support achievement of the policy objective of widespread adoption of the accessibility features.

A score of +25 is assigned to the effectiveness criterion for Option 1.

Achieving behavioural change in consumers can be cost effective because consumers internalise these behaviours into their decision-making process (eg. applying sun screen). On the other hand, the direct costs of media advertising and other means of marketing and communication can be high. Option 1 would entail some ongoing costs in the form of advertising and marketing expenditure. The estimated cost of the information and education campaign is shown in Table 4.13 below. Analogous government information campaigns include the 'Black Balloon' campaign aimed at reducing energy use and greenhouse emissions. The associated costs are primarily in the form of media management costs, printed information materials, event management costs, media production costs and the cost of print advertising and broadcast time. The campaign would run for one year. The estimated cost of $4.9 million is equivalent to approximately one sixth of the initial annual extra-over construction cost of the minimum set of features.

Given that the government currently has a range of accessibility related campaigns in place (such as the Build for Life campaign), this option would be feasible and practical, although considerably more costly for government than the base case. This criterion receives a score of -15.

Table 4.13: Estimated direct costs of information and education campaign (Option 1)

Campaign element	Details	Estimated cost
Media campaign and stakeholder campaign	Includes media pitching and liaison, development of news releases, recruitment of industry champions, drafting media copy for industry publications and websites, booking and participation costs for industry shows, and development of an industry award for visitable and accessible design.	$200,000
Advertising campaign (print and online)	Research print and online advertising targets; develop advertising schedule; buy space via government purchasing requirements	$450,000
Video and audio content	Brief, develop and manage video and audio content	$120,000
Advertising campaign (television and radio)	Media buy via government purchasing requirements	$3,050,000
Website	Adaptation of 'Build for Life' site; content and updates. Development of an information website to assist people to find housing that meets their accessibility needs (web directory)	$710,000
Events	Planning and concept for 10 metropolitan and regional events; media strategy and liaison; speaker briefings (including for champions); event management and logistics	$120,000
Printing costs	Printing of brochures, merchandise, guides, newspaper inserts, banners, other collateral	$120,000
Copywriting and management	Includes copywriting for consumer guides and for print and web advertisements	$60,000
Account management	Work plans, meetings, client liaison and strategic advice	$25,000
Minor disbursements	Couriers, photocopying, intra-state travel etc.	$7,500
Total		**$4,862,500**

In summary, an information and education campaign is likely to result in some voluntary behavioural change. However, the level of this change is unlikely to achieve the Government's policy goals. The expected limited uptake of accessible housing features results in a net score of +5.

Table 4.14: Multi-criteria Analysis Assessment of Option 1

Criteria	Weighting	Assigned Score	Weighted Score
Effectiveness	50	25	12.5
Cost	50	-15	-7.5
Total	**100%**		**5.0**

Option 2: Industry self-regulation

The potential benefits of self-regulation can be significant. As major industry participants often set the industry standards, and as self-regulation utilises the

expertise, experience and goodwill of those in the industry, firms may be more aware of their obligations, and compliance may be high. For the same reasons, self-regulation may be designed in such a way as to minimise compliance costs, and encourage innovation. Self-regulation also lowers administrative costs for government, compared with binding government regulations.

However, self-regulation can be used to promote anticompetitive behaviour (eg. rules may implicitly create barriers to entry). Also, under self-regulatory arrangements, enforcement or disciplinary processes may not be transparent. In the event that some industry participants chose to 'go it alone', sanctions may be weak or ineffective. Accordingly, self-regulation is best suited to sectors where the problem to be addressed has a low-risk of occurring or is of low impact.[95]

A regime of self-regulation in relation to accessible housing would likely be minimum requirements based on aspects of the Australian standards. As government regulations would also reflect aspects of the standards, the requirements facing industry participants are unlikely to differ significantly between the government regulations and a self-regulatory regime.

However, a self-regulatory regime would entail costs that government regulations would not. A self-regulatory regime would have weaker enforcement and less certainty for industry participants. To the extent that there would be greater diversity in compliance and practice under a self-regulatory regime than under the government regulations, some participants would operate at below industry best practice, and some participants would seek to adopt innovative methods that are at or above industry best practice.

The overall effect of a self-regulatory regime for accessible housing is likely to be lower levels of visitability, adaptability and accessibility than would prevail under a regime of minimum standards set through government regulations. The minimum standards set by regulation would still permit innovation, and the installation of levels of accessibility above the minimum prescribed in the regulations. However, a self-regulatory regime would permit a higher degree of opting out, and therefore higher levels of non-compliance.

The MCA approach was used to assess the costs and benefits of industry self-regulation. With government support, codes of practices could be established by peak housing industry bodies, which suggest incorporation of accessibility features into housing design.

Self-regulation, like information campaigns, are similar insofar as they both rely on voluntary behavioural change. In addition, not all building practitioners are members of industry associations. If sections of the industry chose to opt out of the

[95] Department of Treasury and Finance, 2007, B–1 p. 129.

self-regulatory regime, the current situation would continue to prevail, ie. very little new housing would have accessibility features built in. If a self regulatory regime failed to achieve widespread visitability and adaptability in new single dwellings and significant visitability and adaptability in new high-rise housing, the resulting situation would be characterised by:

- ongoing poor visitability and adaptability;
- confusion for the sector and for consumers; and
- the loss of the potential cost reductions from standardization of accessibility features.

A high degree of opting out would be likely given that:

- the great majority of builders and developers are presently not offering accessible housing options; and
- there is likely to be industry opposition to binding minimum accessibility features.

Nevertheless, this alternative, if promoted by the industry, could be more effective than an information campaign alone. This is because the decision to include accessibility features would be made directly by the builder or developer. Accordingly, this criterion is assigned a score of +35.

In terms of the cost criterion, a characteristic of self-regulation is that it is usually cost effective. A code would need to be developed, periodically revised and promoted. At the margin, a small amount of these costs may be passed on to consumers. The overall cost and feasibility of this criterion results in an assigned score of -10. This assessment results in a net score of +12.5 for this option.

Table 4.15: Multi-criteria Analysis Assessment of Option 2

Criteria	Weighting	Assigned Score	Weighted Score
Effectiveness	50	35	17.5
Cost	50	-10	-5.0
Total	**100%**		**12.5**

Option 3: Government regulation: minimum levels of visitability and adaptability

Strengthening the BCA would result in adoption of accessibility features in all new housing because these features would be made compulsory. Hence, well selected

design features could deliver benefits well above the levels associated with voluntary action. Also, this option is likely to achieve high degrees of visitability and adaptability in new homes without significant subsidies. A high degree of adoption of the features is important because it achieves the policy objective. In this option, unlike a self regulatory regime, clear and consistent standards would apply across the whole residential construction sector. This criterion is assigned a high score of +85.

This option would impose greater costs on consumers/homeowners because the proposal will affect the entire population of new home owners. The estimated costs are based on features outlined in the previous sections. The design changes would become part of the standard industry designs and so would not attract variation margins or delay costs.

The enforcement costs are expected to be low because instances of non-compliance with most of the proposed minimum features will be simple to identify. This is in contrast to some other aspects of building regulation, such as electrical installations, where specialist inspectors are engaged to ensure that specified standards are met.

Also, including the features up-front at the design and construction stage minimises the associated social costs because it prevents the need to retrofit the features, which is considerably more costly.

Assessed against the Premier's Guidelines (section 1.09), the regulatory instrument of this proposal is likely to be effective in achieving the government's objectives. This criterion was assigned a score of -35. Table 4.16 below shows that this results in an overall score of +25.

Table 4.16: Multi-criteria Analysis Assessment of Option 3

Criteria	Weighting	Assigned Score	Weighted Score
Effectiveness	50	85	42.5
Cost	50	-35	-17.5
Total	**100%**		**25.0**

Option 4: Government regulation: above-minimum levels of visitability and adaptability

Like Option 3, the effectiveness of this Option is expected to be high as the features would be applied as part of the requirements of the BCA. This option was assigned an effectiveness rating of +90. Options 3 and 4 are similar with regard to how

effectively they would achieve the Government's policy objectives of achieving wide adoption of the proposed four features. Both options would involve regulation, with the associated enforcement apparatus and legislative basis. Note that even though Option 3 involves a lower level of accessibility than Option 4, both options would establish a level of accessibility that met the Government's policy objectives. Option 4 was rated marginally higher than Option 3 with regard to effectiveness, reflecting the fact that, if the level of accessibility in Option 4 was established in regulations, the Government's accessibility goals would be marginally more likely to be achieved because those goals would be encompassed within the level of accessibility mandated by the Option 4 regulations, and therefore 'under-compliance' with the Option 4 requirements may still involve compliance with the Option 3 requirements.

The estimated costs for Option 4 were calculated based on the features described in Table 3.1 in Section 3. As the table shows, the design features are more extensive in Option 4 than in Option 3. Accordingly, the cost impact is larger (and less affordable). In particular, the requirements for circulation clearances, a larger bathroom, a larger laundry and wider hallways require increases to the overall floor area.

The costs of the Option 4 features were estimated using a reference house design, amended to incorporate the ten features. The scope broadly covered the redesign of an average dwelling by amending the following:

- Doorway to 850mm clear opening width. Hallways to 1000mm clear opening width, except to 1200mm clear opening width where there are doorways or a change of direction;
- Bathroom and ensuite layouts;
- Circulation space 1550mm for kitchen, living, dining and laundry areas;
- Removing steps and introducing ramps and flush floor finishes;
- Door hardware and electrical switches and power outlets at accessible locations;
- These items may increase the dwelling area, depending on the design of the dwelling.

The costs were current as at 19 June 2008. The following assumptions were made:

- features are designed-in up-front;
- external doors are solid core with timber frames, internal doors are hollow core with timber frames;
- showers on waterproofed tiled base over the slab with shower curtain only;

- external landscaping and paving is part of the works, therefore changes externally for ramps and graded paving attract only minor additional costs;
- Floor area increases for wider hallways and circulation clearances (but not in low cost estimate).

The estimated costs are shown in the following table.

Table 4.17: Estimated additional cost of above-minimum features (Option 4) per single dwelling (extra over)

Aspect of building	Estimated additional construction cost: High cost estimate	DPCD Mid point estimate **	Estimated additional construction cost: Low cost estimate
Entry to property	$2,795	$1,657	$500
External and internal doorways	$1,490	$1,366	$1,200
Circulation spaces	$15,525	$7,763	0
Bathroom and toilet	$3,933	$1,774	-$400*
Total	$23,743	$12,560	$1,300

Source: Building Commission, based on Davis Langdon Domestic Disability Cost Overview 19 June 2008. Note: an inflation escalation factor of 3.5 per cent was applied to update these costs to 2009 levels.

*Credit due to existing bath and shower swapped for a larger shower.

** DPCD has included a mid point estimate so that the cost estimates for the above-minimum features (10 features) (option 4) can be compared to the cost estimates for the four features (option 3). A high and a low cost estimate for inclusion of the 10 features ($23,743 and $1,300) were provided. To accommodate the features the high cost estimate assumed an increase in the overall floor area. This involved widening some hallways and increasing the area of certain spaces, such as the kitchen, laundry and bathroom. The low cost estimate assumed that the spaces in the house were large enough to accommodate the features which were accommodated by making design changes (for example, the bath was removed to allow for the shower to increase in area).

The table shows that the cost of these more extensive features are considerably higher (14 times higher) than the cost of the minimum set of features. The main reason for the large cost difference is the need to increase the size of homes to account for the larger circulation spaces. The implementation and administration costs for this option would be similar to those costs for Option 3, except that Option 4 would require a more significant monitoring and enforcement regime to address the non-compliance issue mentioned above. On the cost criterion, this option is therefore assigned a rating of -50. Overall, this Option received a score of +20 in the MCA.

Table 4.18: Multi-Criteria Analysis Assessment of Option 4

Criteria	Weighting	Assigned Score	Weighted Score
Effectiveness	50	90	45.0
Cost	50	-50	-25.0
Total	**100%**		**20.0**

Option 5: Market-based instruments (tax and subsidy scheme): minimum levels of visitability and adaptability in new homes

Differential levies or rebates are sometimes used by governments to encourage certain behaviours or actions. For example, rebates are offered for the adoption of solar hot water systems and LPG conversion of vehicles, while differential tax rates apply to low alcohol beverages or unleaded petrol (formerly).

These instruments can be relatively effective in changing achieving adoption/behavioural changes. They are, however, generally very expensive (in order to change consumer behaviour) and are often temporary measures.

This option may directly benefit those who currently needed the four accessibility features as they would pay lower subsidised costs for the four features.

However, the main shortcoming of this option is that it would not achieve the objective of widespread adoption of minimum levels of visitability, and therefore would not achieve the Government's policy objectives with regard to participation in social life and work. This is because the set of (minimum) accessibility features would be adopted in a smaller proportion of new dwellings (e.g., in the homes of people with limited mobility, not in the homes of people whom they are likely to visit but who do not have limited mobility). For those people who may have a future need, limited adoption of the features would result in higher costs through the need for more home modifications and longer stays in hospital and/or institutional care. Also, this option is subject to the problem that, when a significant proportion of new homes are built, they are sold, so the future owner is not known, and therefore there is no opportunity to include the accessibility features up front. In new developments, for example, homes are often built before they are offered for sale. This option is assigned an effectiveness rating of + 50.

The market-based instruments option would be more expensive than the base case. If a concessional building levy was offered at the current rate then this could impose a significant cost to government revenue (the extent varying with the size of the differential). Other rates could be increased to offset this, but this could raise

equity issues. As with any multi-rate tax/levy, government administrative costs would be higher and unintended consequences may arise.

A wide range of potential tax and subsidy schemes exist. Choices about the characteristics of such schemes would affect the estimated costs and benefits. For example, a scheme that achieved a relatively low level of accessibility would be expected to generate fewer benefits but could also be associated with lower costs. Conversely, a scheme that achieved a high level of accessibility may achieve higher accessibility benefits for people in the community, but at the expense of higher modification costs.

Table 4.19: Multi-Criteria Analysis Assessment of Option 5

Criteria	Weighting	Assigned Score	Weighted Score
Effectiveness	50	50	25.0
Cost	50	-20	-10.0
Total	**100%**		**15.0**

Summary of MCA results

The following table summarises the results of the MCA of the options. The table shows that the first regulatory option (Option 3) achieved the highest rating in the MCA, and is the preferred option.

Table 4.20: Summary of MCA results

Option	Effectiveness (weighted score)	Cost (weighted score)	Overall score
1. Information and education campaign	12.5	-7.5	**5.0**
2. Self-regulation regime	17.5	-5.0	**12.5**
3. Regulation (minimum set of features)	42.5	-17.5	**25.0**
4. Regulation (above-minimum set of features)	45.0	-25.0	**20.0**
5. Tax and subsidy scheme (minimum set of features)	25.0	-10.0	**15.0**

4A. IMPACT ON SMALL BUSINESS

Key points

- Given the structure of the building industry, the impact of the proposed variation would fall proportionally more heavily on small businesses.
- However, the overall impact and the compliance burden are not expected to vary significantly between a typical small business and a large business.

The Victorian Guide to Regulation provides a definitive guide to developing regulation in Victoria within the context of the government's vision of well targeted, effective and appropriate regulation. All new regulatory proposals that have an appreciable burden on business must be thoroughly assessed to ensure the benefits to the community outweigh the costs and that the best option is considered. In particular, it is important to examine the impact on small business because the compliance burden often falls disproportionately on that sector of the economy.

As at June 2007, the total number of small businesses which engage in construction in Victoria was 76,644 (comprising 46,689 non-employing businesses and 29,955 businesses employing 1–19 employees). [96] Small businesses in the construction sector comprise 98.3 per cent of the total number of construction businesses in Victoria, which is slightly higher than the state average of 96 per cent.[97]

Therefore, given the structure of the industry, the impact of the proposed variation will fall proportionally more heavily on small business. However, the overall impact should not vary significantly between large and small businesses. In particular:

- small businesses are not expected to receive disproportionately lower or higher benefits than larger organisations as a result of the proposal;
- sanctions for non-compliance are to be applied on a per unit basis and are not expected to affect the viability of small businesses; and
- the proposal has no other features that are likely to affect small businesses in a disproportionate way.

In the discussions with building practitioners in the initial consultation there were indications that transitional issues of familiarisation, re-designing and checking were manageable under current arrangements.

[96] ABS Cat. 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2003–June 2007, Businesses by Industry Class by Main State by Employment Size Ranges, Construction (Victoria).
[97] ibid.

Building practitioners involved in the domestic construction industry and who are unfamiliar with accessibility features will have the opportunity to attend the industry seminars run by the Building Commission and the DPCD during the public consultation on the RIS. These seminars will include technical drawings of the proposed features, some of which are included in the proposed regulation.

Building surveyors who subscribe to the BCA and are members of the industry peak bodies will receive information relating to any regulatory change, as the BCA is updated annually in May.

The initial consultation indicated that costs are more able to be absorbed by larger building companies; re-designing homes is more of an issue for small builders, who are less able to absorb costs. The reasons given were that larger building companies will offer new products (house designs) to the market on a regular basis – therefore incorporating the accessibility features can be absorbed in this regular redesign process – whereas small builders may have a consistent offer of one or a few plans. The differences between large and small builders, however, are not expected by DPCD to be large, given the nature of the four features, and current methods of computer-aided building design. For small builders, the principal design changes to floor plans would relate to decisions about how to achieve the toilet suitable for people with limited mobility features. Participants in the general building industry will be familiar with the pathway requirements, which are similar to the standards for non-residential construction.

An estimate of the cost to amend the existing plans of a home, including the design and the construction documentation, was sought from a builder. The estimated cost is $500. Data are not available on the number of standard plans that exist and would need to be amended to incorporate the features. DPCD considers that the aggregate cost of amending standard plans will be no more than $250,000 (ie. no more than 500 standard plans would need to be revised). Industry participants would have sufficient time to adjust in an orderly and efficient way, given the timeline for implementing amendments to the BCA (see Section 7).

Prices may vary on the costs to amend the existing plans of a home. Feedback is sought during the public consultation on the extent of re-design of plans required in regard to the four features, and particularly in regard to the toilet suitable for people with limited mobility. Feedback is also sought in regard to the cost to amend the existing plans of a home by small builders.

5. COMPETITION IMPACT ASSESSMENT

Key points

- The regulatory proposal represents a minor variation to the overall regulatory framework for the building industry. Consequently, this RIS finds that there are no broader competition impacts.
- The proposed variation would not restrict competition. The impact on business costs is expected to be negligible; the proposed minimum standards would not affect the ability of businesses to innovate; and the proposal entails a small, incremental change to the nature of products offered in the market.

5.1 Broader competition impacts

In 1999, the Victorian Government conducted a National Competition Policy (NCP) Review of the Act. The Review assessed the Act against clause 5 of the National Competition Policy Guidelines, which states that the guiding principle is that legislation (including Acts, enactments, ordinances or regulations) should not restrict competition unless it can be demonstrated that the benefits of the restriction to the community as a whole outweigh the costs, and the objectives of the legislation can only be achieved by restricting competition.

The Review found a clear public benefit in the retention of regulatory controls of the market for building work services in general, and that legislation is the least restrictive and most effective means of achieving the objective of consumer protection. The National Competition Council (NCC) assessed the report and considered that Victoria had met its Competition Policy Agreement obligations.

Against the broad findings of this assessment, the regulatory proposal represents a minor variation to the overall regulatory framework concerning the building industry. Consequently, this RIS finds that there are no broader competition impacts. The proposal will not affect the number of participants in the market, it will not affect some firms more substantially than others, nor will it constrain business' ability to innovate.

5.2 Competition test

The NCP 'competition test' was used to assess the proposed variation against any possible restrictions on competition. The test asks whether the proposed variation:

- allows only one participant to supply a product or service;
- requires producers to sell to a single participant;
- limits the number of producers of goods and services to less than four;
- limits the output of an industry or individual producers;
- discourages entry by new persons into an occupation or prompt exit by existing providers;
- imposes restrictions on firms entering or exiting a market;
- introduces controls that reduce the number of participants in a market;
- affects the ability of businesses to innovate, adopt new technology, or respond to the changing demands of consumers;
- imposes higher costs on a particular class or type of products or services;
- locks consumers into particular service providers, or make it more difficult for them to move between service providers; and/or
- imposes restrictions that reduce range or price or service quality options that are available in the marketplace.

Assessed against this test, the proposed variation does not impose restrictions on competition. The impact on business costs is expected to be negligible; the proposed minimum standards would not affect the ability of businesses to innovate; and the proposal entails a small, incremental change to the nature of products offered in the market.

6. PREFERRED OPTION

Key points

- The preferred option is to make a Victoria-specific variation to the Building Code of Australia (BCA) to require that Class 1 and Class 2 buildings include the minimum set of accessibility features from May 2011.
- The principal effects on society of the preferred option are in the form of enhanced safety and amenity, greater social inclusion and social capital, and higher quality housing.
- The preferred option would affect the community as a whole, and specific groups including home occupiers, people with a disability, and building industry participants.

The preferred option is to make a Victoria-specific variation to the BCA ('the proposed variation') to require adoption of the minimum set of accessibility features for all Class 1 buildings and a subset of dwellings in Class 2 buildings from May 2011. The proposed variation was identified as the best option for achieving minimum levels of housing accessibility. The proposed variation entails the highest net benefits for the community.

The principal effects on society of the preferred option are in the form of enhanced safety and amenity, greater social inclusion and social capital, and higher quality housing.

The following groups would be most affected by the proposed variation:

- home buyers and occupiers (including tenants);
- parents and children;
- people who are aged;
- people with a disability or other form of mobility impairment;
- families, friends and carers of people with a disability or other form of mobility impairment;
- people with a temporary injury or impairment; and
- participants in the construction industry. This includes large developers, small construction firms, building designers, architects, engineers, building surveyors, tradespeople and owner-builders;

- government agencies and regulatory bodies.

The geographic impact would cover the whole of the State of Victoria, and the impact would be particularly concentrated in growth areas such as outer Melbourne, established areas in Melbourne with in-fill development, and major regional centres. The expected impact on small businesses was discussed above (Section 4A).

The proposed variation would operate under the existing *Building Act 1993* (VIC) and the Building Regulations 2006 and would be subject to existing enforcement and monitoring arrangements. The implementation and enforcement arrangements are discussed in Section 7, and the evaluation arrangements are discussed in Section 8. The proposed variation to the BCA comprises two separate attachments to the RIS, which are Appendices 13 and 14. A guideline to the proposed variation to the BCA is provided at Appendix 13.

6A. CHANGE IN ADMINISTRATIVE BURDEN

Key points:

- The proposed minimum visitability and adaptability features are not associated with any significant new administrative burden.
- The only associated cost that could be considered an administrative requirement is the cost of familiarisation with the new minimum requirements for visitability and adaptability. To reduce this potential cost, the Government will hold familiarisation briefings and seminars with industry participants, and will publish relevant guides and toolkits.
- It is considered that the proposal would not lead to a material change in the administrative burden on business organisations in Victoria.
- DPCD will work to clarify the extent to which the proposed requirements will impose additional administrative costs on business, and whether a Standard Cost Model measurement needs to be undertaken.

The Reducing the Regulatory Burden initiative commits the Victorian Government to reducing the administrative cost burden of regulation. Administrative costs are those costs incurred by business to demonstrate compliance with the regulation or to allow government to administer the regulation (e.g. keeping a register, lodging documents with government, or reporting requirements). Administrative costs do not include 'substantive compliance costs'. Similarly, costs to government of administering and enforcing the proposal are not subject to this assessment.

The proposed minimum visitability and adaptability features are not associated with any significant new administrative burden. The proposed changes to the Building Code of Australia do not require separate building plans to be produced; the changes do not require the retention of additional paperwork or copies; and the changes have no additional reporting requirements. Building plans are prepared using computer aided design techniques. Once the additional minimum features are standard, the cost of including them in house plans will be negligible or zero.

The only associated cost that could be considered an administrative requirement is the cost of familiarisation with the new minimum requirements for visitability and adaptability. To reduce this potential cost, the Government, via the Building Commission and the Department of Planning and Community Development, will hold familiarisation briefings and seminars with industry participants, and will publish relevant guides and toolkits on its websites. These measures will help

smooth the transition to the new requirements, and abate the cost of familiarisation with the requirements.

The building industry is one of the largest sectors of the economy. A large regulatory apparatus, including the extensive Building Code of Australia, is already in place. Builders have already made an investment in compliance systems and in keeping up-to-date with new requirements and market developments. The proposed variation is a small change to the regulatory arrangements for the sector. Given the scale of the building industry, the administrative burden associated with the proposed minimum standards for visitability and adaptability is not material.

In accordance with the Guidelines issued by the Treasurer, Measurement of Changes in Administrative Burden, it is considered that the regulatory changes in the proposal would not lead to a material change in the administrative burden on business organisations in Victoria (see Appendix 4 for the Statement of No Material Impact).

DPCD will work to clarify the extent to which the proposed requirements will impose additional administrative costs on business, and whether a Standard Cost Model measurement needs to be undertaken.

7. IMPLEMENTATION AND ENFORCEMENT

Key points

- The preferred option would initially be implemented as a variation to the Building Code of Australia. A revised version of the BCA is released annually on 1 May.
- The enforcement of the new requirements would be based on current arrangements for enforcing the BCA standards. Enforcement of the building regulatory framework is carried out primarily by municipal and private building surveyors. Authorised officers from the Building Commission may conduct audits to ensure compliance with the *Building Act 1993* and the Building Regulations 2006.

The proposed variation would be implemented as part of the BCA, and therefore would utilise the current means of implementation, inspection and enforcement.

A revised version of the BCA comes into effect annually on 1 May. New relevant dwellings must meet any new requirements incorporated in the revised version of the BCA if a building permit is issued from that date onwards. For dwellings with a building permit issued before that date, the existing requirements would apply.

Enforcement of the Act and Regulations is carried out by authorised officers from the Building Commission, local governments, public and private building surveyors, and authorised officers of the Metropolitan Fire Brigade and Country Fire Authority.

Enforcement of the BCA standards is carried out by public and private building surveyors. In the discussions with building surveyors in the initial consultation, there were indications that transitional issues of familiarisation and training were manageable under current arrangements.

Building surveyors who subscribe to the BCA and are members of the industry peak bodies will receive information relating to any regulatory change. The BCA is updated annually with effect on 1 May. This is a routine annual cycle of updates to the BCA that has been in place since 2004 and is well accepted by industry for BCA amendments.

While there would be no additional training requirements, building practitioners will have the opportunity to attend the industry seminars run by the Building Commission and the DPCD during the public consultation period on the RIS.

Checking the inclusion of the features at the design stage, the framing stage and the practical completion stage would be incorporated into the current checking processes carried out by building surveyors.

Compliance with the Act, regulations and codes is ensured by a comprehensive audit program. In 2006–07, the Building Commission conducted 170 office audits and 167 building site audits. It also conducted 165 audits of domestic building work for compliance with the 5 Star Standard for energy efficiency. The Building Commission conducted a total of 16 prosecutions, with 100 per cent of the cases proven guilty, resulting in 13 fines to the value of $121,500. It also received a total of 451 complaints, representing 2.2 per cent of the total number of registered building practitioners.

The Building Practitioners Board reviews investigations, identifying breaches of legislation or professional conduct for prosecution by a court. The majority of BPB inquiries related to domestic builders, followed by building surveyors. In 2006–07, the BPB conducted a total of 33 inquiries, relating to 832 investigated property sites. The inquiries resulted in four registrations being cancelled and three being suspended, with total fines of $57,132.

8. EVALUATION STRATEGY

Key points

- To inform the ongoing evaluation of new regulatory requirements, the Building Commission collects data through audits, industry reporting and compliance activities, inquiry databases and stakeholder consultation.
- The Building Commission has commenced development of an evaluative framework to enable assessment of the Building Act and the Regulations. The intent is to allow an ongoing review of the effectiveness of the Regulations with a view to streamlining and simplifying the Regulations in line with the Government's support for regulatory reform. The framework would apply to existing and new requirements under the BCA in Victoria.

An important feature of best practice regulation is that it is reviewed regularly to ensure that it still represents the most appropriate means of meeting the specified objectives. In order to monitor the effectiveness of the Act and Regulations, the Building Commission has developed an enhanced evaluation strategy. In line with VCEC's report, Housing Regulation in Victoria, the Building Commission has given a high priority to regulatory excellence.

A key corporate strategy of the Building Commission is to measure and monitor the performance of regulatory systems and processes. In terms of the ongoing evaluation of regulations, the Building Commission collects baseline data through audits, industry reporting/compliance requirements, inquiry databases and stakeholder consultation.

The Building Commission has commenced development of an evaluative framework to enable assessment of the Building Act and the Regulations. Information to be assessed includes details of enforcement and compliance activity by the Building Commission, local councils, municipal and private building surveyors and other authorities. The intent is to allow an ongoing review of the effectiveness of the Regulations with a view to streamlining and simplifying the Regulations in line with the Government's support for regulatory reform.

Ongoing evaluation of the BCA amendments will be based on information that includes:

- Key performance indicators to measure the success of the BCA amendments, including the number of new dwellings that comply with the proposed standards and, depending on the ongoing data collection in other sectors, the

rate of incidence of falls in the home and trends in hospital stays among the aged.

- Information from ongoing consultation with groups affected by the amendments.

The Building Commission is in the process of developing a monitoring and evaluation system for the Building Regulations. Stage one (due to be completed in 2009-10) aims to develop a map of relevant existing data sources within the Commission. The second stage will commence in 2009-10 and aims to indentify major data gaps, data collection opportunities and research methods, as well as priority regulations for monitoring and evaluation.

9. CONSULTATION

Key points

- During the preparation of the RIS, stakeholders, including small businesses, participated in an initial consultation, to understand their issues and views and to use these in preparing the RIS.
- When the Government releases the RIS for public consultation, the release will be advertised, seeking written submissions. Questions have been provided (at the end of this section) seeking information from stakeholders that would help to clarify whether the option being proposed is appropriate.
- Submissions will be considered and in response, the Government's proposal may be revised. All submissions will be responded to and the final outcome will be published on the DPCD website.
- During the public consultation stage, the Building Commission will conduct industry seminars on the proposed variation. The Government's Build for Life campaign will continue during 2010, raising awareness about accessibility in housing. Consideration will be given to further advice that needs to be provided to support building practitioners.

Under the *Subordinate Legislation Act 1974*, a RIS requires consultation with any sector of the public on which an appreciable burden may be imposed by a proposed regulatory measure. This RIS will be used as the basis for consultation with the industry, the community, government agencies and other stakeholders.

During the consultation, the Building Commission and DPCD will conduct industry seminars to on the proposed variation. The Government's Build for Life campaign will continue through 2010, raising awareness about accessibility in housing. Consideration will be given to further advice that needs to be provided to support building designers and practitioners.

Initial consultation

In the preparation of this RIS initial consultation was undertaken with peak bodies and government agencies. That initial consultation highlighted the challenge in finding a balance between affordability and accessibility and meeting the

Government's objective of providing visitable and adaptable features for private dwellings that suit the mobility of most people in the community.

Participants in the initial consultation are identified below. The same organisations, industry bodies and community sector bodies are expected to participate in the next stage of consultation on the RIS.

Stakeholder briefings and forum

Representatives from the following organisations were briefed, or registered to attend an information forum at the Municipal Association of Victoria:

Organisations	
Master Builders Association of Victoria	Greater Geelong City Council
Housing Industry Association, Victoria	Hobsons Bay City Council
Property Council of Australia, Victoria	Kingston City Council
Australian Institute of Building Surveyors, Victoria	Maroondah City Council
Victorian Municipal Building Surveyors Group	Melbourne City Council
Australian Institute of Architects, Victorian Chapter	Stonnington City Council
Building Designers Association of Victoria	Whittlesea City Council
Victorian Council of Social Service	Wyndham City Council
Victorian Equal Opportunity and Human Rights Commission	Community Housing Federation of Victoria
Housing Resource and Support Service Inc.	Morris Goding Access Consulting
MS Australia	Disability Advocacy Resource Unit
Municipal Association of Victoria	Victorian Trades Hall Council
Tenants Union Victoria	Archicentre
Moreland City Council	Disability Resources Centre
Port Phillip City Council	Arbias Ltd
Moonee Valley City Council	Action for Community Living
Ballarat City Council	Disability Justice Advocacy
Bass Coast Shire Council	Independence Australia
Boorondara City Council	National Disability Services
Darebin City Council	Northern Support Services
	Summer Foundation
	Yarra Valley Retirement Village

Consultation with building industry and small business

Representatives from the following building industry peak bodies for the general building and the domestic building industry and a range of housing construction companies (including small builders) participated in a series of meetings:

Organisations
Master Builders Association of Victoria
Housing Industry Association, Victoria
Spacemaker Home Improvements
Fasham Johnson Pty Ltd
Constructpro
Sinclairs Constructions
JG King Homes

Themes and issues

- Support for the four features.
- Some preference for voluntary standards rather than regulation.
- Issues were raised about the toilet suitable for people with limited mobility feature in studio apartments (BCA Class 2) and the clear path feature for single houses (BCA Class 1):
    - Where the practice in studio apartment bathrooms is to locate the toilet between the basin and shower, an alternate design response may be required; and
    - As the entry path is commonly not included in the domestic building contract for an individual house, this means that the owner would be responsible for organising completion of the path. The Building Surveyor is able to issue a building order or notice requiring compliance with the pathway requirement.
- There was a preference for exemptions for sloping sites.
- The issues which were raised that relate to BCA Class 1 and 2 buildings will be considered along with other responses received during the public consultation period.

- In response to further issues raised, including the impact on small businesses, more information has been provided in the RIS about the proposal and in the specific questions.

Cost consultation across a range of builders

Alternative estimates of costs were sought from the building sector during the preparation of the RIS to compare with the estimated costs prepared by Davis Langdon. The comparative costs provided by the building industry have been included in Appendix 6.

Consultation with building designers and building surveyors

Representatives from the following building surveyor and building designer peak bodies and advisory committee member to Standards Australia participated in a meeting:

Organisations
Australian Institute of Building Surveyors, Victoria
Victorian Municipal Building Surveyors Group
Australian Institute of Architects, Victorian Chapter
Building Designers Association of Victoria
Standards Australia, AS4299

<u>Themes and issues</u>

- Support for the four features.
- Further measures suggested, such as wider doorways and passages and a level entry shower.
- The issues which were raised that relate to the scope of the features will be considered, along with other responses received, during the public consultation.

Consultation with community sector and access consultants

Representatives from the following community sector and access consultancies participated in a meeting:

Organisations
Victorian Council of Social Service
Archicentre
Blythe-Sanderson Group
Health Science Planning Consultants
Council on the Ageing
Housing Resource & Support Service Inc.
MS Australia

Themes and issues

- Support for the features.
- Support for further measures to increase the benefits for people with limited mobility such as broader application to apartment dwellings (BCA Class 2) to provide more affordable and accessible dwellings, wider doorways and passages and the capacity for a level entry shower.
- The issues which were raised that relate to the scope of the proposal will be considered along with other responses received during the public consultation.

Government reference group

Representatives from the following Government departments and agencies participated in a reference group during the preparation of the RIS:

Victorian departments or agencies
Building Commission
Department of Human Services
Department of Justice
Department of Planning and Community Development
Department of Premier and Cabinet
Department of Treasury and Finance
VicUrban

Future consultation

Stakeholders who participated in the initial consultation will be directly informed about the availability of the RIS when it is released for public consultation. Submissions will be sought from interested people by a broad public consultation process. The public consultation will closes on the 5 March 2010.

Specific questions for consultation

Further to feedback received in the initial consultation on this RIS, the Victorian Government is seeking specific information from stakeholders during the public consultation stage, for consideration in finalising the proposed variation:

Q1: Proposed variation and accessibility

The proposed variation comprises four features:

- *clear path from the street (or car set-down/park) to a level entry*: (1 metre wide path or ramp with no handrails, from the street or car parking, exemption for sites with an average slope steeper than 1 in 14);
- *wider doorways and passages*: a minimum clear opening width of 820mm to required doors (based on approximately an 870 wide door leaf) and a minimum clear opening width of 1000mm to halls;
- *a toilet suitable for people with limited mobility on entry level*: achieved with a toilet compartment measuring 900mm wide and 1200mm from the front of the pan to the nearest part of a doorway, or for a toilet located in a bathroom it must be in the corner; and
- *reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later*: required to two sides of the entry level toilet, a bath and one side of a shower for a certain extent.

<u>If accessibility and affordability were objectives in the construction of private dwellings in Victoria, what features, and what dimensions of those features, would you consider to be the minimum requirements? You may also wish to give consideration to the proposed requirements for the common areas in Class 2 buildings.</u>

<u>Given that some studio apartments and small apartments may not currently be designed with toilets located in the corner of the bathrooms, does the proposed requirement raise any issues for stakeholders?</u>

Q2: Proposed variation, affordability and amenity

Independent quantity surveyors have estimated the cost of the proposed variation to be $870 for a house and land package.

What do you consider to be a realistic cost that consumers would be prepared to pay for the package of accessibility features?

Do you consider the cost estimates presented in this RIS to be reasonable estimates of future costs?

To what extent do you consider that the four features would result in reduced amenity for residents due, for example, to alternative use of space or altered designs (eg. an inability to have steps leading to the house)?

Q3: Application of any mandatory standards on Victoria's new dwellings

The proposed variation applies to the entry level of all new private dwellings [98] which are BCA Class 1 (including Class 1a and 1b), to new ground floor dwellings of medium density housing and one in five dwellings in new high-rise buildings which are BCA Class 2.The proposal does not apply to Class 4 dwellings (ie. a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building).

Given the *Melbourne 2030* policy objectives of a more compact city, and given that apartments are an affordable choice for many people who have a disability, what are your views on the proposed application of the features to the BCA building classes?

Please give consideration to:

- BCA Class 1a and 1b;
- BCA Class 2; and
- BCA Class 4.

An analysis of the accessibility requirements for all BCA classes is included at Appendix 11.

Q4: Proposed variation and the national Premises Standard

The proposed Victorian variation supplements the requirements of the national draft *Disability (Access to Premises – Buildings) Standards 2009* for BCA Class 1b dwellings (boarding house, guest house, hostel etc.).

[98] The proposed variation is not requiring an entry level shower and/or bath; it is only proposed to require wall reinforcement for grab rails for those items. If there is no bathroom on the entry level, the wall reinforcement feature for the shower and bath would be required to be installed upstairs (or on the level that the bathroom is located) to allow the fitting of grab rails.

The Premises Standard, which addresses the needs of people with a disability, is proposed to have more stringent requirements when it comes to sanitary facilities and common areas. Where there are a number of holiday accommodation dwellings on one allotment, only a proportion (1 in 4 to 1 in 10) of dwellings would need to meet these requirements.

The proposed variation would pick up the remaining holiday accommodation dwellings not covered by the Premises Standard. These remaining dwellings would need to meet a lesser accessibility standard, designed to meet the safety and amenity requirements of the broader community.

Do you consider that the inclusion of BCA Class 1b dwellings in the Victorian variation would be likely to raise any issues for stakeholders?

10. APPENDICES

A copy of the proposed variation is attached for the purposes of public consultation, as specified in section 10(1)(g) of the *Subordinate Legislation Act 1994*. A copy of the proposed variation will also be made available to the VCEC for its independent assessment of the RIS.

APPENDIX 1: CLASSIFICATIONS OF BUILDINGS UNDER THE BUILDING CODE OF AUSTRALIA

Class 1: one or more buildings which in association constitute:

(a) Class 1a – a single dwelling being:

(i) a detached house; or

(ii) one of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit; or

(b) Class 1b – a boarding house, guest house, hostel or the like:

(i) with a total area of all floors not exceeding 300 m2 measured over the enclosing walls of the Class 1b; and

(ii) in which not more than 12 persons would ordinarily be resident,

which is not located above another dwelling or below another dwelling or another Class of building other than a private garage.

Class 2: a building containing 2 or more sole-occupancy units each being a separate dwelling.

Class 3: a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including:

(a) a boarding-house, guest house, hostel, lodging-house or backpackers accommodation; or

(b) a residential part of a hotel or motel; or

(c) a residential part of a school; or

(d) accommodation for the aged, children or people with disabilities; or

(e) a residential part of a health-care building which accommodates members of staff; or

(f) a residential part of a detention centre.

Class 4: a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

Class 5: an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.

Class 6: a shop or other building for the sale of goods by retail or the supply of services direct to the public.

Class 7: a building which is a carpark (Class 7a) or for storage or display of goods or produce for sale by wholesale (Class 7b).

Class 8: a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

Class 9: a building of a public nature:

(a) Class 9a – a health-care building; or

(b) Class 9b – an assembly building;

(c) Class 9c – an aged care building.

Class 10: a non-habitable building or structure.

APPENDIX 2: OBJECTIVES OF THE *BUILDING ACT*

- to protect the safety and health of people who use buildings and places of public entertainment;
- to enhance the amenity of buildings;
- to promote plumbing practices which protect the safety and health of people and the integrity of water supply and waste water systems;
- to facilitate the adoption and efficient application of—
    - national building standards; and
    - national plumbing standards;
- to facilitate the cost effective construction and maintenance of buildings and plumbing systems;
- to facilitate the construction of environmentally and energy efficient buildings;
- to aid the achievement of an efficient and competitive building and plumbing industry.

APPENDIX 3: METHOD FOR ANALYSING REGULATORY COSTS

Standard Cost Model

The *Subordinate Legislation Act 1994* requires, amongst other things, a RIS to assess the costs and benefits of Proposed Regulations. This legislation also requires that a RIS identify practicable alternatives to the Proposed Regulations and assess their costs and benefits as compared to the Proposed Regulations. Conversely, the RIS is not required to identify alternatives that are not feasible or practicable.

The Measurement of Changes in Administrative Burden in the Victorian Guide to Regulation requires that administrative costs in the RIS are calculated using the Standard Cost Model methodology. Since it is considered that the proposal is not likely impose any new administrative costs, DPCD will work to clarify the extent to which the proposed requirements will impose additional administrative costs and whether a Standard Cost Model assessment needs to be undertaken.

Multi-Criteria Analysis

The benefits specific to the Proposed Regulations proved difficult to quantify in monetary terms. Multi-Criteria Analysis (MCA) is presented in this RIS as an alternative assessment tool to complement the quantitative analysis. The MCA approach is described in part 5–18 of the *Victorian Guide to Regulation*. This approach is useful where it is not possible to quantify and assign monetary values to the impacts of a proposed measure (eg. measures that have social impacts). Furthermore, it represents a convenient way of comparing a range of alternative approaches.

This technique requires judgements about how proposals will contribute to a series of criteria that are chosen to reflect the benefits and costs associated with the proposals. A qualitative score is assigned, depending on the impact of the proposal on each of the criterion weightings assigned to each of the criteria, reflecting their relative importance in the policy decision-making process, and an overall score can be derived by multiplying the score assigned to each measure by its weighting and summing the result. If a number of options are being compared, then the option with the highest score would represent the preferred approach.

APPENDIX 4: STATEMENT OF NO MATERIAL IMPACT

Administrative Burden Statement

It is considered that the variation of the Building Code of Australia with respect to Visitable and Adaptable Features in Housing is not likely to lead to a material change in the administrative burden. DPCD will work to clarify the extent to which the proposed requirements will impose additional administrative costs on business, and whether a Standard Cost Model measurement needs to be undertaken.

APPENDIX 5: COSTING OF DESIGN CHANGES USING TYPICAL INDUSTRY DESIGNS

Documents used for costing purposes:

- Domestic Disability Access Cost Overview Report (19 June 2008) Davis Langdon
- Draft Regulations – BCA 2010 Volume One – Victoria Appendix
- Draft Regulations – BCA 2010 Volume Two – Victoria Variations and Additions
- Regulatory Impact Statement Proposal to Formulate Disability Standards for Access to Premises and Amend the Access Provisions of the Building Code of Australia, February 2004
- Disability Standards for Access to Premises – Cost Matrix
- Draft Disability (Access to Premises – Buildings) Standards 2009
- Adaptable Housing Standard AS 4299
- AS 1428.1-2001 Design for Access and Mobility Part 1 General requirements for access – New building work
- Draft for Public Comment Australian Standards 2004 - AS 1428.1 Design for Access and Mobility Part 1 General requirements for access – New building work.

Typical Industry Designs Assumptions

- Selection of building heights for Class 2 buildings are consistent with the 'case studies' used in 2004 Federal Regulatory Impact Statement Proposal to Formulate Disability Standards for Access to Premises and Amend the Access Provisions of the Building Code of Australia. This RIS proposed access requirements for Class 2 buildings and that scope has been used in the development of this proposal.

New build

- Single house (Class 1) Based on typical housing industry designs for new homes (Class 1), the entry is set back 5m from the front boundary, the site slope is shallower than 1 in 20 and the path is treated concrete construction. The entry threshold is sheltered from the weather by an entry porch. Toilet access can be achieved by slight changes to wall planning and providing a sliding door.
- Medium density (Class 2) – Low rise no lift – 3 storey It is assumed that there is no lift and 3 storeys of 12 sole-occupancy units (based on 4 units per storey).

The building has 2 entries leading to common stairwells accessed from a common path with a minimum clear width of 1.2m. Some car parking is provided on grade. There are no rooms in common use by the residents. Ground floor sole-occupancy units are required to include the access features.

- High-rise (Class 2) – lift – 7 storey It is assumed that 3 lifts are provided and 7 storeys of 119 sole-occupancy units (based on 17 units per storey). There is one building entry which has a level threshold, a canopy and a path with a clear width of 1.2m from the street to the entry. Common area corridors are 1.2m minimum clear width. The common area sporting facility has an accessible toilet. Car parking is underground (Class 7a). Of all sole-occupancy units, 20 per cent are required to include the access features.

Typical Industry Designs Additional Requirements Assumptions:

New build

Single house (Class 1)

- Grade concrete path up on fill to a level porch entry (or provide a threshold ramp) and a bottom door seal and threshold plate.
- Entry door made wider
- Entry level study/bed, toilet, bathroom and laundry doors made wider
- Positioning of extra noggings adjacent to one toilet, shower and bath
- Extra for sliding door to toilet

Medium density (Class 2) – Low-rise no lift – 3 storey

- Grade concrete paths up on fill to 2 building entries (or provide a threshold ramp) and provide bottom door seals and threshold plates to those doors.
- 4 sole occupancy entry doors made wider
- 4 bed and bathroom doors made wider
- Positioning of extra noggings adjacent to toilet and shower in each of 4 units
- Extra for sliding door to toilet and move minor walls to make the toilet suitable for ambulant disabilities in each of 4 units

High-rise (Class 2) – lift – 7 storey

- Pedestrian ramp from underground car parking with kerbs and handrails
- Increase entry and common area doorway widths
- Extra over standard lift for accessibility features to 3 lifts
- Provision of 2 passing spaces and 2 turning spaces per storey; adjust walls to achieve space 600mm wide x 2m long
- 28 sole occupancy entry doors made wider
- 56 bed and bathroom doors made wider
- Positioning of extra noggings adjacent to one toilet and shower in each of 28 units
- Extra for sliding door to toilet and move minor walls to make the toilet suitable for ambulant disabilities in each of 28 units

Retrofit

Single house (Class 1)

- Demolish existing path and build new path ramped up to a level porch
- Retrofit door seal includes removing existing door, fitting seal and any touch up painting plus door adjustment so seal operates correctly.
- To widen doors, remove the existing door, widen the opening and install a new door (five doors at cost of $2,000 per door)
- Widen the passageway to the bathroom by moving an internal bedroom wall and reinstating finishes
- Not installing the reinforcement in bathroom and toilet walls is no cost, assuming that the future grab rails will be installed to suit existing studs locations. To install the reinforcement includes demolishing existing wall linings to the toilet, shower and bath, installing the new reinforcement to required locations, re-sheet the walls, new tiles and wall finishes (assumed 50 per cent tiling and painting), caulking, re-install all fixtures (some damaged so allow for new) and adjacent work to ceilings and walls. Floor areas are a toilet compartment measuring 2.5m by 900mm and a bathroom measuring 3m by 3m.
- For toilet access, demolish the existing door, widen the opening and install a new sliding door

General Costing Assumptions

The costs were derived using typical industry designs and reflect the cost of adapting the design of a standard volume built home, or apartment.

Costs are general cost allowances. Detailed specifications have not been provided as materials and designs vary considerably and more than one specific solution may be possible.

The following assumptions were made on the basis of standard industry designs:

- The design changes are introduced prior to the commencement of construction and become the base design.
- Costs are extra over costs to achieve the proposed regulatory intent
- Upgrade costs include demolition
- External doors are solid core with timber frames
- Internal doors are hollow core with timber frames
- Building entry doors Class 2 are glazed with aluminium frames
- Internal sole-occupancy unit entry doors are solid core with metal frames

Table A5.1: Standard rates adopted for cost estimates

Item	**$ each**
Path of travel	
Grade concrete path up on fill (earthworks only) and increase path width by 100mm	$120
Ramps to entries (assume require ramp from underground car parking)	
Ramp from underground car parking in high-rise – lift – 7 storey (new build)	$18,400
Doorway requirements	
Provision of bottom door seal and threshold plate (new build)	$200
Provision of bottom door seal and threshold plate in glazed door (new build)	$400
Doorway widths – extra over cost of solid core door for wider door leaf and frame (new building)	$100
Doorway widths – extra over cost of hollow core door for wider door leaf and frame (new build)	$50
Doorway widths – extra over cost of glazed door for wider door leaf and frame (new build)	$0
Extra for sliding hollow core door	$200

Item	**$ each**
Allowance for adjusting walls to achieve circulation area per passing/turning space in high-rise – lift – 7 storey (new build)	$1,800/m2
Lifts	
Extra over standard lift for accessibility features	$0 (included)

APPENDIX 6: ALTERNATIVE ESTIMATES OF COSTS OF VISITABLE AND ADAPTABLE DESIGN CHANGES (EXTRA OVER)

Alternative estimates of costs were sought from the building sector during the consultation undertaken in preparation of this RIS to test whether the cost estimates were realistic. TableA6.1 shows the comparison between the estimated costs and the alternative estimates of costs.

Table A6.1: Comparison of estimated costs of visitable and adaptable design changes (extra over)

Features	Cost Per Single House (Class 1) New Build			
	Estimated cost	Alternative estimates of costs		
1. Path of travel to entrance 1.1 Minimum clear width of 900mm, continuous, slip resistant, traversable path of travel is required from the street boundary or, private car parking. (can be to any entry) 1.2 Pathways must not have a slope steeper than 1 in 20.	$120 (Earth fill to grade path. Path included in total unit cost)	$400 (Earth fill to grade path. Path included in total unit cost) (second thoughts should only be the difference between standard concrete and slip resistance which is $75)	$43 (Earth fill to grade path. Path included in total unit cost) (Standard path is 900mm wide. Paving cost for extra over 1 m wide path. Actual setbacks will vary.)	$500 Earth fill to grade path. Path included in total unit cost)
1.3 Ramp grades must be between 1 in 14 and 1 in 20.	NA	This will vary greatly depending on length and grade	-	-
1.5 Water inundation at the entrance threshold must be prevented. (achieved with door seal)	$200	$0 (Standard inclusion)	$44	$100
2. Doorways and passage width 2.1 Minimum clear opening of 800mm.*	$300	$0 (Doors 820mm standard)	$0 (Not wide enough. Doors 820mm)	$350
2.2 Minimum passage width of 1m between walls and no change of level between required doors.	$0	$0	$420 (increase house size to accommodate)	Subject to design
3. Toilet access 3.1 A toilet area suitable for people with limited mobility must be included on entry level. 3.2 A toilet compartment in a dwelling	$200 (Sliding door. Re-plan walls and toilet location at no	$105 (Cavity sliding door, less if surface)	$170 (Sliding door) $440	Dependent on design

Features	Cost Per Single House (Class 1) New Build			
	Estimated cost	Alternative estimates of costs		
must have 1.2m between the front of the pan and any part of a swing door and 900mm between walls. 3.3 For a toilet located in a bathroom it must be in a corner.	cost)		(Extra floor area required for size. Suggest 1.2m between walls)	
4. Reinforced bathroom and toilet walls 4.1 Noggings must be installed above finished floor level for the future fitting of grab rails to the walls of the entry level toilet, a shower and bath.	$50	$300 possibly less	$410	$100 per room (assume $200 total for two rooms)
Total Extra Over Cost of Features (Items 1-4) [99]	**$870**	**$480 - $805**	**$1,527**	**$1,150** **Overall total $1,500 - $2,000 dependent on design**
Total Unit Cost	$370,000 (includes land, paths and driveway)	$300,000 (includes land, paths and driveway) (Land $130,000 Build $170,000)	-	
Extra Over Cost of Features as a % of Total Unit Cost	**0.2%**	**0.47% build 0.26% total**	**-**	
Options				
• **Level entry shower ****	$200	$1,000 (a lot of cost is in shower compartment; maybe revert to shower curtains rather than complicated door structures)	$3,330 (Shower, screen, taps and 1.5m extra floor area)	$900
• **850mm doorways**	Not costed	$230	$280	$150

[99] The alternative estimates were reviewed by the independent quantity surveyor. Some of the alternative costs are high due to the assumption that the dwelling area would need to increase. This assumption is not appropriate. Overall, the builders generally concurred that the proposed features would cost about $1,000 but this would depend on individual house designs. DPCD believes that where the design of a home at ground level was step-free, incorporated open planning, wider doorways and passages and masonry walls, there would be no additional cost.

Features	Cost Per Single House (Class 1) New Build			
	Estimated cost	Alternative estimates of costs		
In lieu of item 2.1 above, minimum clear opening of 850mm to required doors		(Suggest 870mm doors) (cost comprises 5 x $30 plus $80 front)	(4 x 870mm doors)	
• **1200mm passage width** In lieu of item 2.2 above, minimum passage width of 1200mm between walls and no change of level between required doors.	Not costed	$0	$1260 (0.3m x 6m floor area)	-

Notes: * For houses (Class 1), based on five standard 870mm wide doors comprising one solid core entry door and four internal hollow core doors. Based on an open plan kitchen, meals and living area, wider doorways are required in five locations: the entry and one entry level bedroom and set of wet areas.

** Based on the extra over cost for: bathroom floor graded to shower waste, tanking in the vicinity of the shower to the bathroom floor, slip resistant flooring to the bathroom and shower, wall hung glass shower screen with no bottom track and a door with a minimum clear opening width of 820mm and noggings for shower seat.

APPENDIX 7: PRICE INFORMATION FOR DWELLINGS IN MELBOURNE (SQUARE METRE RATES)

There are a range of tools that can be used to calculate the square metre cost of housing construction. Of the 35,727 homes estimated to be built annually in Victoria that would incorporate the four features, 3 per cent would be medium density housing units and apartments. Of the 97 per cent of homes built annually, the great majority are project housing (based on an existing plan and not custom designed). Precise data are not available on the proportion of homes which are custom designed, so this is difficult to estimate.

The cost of land has not been included in the square metre cost estimates. Based on consultation, DPCD estimates that the total impact of the four features would not affect the overall size of the building. If new homes that included the four features did not increase in area, there would be no impact on the use of land.

Method 1: Advertised costs of project homes

The great majority of homes built annually are project housing. Current construction costs for these homes can be obtained from advertised prices (costs vary based on supply and demand issues). This method was suggested by the independent quantity surveyor, Davis Langdon. A metre rate cost of the construction of a home has been established by the checking the actual prices advertised for homes in Melbourne, from two prominent suppliers (accessed in the third quarter of 2008). Prices exclude land for the purpose of ascertaining a metre rate for construction.

Supplier A (single storey):

- House X 4 Bed, 2 Bath, Garage 207m2 total at $141,000 or **$681/m2**.
- House Y 3 Bed, 2 Bath, Garage 154m2 total at $122,000 or **$792/m2**.
- House Z 3 Bed, 2 Bath, Garage 150m2 total at $121,000 or **$806/m2**

Supplier B:

- House X (single storey) 4 Bed, 2 Bath, Garage 326.5m2 total at $223,500 or **$685/m2**.
- House Y (2 storey) 4 Bed, 2 Bath, Garage 311.85m2 total at $257,000 or **$824/m2**.
- House Z (2 storey) 4 Bed, 2 Bath, Garage 314.96m2 total at $259,000 or **$822/m2.**

Prices are around **$700 to $900/m2**. Note that these costs may exclude items such as carpets and other special finishes internally. Externally, no works would be provided (driveways, paths, fences, landscaping, etc.).

The costs of apartments were estimated by the independent quantity surveyor. While the costs for medium density housing and apartment buildings vary, Davis Langdon has advised that the average cost for high-rise apartment buildings over three storeys would be $1,600 per square metre (includes lifts, sprinklers and underground car parking). Using this rate is an overestimate as the costs for apartment buildings would be higher than medium density housing (which are included in the 3% of apartments which would have the features) because they have no lift and sprinklers and may have on-grade parking.

The weighted square metre rate for the cost of the advertised costs for homes and the independent quantity surveyor's estimated cost for apartments is **$921** (if 97 per cent of the dwellings are homes at $900 per square metre and 3 per cent of the dwellings are apartments at $1,600 per square metre).

Method 2: Construction cost estimator

'Building cost calculator' tools (such Construction cost estimator) appear to provide consistently higher estimates than advertised prices. One 'construction cost estimator' estimates construction costs as being $1700 per square metre for new homes. The calculator suggests that the services of a quantity surveyor or licensed builder be used to calculate accurate construction costs. The cost is also based on custom designed homes which are a small proportion of the housing stock built. DPCD has not used this method of calculation to derive a square metre rate for dwellings because the calculator are based on limited data and applies to custom designed homes which are a small proportion of the homes built in Victoria.

Method 3: ABS data

The Australian Bureau of Statistics provides data on building activity in Australia using building approvals and 'returns' from builders. ABS data (catalogue no. 8752.0) *Building Activity* provides cost data from a sample of homes. Based on the average cost and size of homes, the ABS data indicates a cost of $937 per square metre for homes in Victoria (if 241 square metres is the average floor area and $226,000 is the average cost per home) and a cost of $1,614 per square metre for apartments (if 140.1 square metres is the average size for flats, units, semi-detached houses and townhouses and using $226,000, the average cost per home, as a proxy as this information was not available). This would imply a weighted cost of $957.31 per square metre (if 3 per cent of the dwellings are apartments). The ABS rates at current prices would be $1,033 per square metre for homes and $1,779 per square metre for apartments (10.2 per cent increase for CPI since the August 2006 census based on ABS catalogue no. 6401.1 *Consumer Price Index*, housing

group). The weighted cost in current prices would be **$1,055** per square metre (if increased by 10.2 per cent for CPI). The scope of the ABS costs does not include the price of land and landscaping works. Information is not available on the scope of finishes in the ABS costs so it is not possible to compare the costs with the advertised costs for housing (method 1).

Conclusion and cost estimate adopted

Based on advice by the independent quantity surveyor Davis Langdon, the weighted average costs based on ABS data and increased for CPI would be higher than the market and quantity surveyor estimates for homes and apartments ($1,055 compared to $921). Precise information is not available on the inclusions and exclusions in the ABS costs, which prevents comparison between these costs. Given that $988 is the average of the weighted costs ($1,055 and $921), DPCD believes that a rate of **$1,000** per square metre is a reasonable rate for estimating the cost of space in a dwelling. This is very close to the ABS-based estimate.

APPENDIX 8: OTHER SUPPORTING INFORMATION FOR CALCULATION OF BENEFITS FROM VISITABLE AND ADAPTABLE HOUSING

Measure	Data	Source
Number of Victorian households that would directly benefit from accessibility features due to limitations caused by a disability, or long term injury or illness	155,000	DPCD based on ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0.
Proportion of Victorian households that would directly benefit from accessibility features due to limitations caused by a disability, or long term injury or illness (people with short term injury for less than 6 months, or families with young children would be in addition to this figure)	8.7 per cent of households	DPCD based on ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0.
Number of Victorians aged over 60	959,000	DPCD Population Projections
Proportion of Victorians aged over 60	19.1 per cent of the population	DPCD Population Projections
Estimated number of Victorians to be aged over 60 in 2057	2,602,000	DPCD Population Projections
Estimated proportion of Victorians to be aged over 60 in 2057	31.0 per cent of the population	DPCD Population Projections
Proportion of the Victorian population with some form of disability	20.0 per cent	DPCD based on ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0.
Number of Victorians with a disability within Victoria who requires aids* or equipment for self care or mobility and live in private accommodation	3.4 per cent	DPCD based on ABS, Disability, Ageing and Carers 2003/04. Cat. No. 4430.0.
Annual number of births, Victoria	70,000	DPCD based on ABS data
Fall injuries as a proportion of total injuries (Australia)	36 per cent	AIHW Hospital separations due to injury and poisoning, 2004–05
Admissions to hospital from fall injuries that occurred at home (Australia)	47,393	AIHW Hospital separations due to injury and poisoning, 2004–05
Of the people experiencing falls requiring hospitalisation, the proportion of people aged over 65 (Victoria)	71 per cent	AIHW Fall related injuries in the home; Victorian Admitted Episodes Dataset, 25 July 2005
Transport accidents were the second most common of total community injuries. Most hospitalised transport injury cases involved people aged 10–29 years.	14 per cent	AIHW Hospital separations due to injury and poisoning, Australia 2004–05
Number of hospitalisations Australia-wide from sporting injuries (2004-05), Of those, 14,147 cases resulted from injuries received while playing some form of football and 90% of these injuries, mainly fractures, occurred among people aged under 34 years, with 25% of these hospitalisations occurring in Victoria.	37,300	AIHW Hospital separations due to injury and poisoning, Australia 2004–05 AIHW Hospitalised football injuries, Australia 2004-05
Increase in the number of hip operations from the period 1997-98 to 2006-07. Hip replacements are most prevalent among people aged 65 to 85 years.	83 per cent	Medicare Benefit Schedule data
Victorian total output cost for residential aged care	$275.7 million	Victorian Budget Papers 2008-09

Measure	Data	Source
Victorian total output cost for HACC primary health, community care and support	$500.4 million	Victorian Budget Papers 2008-09
Local Government contribution to LG provided HACC, Veterans, and other Commonwealth funded home services for people who are aged and disabled	$110 million	Victorian Grants Commission Data 2006-07

* Mobility aids includes a cane, stick, crutches, walking frame, manual or electronic wheelchairs, scooter, or other mobility aid.

APPENDIX 9: PERSONS WITH A DISABILITY: LIVING ARRANGEMENTS BY USE OF AIDS OR EQUIPMENT (VICTORIA, 2003)

	Lives alone in private dwelling	Lives with others in private dwelling	Total living in private dwelling	Lives in non-private dwelling	Total
	'000	'000	'000	'000	'000
Uses aids or equipment					
Self care					
Eating	-	4.6	4.6	15.3	19.9
Showering or bathing	23.9	47.6	71.5	39.7	111.2
Dressing	2.4	12.5	14.9	17.7	32.6
Toileting	15.0	28.2	43.2	28.9	72.1
Managing incontinence	3.4	15.0	18.4	29.9	48.3
All using self-care aids(a)	30.7	64.0	94.7	46.8	141.5
Mobility					
Getting into or out of a bed or chair	7.3	19.3	26.6	25.1	51.6
Moving about the house or establishment	20.9	41.1	62.0	37.5	99.6
Moving around places away from home or establishment	29.3	60.8	90.1	32.9	123.0
All using mobility aids(a)	37.6	73.4	111.0	43.8	154.7
Communication	62.7	164.5	227.2	18.0	245.1
Meal preparation(b)	2.1	11.5	13.6	-	13.5
Managing health conditions (medical aids)(c)	52.3	172.3	224.6	26.5	251.1
All using aids or equipment(a)	115.5	320.1	435.6	59.9	495.5
Does not use aids or equipment	79.8	401.8	481.6	15.3	496.8
Total	**195.3**	**721.9**	**917.2**	**75.1**	**992.3**
Aggregated components for all aid types by all using aids	219.3	577.4	796.7	271.5	1068.0
Communication, Meal preparation and managing health condition as a % of aggregated components	53.40	60.32	58.42	16.39	47.72
Estimate number of individuals using self care and mobility aids	53.83	127.01	181.14	50.08	259.02
Estimated number of households (d)	53.83	101.61	155.43		
Total households in Victoria (e)			1,781.60		
% of total households in Victoria			8.72%		

Source: ABS cat. no. 4430.0 Disability, Ageing and Carers. (a) Total may be less than the sum of components as persons may use more than one type of aid or equipment. (b) Only asked of people living in households. (c) Examples include nebulisers, dialysis machines, oxygen concentrator or cylinder. (d) DPCD estimate that there are approximately 180,0003 individuals with a disability within Victoria who require aids or equipment for self care or mobility and live in private accommodation. Of these, approximately 50,000 live on their

own in private accommodation. On the assumption that, of the remainder, there are approximately 1.25 individuals who require aids or equipment per household, we estimate that approximately 155,000 households (8.7%)[1] in Victoria would benefit. (e) Source: ABS, Census, 2006.

APPENDIX 10: DEMOGRAPHY AND LOCATION OF NEW HOUSING APPROVALS

Consultation with the community sector indicates that people with mobility impairment need affordable housing options, such as smaller dwellings, or apartments.

The highest numbers of dwelling approvals for new houses for 2008 are located in Melbourne's outer growth areas, numbering 300 to 2000 new houses in each local government area.[100]

The highest numbers of dwelling approvals for new smaller dwellings or apartments for 2008 are located in Melbourne's central city, established suburbs, the south east outer growth area and the Mornington Peninsula.[101]

This pattern of construction is expected to continue in established area as numbers of BCA Class 1a infill dwellings and BCA Class 2 dwellings are expected to increase in the future. Presently established area redevelopment comprises 66 per cent BCA Class 1a dwellings and 34 per cent BCA Class 2 apartments.[102] Where there are new BCA Class 2 dwellings, the number of new dwellings that incorporate the features would be lower (only one in five of these dwellings would incorporate the features).

The location of significant numbers of people who are aged 65-plus and people who are aged 65-plus who need assistance with core activities, is diverse[103] and will change over time with increasingly more significant numbers in Melbourne's present growth areas.

While the growth areas presently have significant numbers of people who are younger, DPCD believes that a broad range of people would move into new housing in the growth areas and within the 30 to 50 year life of the new housing stock, many people will remain in that area and will be aged 70-plus.

[100] DPCD, based on building approvals data for new houses.
[101] DPCD, based on building approvals data for new units and semi-detached, row, terrace, townhouse etc.
[102] DPCD based on building approvals data.
[103] DPCD based on ABS, 2006 Census, Population and Housing. The highest numbers of people aged 65-plus are located in Melbourne's established eastern suburbs, as well as the Mornington Peninsula. The highest numbers of people aged 65-plus who need assistance with core activities are located in Melbourne's established outer eastern, northern and north-western suburbs. The medium numbers of people in both groups are located in Melbourne's established suburbs and the south east outer growth area. The lowest numbers of people in both groups are found in the inner city as well as the other outer growth areas.

APPENDIX 11: ANALYSIS OF ACCESSIBILITY REQUIREMENTS FOR ALL BCA CLASSES (1 to 10)

BCA Class	Current BCA	Proposed variation four accessibility features	Premises Standard Proposal 2009
	Access for people with a disability	*Access for people with limited mobility*	*Access for people with a disability – DDA compliant*
Class 1a	-	Yes	-
Class 1b	-	Yes	Yes
Class 2	-	Yes	-
Class 3	Yes	-	Yes
Class 4	-	Not included	-
Class 5	Yes	-	Yes
Class 6	Yes	-	Yes
Class 7a (carpark)	Yes, but not in association with Class 2	-	Yes, including for Class 2
Class 7b	Yes	-	Yes
Class 8	Yes	-	Yes
Class 9	Yes	-	Yes
Class 10a (private garage, carport or shed)	Yes, but not in association with Class 1, 2 or 4	Not included in proposal; however, level entry could be via the garage	Not with a Class 1, 2 or 4
Class 10b	-	-	Yes, for a swimming pool

Note: Refer to Appendix 1 for the Classifications of buildings under the BCA.

Current BCA requirements

The application of accessibility requirements in the current BCA provisions is to non-domestic buildings that the public generally access, meaning they do not apply to private dwellings. The building classes which currently have no accessibility requirements are: BCA Class 1 (generally speaking, detached housing and small shared accommodation) BCA Class 2 (a building containing two or more sole-occupancy units, each being a separate dwelling), BCA Class 4 (a dwelling in a building in a building that is a Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building), BCA Class 7a (car park) in association with a Class 2 and BCA Class 10a in association with Class 1, 2 or 4.

The current BCA accessibility requirements for non-domestic buildings provide for people with a disability, generally in accordance with AS 1428.1 Design for access and mobility Part 1: General requirements for access— New building work for circulation requirements; this means that 80 per cent of people with a disability can access the required spaces.

Visitability and Adaptability Features in Housing RIS proposal

The proposed variation applies to private dwellings and includes BCA Class 1 and certain dwellings in BCA Class 2. In regard to other BCA Classes that apply to private dwellings and are not included in the proposal, the following is noted about their status and coverage by current accessibility proposals:

- BCA Class 4 dwellings would in some cases have access to common areas with accessibility provisions, or be located on ground level, however in other cases they may be located on an upper level not served by a lift. Situations where Class 4 dwellings are built include in association with a car park, a shop, office, factory, residential building or storage facility. A comparison has been made of the number of BCA Class 1, 2 and 4 dwellings constructed in Victoria, to ascertain the prevalence of BCA Class 4.

BCA Class	Estimated Number Built in 2008
Class 1a	32,000 – 36,000
Class 2	4000 – 4,200
Class 4	50-80

Source: DPCD based on DPCD building approvals data and Building Commission building permit data 2008

- BCA Class 7 associated with a Class 2, is included in the current draft of the national draft *Disability (Access to Premises - Buildings) Standards* 2009, meaning that access provisions are currently proposed for this use.
- BCA Class 10a, in association with Class 1, is addressed in the proposed variation because the flexible requirements for the path to the entry, means that a Class 10a garage could be a point of access from the car set down area to the dwelling.

Premises Standard Proposal

The Commonwealth Government is reviewing the technical requirements for buildings to meet the objectives of the Commonwealth *Disability Discrimination Act 1992*. The Commonwealth is considering a national draft *Disability (Access to Premises - Buildings) Standards 2009* which will apply to any premises that the public is allowed to enter or use. Once the Premises Standard has been formulated, the BCA will be amended to include the same technical detail.

The proposed Victorian variation supplements the requirements of the national draft *Disability (Access to Premises – Buildings) Standards 2009* for BCA Class 1b dwellings (boarding house, guest house, hostel or the like).

The draft Premises Standard, which addresses the needs of people with a disability, proposes more stringent requirements when it comes to sanitary facilities and common areas. Where there are a number of holiday accommodation dwellings on one allotment, only a proportion (1 in 4 and up to 1 in 10) of dwellings would need to meet these requirements.

The Victorian variation would pick up the remaining holiday accommodation dwellings not covered by the Premises Standard. These remaining dwellings would need to meet a minimum accessibility standard, designed to meet the safety and amenity requirements of the broader community.

APPENDIX 12: SHOWER OPTION FOR CONSULTATION

Level entry shower

The cost of a level entry shower was calculated to ascertain the cost for the inclusion of this feature. A level entry shower is flush with the floor and grading to a floor a waste and is popular today in new homes because of its appearance and practicality. In regard to access, these showers are convenient for the great majority of people. They may also reduce the incidence of falls associated with stepping into a bath/ shower and enable certain people who use wheelchairs to independently access the shower.

Table A11.1 shows the estimated cost (extra over) of building-in a 900mm x 900mm level entry shower, as one of the proposed features. The total extra over costs per unit, of including a level entry shower to those units with the accessibility features, have also been provided.

Table A11.1: Estimated cost (extra over) of building-in a 900mm x 900mm level entry shower

Features	**New build**		
	Per single house (Class 1)	**Per unit medium density No lift (Class 2)**	**Per unit Highrise with lifts (Class 2)**
Level entry shower *	$200	$70	$0
Total Extra over Cost of Features per unit with level entry shower	$1,070	$260	$1,000

Notes: * Based on the extra over cost for: bathroom floor graded to shower waste (except for Class 2), tanking in the vicinity of the shower to the bathroom floor, slip resistant flooring to the bathroom and shower, wall hung glass shower screen with no bottom track and a door with a minimum clear opening width of 820mm and noggings for shower seat.

APPENDIX 13: PROPOSED VICTORIAN VARIATION TO THE BUILDING CODE OF AUSTRALIA GUIDELINES

Introduction

The proposed regulation is a Victorian variation to the Building Code of Australia.[104] It proposes a mandatory requirement for four accessibility features, which are:

- a clear path from the street (or car set-down/park) to a level entry;
- wider doorways and passages;
- a toilet suitable for people with limited mobility on the entry level; and
- reinforced bathroom walls to allow grab rails to be fitted inexpensively if they are needed later.

The proposed application is to the BCA building Classes with definitions as follows:

- new Class 1a – '*new single dwellings'*;
- new Class 1b – '*a boarding house, guest house, hostel or the like'* (not exceeding 300m^2 and not exceeding 12 residents);
- new Class 2 – '*a building containing 2 or more sole-occupancy units each being a separate dwelling where a dwelling is above or below another dwelling'* to the following areas*:*
    - to the ground level of sole-occupancy units where there is no lift; and
    - to one in five sole-occupancy units where there is a lift.

Box A12.1 Visitability and the location of units in Class 2 buildings

An accessway would be provided to the entrance doorway of all sole-occupancy units served by a lift. This provides a degree of visitability to all such sole-occupancy units, whilst one in five of the units are required to have the accessibility features.

For high-rise buildings with lifts, there is flexibility in locating the one in five sole-occupancy units with the features. This would enable a wide range of developments and apartments.

Access standard

The accessibility features are designed to provide access for people with limited mobility to a visitable standard.

[104] The draft clauses should be read in conjunction with the BCA 2009. An assumption has been made that the draft *Disability (Access to Premises – Buildings) Standards 2009* (Premises Standards) will be coming into operation in the BCA. The Premises Standards are available at: <http://www.ag.gov.au/premisesstandards>. The Premises Standards relate to buildings that the public is entitled to enter or use, to meet the intent of the Commonwealth *Disability Discrimination Act 1992*.

This does not include all people with mobility restrictions; it does include, for example, people using crutches, or people using a manual wheelchair who are able to walk a short distance, or people using a walking frame.

This standard also provides for future adaptability. The provisions go some way to enabling cost-effective home modifications to a higher accessibility standard for people with greater mobility restrictions. For example, modifying passages at doorways to the Australian Standard 1428.1-Design for Access and Mobility.

The low-cost accessibility features have widths which are consistent with existing accessibility standards and proximate the dimensions typically used in the construction of Class 1 and 2 buildings.

Class 1 buildings

Victorian variation 3.8.3.2

The variation is that the currently required closet pan and washbasin must be located on the entrance floor level.

Victorian variation 3.8.3.3

The variation is that the currently required dimension of 1.2m between the closet pan within the sanitary compartment and the '*doorway'* is now measured to the '*nearest part of the door'.*

Vic P1

The performance requirement is that Class 1 buildings must have accessibility features to provide access for people with limited mobility.

Vic 1.0 Application

Compliance with Vic 1.1 to Vic 1.4 satisfies performance requirement Vic P1.

Vic 1.1 Path of travel to entrance

The prescribed requirements for the path of travel are designed to allow flexibility; the path can be from the front boundary or from a car parking space or car set-down area, to any entrance. Further, there is an exemption from the requirement where the natural ground slope along the possible paths is steeper than one in 14.

The deemed-to-satisfy requirements are derived from the Australian Standard 4299-Adaptable Housing and 1428.1-Design for Access and Mobility.

Vic 1.2 Doorways and passages

These requirements relate to the entrance doorway ground level required doorways and passageways. Widths are consistent with the Australian Standard 4299-Adaptable Housing.

Vic 1.3 Toilet access

The requirements ensure that there is a visitable toilet on the entry level. The area requirements for a sanitary compartment are consistent with a 'sanitary facility for people with ambulant disabilities' in the Australian Standard 1428.1-Design for Access and Mobility. If the required entry level toilet is located in a bathroom, that toilet must be in a corner.

Vic 1.4 Reinforced bathroom and toilet walls

Reinforcement locations are to a standard for people with limited mobility, based on requirements in the Australian Standard 4299-Adaptable Housing. For the toilet, the reinforcement requirements are based on the same standard as per Vic 1.3 above.

Class 2 buildings

Vic A1.1 Definitions

The definition of accessibility has been broadened from 'to enable use by people with a disability' to include 'or with limited mobility' to cover the visitability provisions for Class 2 buildings.

Vic D6.0 Deemed-to-Satisfy Provisions

Compliance with the current BCA deemed-to-satisfy provisions for escape, construction of exits and access for people with disabilities and the proposed Victorian variations, Vic D6.1 to Vic D6.7, meets the performance requirements DP1 to DP9.

Vic D6.1 Application of Part

The deemed-to-satisfy provisions apply to BCA Class 2 buildings and to a BCA Class 7a carpark which is associated with a BCA Class 2 building, which is proposed to be accessible under the draft *Disability (Access to Premises – Buildings) Standards 2009* (Premises Standards).

Vic D6.2 General building access requirements

Common areas in Class 2 buildings required to be accessible are from the entrance doorway to each sole-occupancy unit required to be accessible, to one of each type of space for use in common by the residents and where there is a lift or an accessible ramp, to the entrance doorway of each sole-occupancy unit on that storey and to spaces for use in common by residents on that storey.

Vic D6.3 Path of travel to entrance

The requirements are similar to Vic 1.1 for Class 1 buildings, where practical, except that it includes access from any required accessible car parking space in a Class 7a

building in association with a Class 2, in accordance with the draft Premises Standard.

Vic D6.4 Class 2 buildings – Common areas

The prescribed requirements for the path of travel in common areas and access to space for use in common by the residents are to be in accordance with the provisions in clause D3.3 and the draft Premises Standards.

Vic D6.5 Doorways and passageways

These requirements relate to the building entrance doorway and the doorways and passageways in sole-occupancy units which require the accessibility features. Widths are consistent with Vic 1.2 for Class 1.

Vic D6.6 Toilet access

The deemed-to-satisfy provisions for sole-occupancy units which require the accessibility features are consistent with Vic 1.3 for Class 1.

Vic D6.7 Reinforced bathroom and toilet walls

The deemed-to-satisfy provisions for sole-occupancy units which require the accessibility features are consistent with Vic 1.4 for Class 1.

Box A12.2 Current mandatory requirements

The Victorian Planning Provisions currently have mandatory requirements for access to certain dwellings under Clause 55.05 and Clause 55.02-3. If the variation to the Building Code of Australia proceeds, the Victorian Planning Provisions under the *Planning and Environment Act 1987* would be amended.

Mandatory provisions apply in other jurisdictions, notably:

The Australian Capital Territory planning provisions currently require one in 10 units in multi-unit housing be adaptable to the Australian Standard 4299-Adaptable Housing.

The South Australian appendix to the Building Code of Australia currently requires one unit in BCA Class 2 developments, or 5% of units (whichever is the greater) to be in accordance with Australian Standard 1428.1-Design for Access and Mobility for access. A compliant toilet, washbasin and shower is also required.

Alterations to buildings

The proposed accessibility features would only apply to new Class 1 and Class 2 buildings; the current Victorian requirements for alterations to buildings would not

apply.[105] However, any new building incorporating the proposed accessibility features must maintain those features through future alterations.

[105] Regulation 608 in the Victorian *Building Regulations 2006* requires that an alteration greater then 50 per cent of the original volume of the building and the remainder of the building, or an extension greater than 25 per cent of the original volume of the building, must comply with the building regulations. A building surveyor can consent to partial compliance of some aspects of the work if safety and amenity objectives can be met.

1. In the Victoria Appendix, in Vic A1.1, insert the following before the definition of "*Children's service*":

"Substitute the definition of "*accessible*" as follows:

Accessible means having features to enable use by people with a disability or with limited mobility."

2. In the Victoria Appendix,after the heading to Vic Section D insert the following:

"

FUNCTIONAL STATEMENTS

"Delete application box to DF1 and substitute the following:

Limitation:
DF1(b), with respect to people with disabilities or with limited mobility, does not apply to a Class 4 part of a building.

".

3. In the Victoria Appendix, insert Vic Part D6 as follows:

"Vic PART D6 ACCESS FOR PEOPLE WITH LIMITED MOBILITY

Vic D6.0 Deemed-to-Satisfy Provisions

(a) Where a *Building Solution* is proposed to comply with the *Deemed-to-Satisfy Provisions*, *Performance Requirements* **DP1** to **DP9** are satisfied by complying with–

(i) **D1.1** to **D1.16**, **Vic D1.4**, **D2.1** to **D2.23**, **Vic D2.21**, **D3.1** to **D3.12**, **D4.1** to **D4.6**, **D5.1** to **D5.6** and **Vic D6.1** to **Vic D6.7**; and

(ii) In a building containing an *atrium*, **Part G3**; and

(iii) For theatres, *stages* and public halls, **Part H1**.

(b) Where a *Building Solution* is proposed as an *Alternative Solution* to the *Deemed-to-Satisfy Provisions* of–

(i) **D1.1** to **D1.16**, **Vic D1.4**, **D2.1** to **D2.23**, **Vic D2.21**, **D3.1** to **D3.12**, **D4.1** to **D4.6**, **D5.1** to **D5.6** and **Vic D6.1** to **Vic D6.7**; and

(ii) In a building containing an *atrium*, **Part G3**; and

(iii) For theatres, *stages* and public halls, **Part H1**,

the relevant *Performance Requirements* must be determined in accordancewith **A0.10**.

Vic D6.1 Application of Part

The *Deemed-to-Satisfy Provisions* of this Part apply to–

(i) a new Class 2 building; and

(ii) a new Class 7a building associated with a new Class 2 building.

Vic D6.2 General building access requirements

Buildings and parts of buildings must be *accessible* as required by **Vic Table D6.2**.

Vic Table D6.2 REQUIREMENTS FOR ACCESS FOR PEOPLE WITH LIMITED MOBILITY

Class of building	**Access requirements**
Class 2	
Common areas	From an entrance doorway complying with **Vic D6.5** to the entrance doorway of each *sole-occupancy unit* required to comply with this Table. To and within not less than one of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, shop, eating area, or the like. Where a ramp complying with AS1428.1, or an *accessible* path of travel complying with **Vic D6.3**, or a passenger lift is installed that provides access to a storey– (a) to the entrance doorway of each *sole-occupancy unit* on that

	storey; and (b) to and within rooms or spaces for use in common by the residents on that storey.
Sole-occupancy units	To and within– (a) all *sole-occupancy units* on the entrance floor of the building if the building is not served by a lift; and (b) 1 *sole-occupancy unit* per 5 such units if the building is served by a lift.
Class 7a	
A carpark associated with a Class 2 building	From each carparking space required to be *accessible* to each required *accessible* entrance doorway to the Class 2 building.

Vic D6.3 Path of travel to entrance

(a) A Class 2 building must have an *accessible* path of travel, from–

(i) the front boundary of the allotment; or a car parking space on the allotment, except if the average slope of the natural ground along the possible paths of travel is steeper than 1 in 14; and

(ii) any required *accessible* carparking space in a Class 7a carpark building associated with the Class 2 building,

to a required *accessible* entrance doorway.

(b) An *accessible* path of travel must have a minimum clear width of 1200mm and–

(i) a continuous, slip-resistant, traversable, firm surface with a crossfall of not more than 1 in 40; and

(ii) if steeper than 1 in 33, have a consistent gradient between landings, which is a maximum gradient of 1 in 14 and a maximum length between landings of:

Gradient:	Maximum length

	between landings:
1 in 33	25 metres
1 in 20	15 metres
1 in 14	9 metres
Between 1 in 33 and 1 in 14	By linear interpolation

; and

(iii) landings at the bottom and at the top of the accessible path of travel, and at each change of direction if the gradient is steeper than 1 in 20, with a landing length of at least 1.2m exclusive of the swing of any door or gate that opens onto the landing; and

(iv) the maximum length between landings in (ii) where the gradient is greater than 1 in 20 may be increased by 30% where at least one side is bounded by a kerb and handrail, or a wall and a handrail, in accordance with AS 1428.1, clause 5.3,

except that a step ramp with a maximum gradient of 1 in 8 with a landing at its head and foot may be incorporated if there is a change in height of 190mm or less, provided that the landings have a length of at least 1.2m exclusive of the swing of any door or gate that opens onto them.

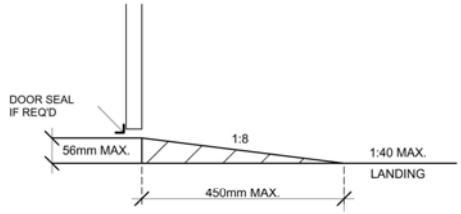
(c) A required *accessible* entrance doorway referred to in **Vic D6.5** must have a level threshold except that it may have–

(i) a change in level of not more than 3mm, or if the edge of the lip is rounded or bevelled the change in level must not be more than 5mm; or

(ii) a ramp in accordance with **Vic Figure D6.3**.

Vic Figure D6.3

RAMPED THRESHOLD



SECTION

Vic D6.4 Class 2 buildings – Common areas

A common area required to be *accessible* must comply with **D3.3**.

Vic D6.5 Doorways and passageways

A building must have–

(a) entrance doorways, and the doorways to all *sole-occupancy units*, required to comply with **Vic D6.2,** with a minimum clear opening width of 820 mm; and

(b) doorways to rooms on the entry level used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment purposes, with a minimum clear opening width of 820 mm in each *sole-occupancy unit* required to comply with **Vic D6.2**; and

(c) no change in level within a storey between the doorways referred to in (a) and (b); and

(d) any passageways between the doorway to a *sole-occupancy unit* and the doorways within that unit referred to in (b) must have a minimum clear width of 1m.

Vic D6.6 Sanitary compartment access

A sanitary compartment must be provided at the entry level of each *sole-occupancy unit* required to be *accessible* under **Vic D6.2** must–

(a) have a minimum clear width of 900mm between walls adjacent to a closet plan; and

(b) if located within a bathroom, have a closet pan in a corner of the room so as to enable compliance with **Vic D6.7**; and

(c) if located in a common area, comply with **D3.6** and **F2.4**.

Vic D6.7 Reinforced bathroom and sanitary compartment walls

(a) Except for walls constructed of solid masonry or concrete, the walls of a sanitary compartment required to comply with **Vic D6.6** and adjacent to a closet pan, and walls adjacent to a bath and a shower in a Class 2 building must be reinforced, to provide a fixing surface to accommodate future installation of grabrails located to assist with use of a closet pan, bath and shower, by provision of–

(i) noggings with a thickness of at least 25mm in accordance with **Figure Vic D6.7a**; or

(ii) structural sheeting with a thickness of at least 12mm in accordance with **Figure Vic D6.7b.**

(b) If a bath or a shower is located at the entry level of a *sole-occupancy unit* required to be *accessible* under **Vic D6.2**, at least one bath and shower on that level in that *sole-occupancy unit* must comply with (a).

Vic Figure D6.7a

Reinforced bathroom and sanitary compartment walls – location of noggings

Diagram a.

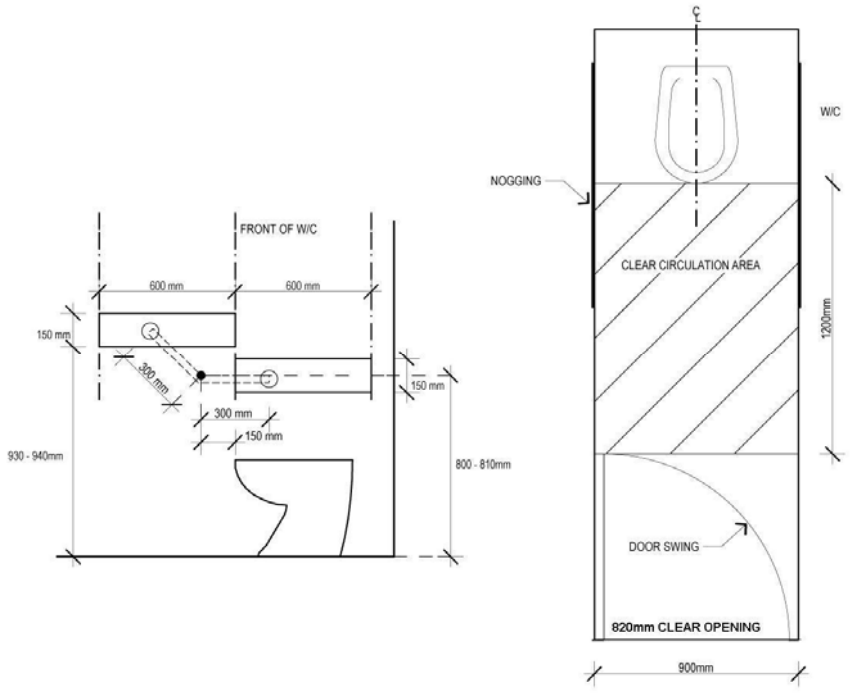


Diagram b.

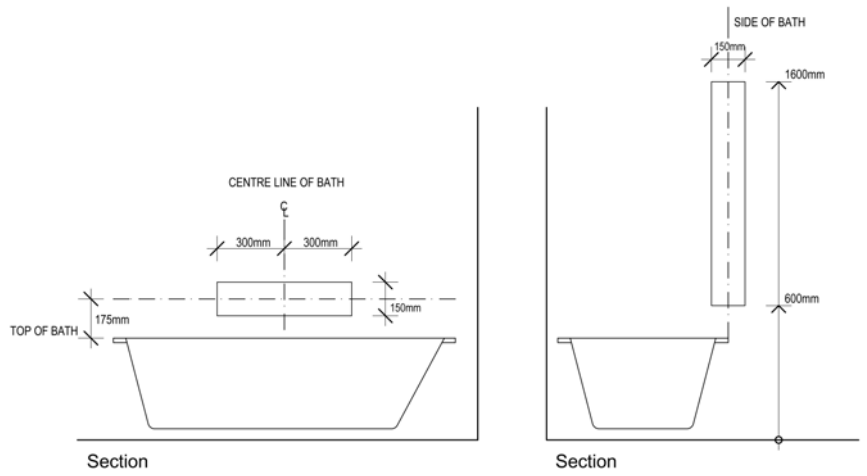
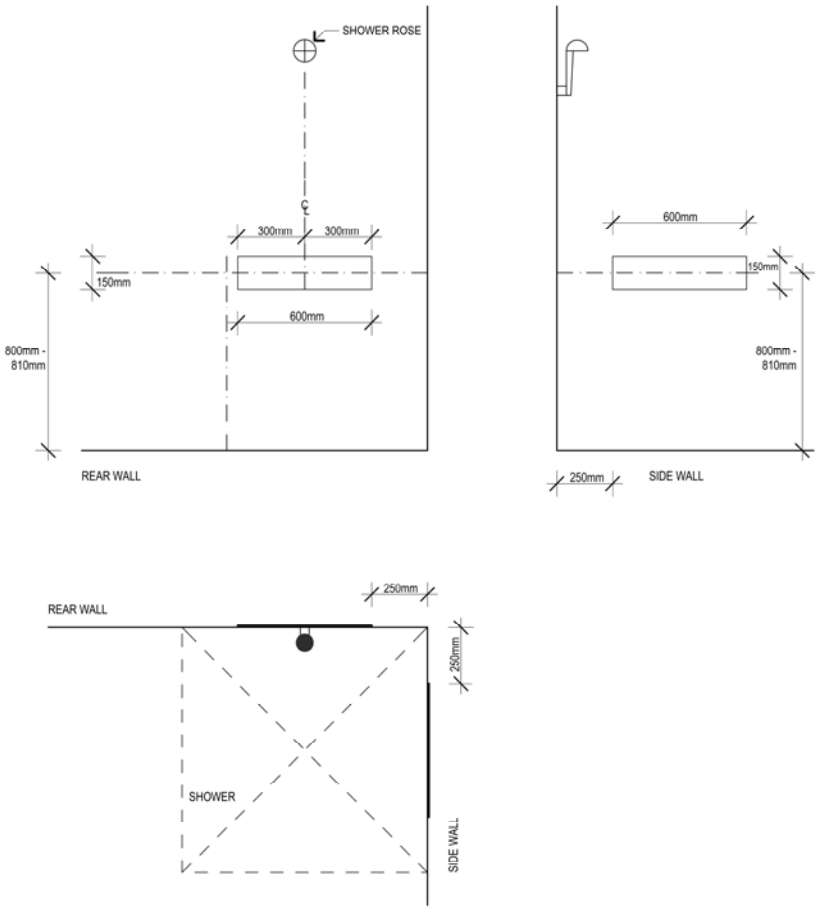


Diagram c.


SHOWER ROSE
300mm
300mm
150mm
600mm
800mm - 810mm
REAR WALL
600mm
150mm
800mm - 810mm
250mm
SIDE WALL
250mm
REAR WALL
250mm
SHOWER
SIDE WALL

Vic Figure D6.7b

Reinforced bathroom and sanitary compartment walls – location of structural sheeting

Diagram a.

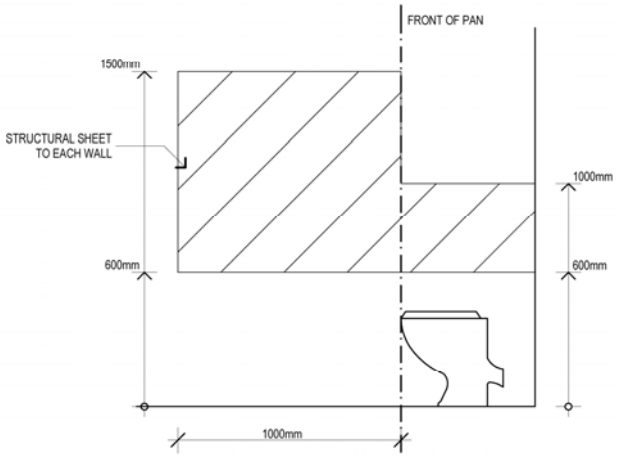


Diagram b.

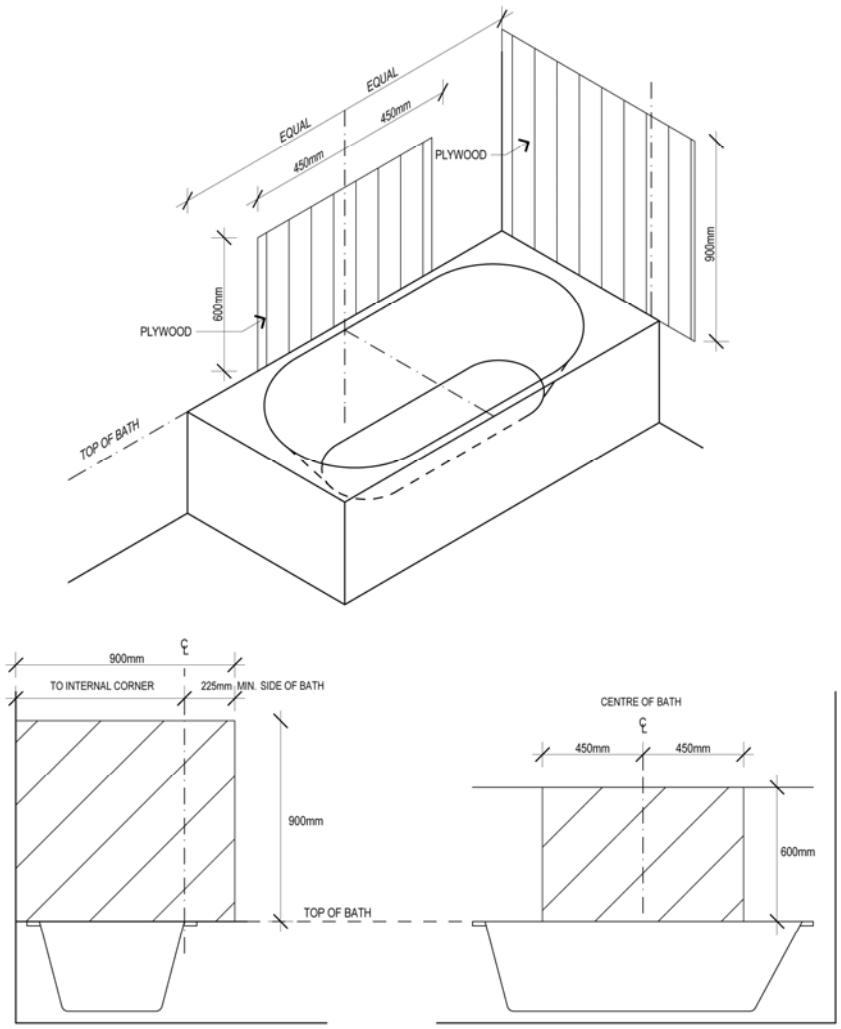
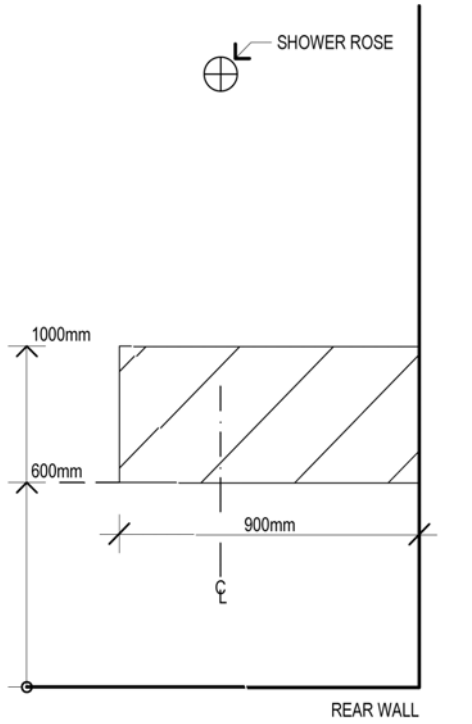
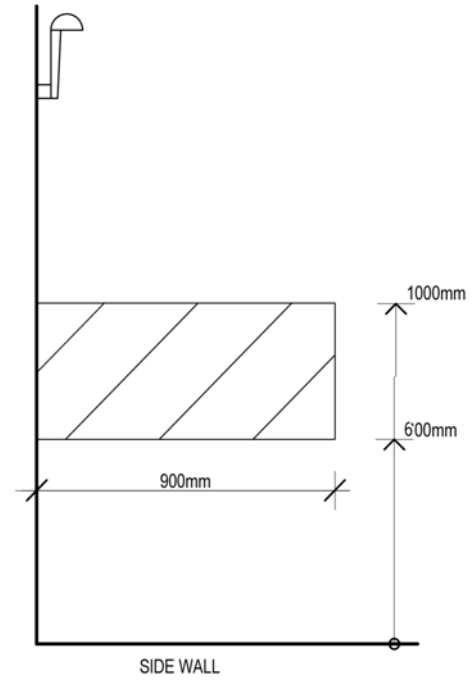

EQUAL
EQUAL
450mm
450mm
PLYWOOD
900mm
600mm
PLYWOOD
TOP OF BATH
900mm
TO INTERNAL CORNER
225mm MIN. SIDE OF BATH
900mm
TOP OF BATH
CENTRE OF BATH
450mm
450mm
600mm

Diagram c.


SHOWER ROSE
1000mm
600mm
900mm
REAR WALL


1000mm
600mm
900mm
SIDE WALL

APPENDIX 15: BCA VOLUME TWO – VICTORIA VARIATIONS AND ADDITIONS

1. Insert Victoria variation after 3.8.3.2 as follows:

STATE AND TERRITORY VARIATIONS

In Victoria, 3.8.3.2(a)(iv) is replaced by the following:

(iv) a closet pan on the entrance floor level and a washbasin.

2. Insert Victoria variation after 3.8.3.3 as follows:

STATE AND TERRITORY VARIATIONS

In Victoria, 3.8.3.3 is replaced by the following:

3.8.3.3 Construction of sanitary compartments

(a) The door to a fully enclosed *sanitary compartment* must have a clear space of at least 1.2m by 900mm in front of the closet pan within the *sanitary compartment*.

(b) The door to the *sanitary compartment* must not open into the clear space required in (a).

3. In the Victoria Appendix, add Vic 1 as follows:

Vic 1 ACCESS FOR PEOPLE WITH LIMITED MOBILITY

Vic O1 Objective

The *Objective* is to provide, as far as is reasonable, features that make dwellings more accessible to people with limited mobility.

Application:

Vic O1 only applies to a new Class 1 building.

Vic F1 Functional Statement

A building is to be designed to provide, as far as is reasonable, features that make access to and within dwellings safe, equitable and dignified for people with limited mobility.

Application:

Vic F1 only applies to a new Class 1 building.

Vic P1 **Performance Requirement**

A building must have, to the degree necessary, the following features to provide safe, equitable and dignified access for people with limited mobility –

(a) an accessible path of travel to a level entrance where reasonably practicable; and

(b) suitably wide and level doorways and passageways; and

(c) suitable bathroom and sanitary compartment walls to allow for future fitting of grab rails; and

(d) a suitably accessible sanitary compartment.

Application:

Vic P1 only applies to a new Class 1 building.

Vic 1.0 Application

Compliance with **Vic 1.1** to **Vic 1.4** satisfies *Performance Requirement* **Vic P1**.

Vic 1.1 Path of travel to entrance

(a) A new Class 1 building must have an accessible path of travel, from–

(i) the front boundary of the allotment; or

(ii) a car parking space, which may include the driveway, on the allotment,

to an entrance doorway complying with (c), except if the average slope of the natural ground along the possible paths of travel is steeper than 1 in 14.

(b) An accessible path of travel referred to in (a) must have a minimum clear width of 1000mm and–

(i) a continuous, slip-resistant, traversable, firm surface with a crossfall of not more than 1 in 40; and

(ii) if steeper than 1 in 33, have a consistent gradient between landings, which is a maximum gradient of 1 in 14 and a maximum length between landings of:

Gradient:	Maximum length between landings:
1 in 33	25 metres
1 in 20	15 metres
1 in 14	9 metres
Between 1 in 33 and 1 in 14	By linear interpolation

; and

(iii) landings at the bottom and at the top of the accessible path of travel, and at each change of direction if the gradient is steeper than 1 in 20, with a landing length of at least 1.2m exclusive of the swing of any door or gate that opens onto the landing; and

(iv) the maximum length between landings in (ii) where the gradient is greater than 1 in 20 may be increased by 30% where at least one side is bounded by a kerb and handrail, or a wall and a handrail, in accordance with AS 1428.1, clause 5.3,

except that a step ramp with a maximum gradient of 1 in 8 and with a landing at its head and foot may be incorporated if there is a change in height of 190mm or less, provided that the landings have a length of at least 1.2m exclusive of the swing of any door or gate that opens onto them.

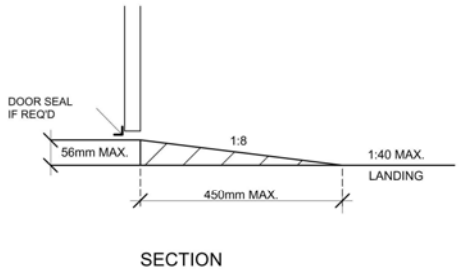
(c) The entrance doorway referred to in (a) must comply with **Vic 1.2** and despite **3.1.2.3(b)** have a level threshold except that it may have–

(i) a change in level of not more than 3mm, or if the edge of the lip is rounded or bevelled the change in level must not be more than 5mm; or

(ii) a ramp in accordance with **Vic Figure 1.1**.

Vic Figure 1.1

RAMPED THRESHOLD



SECTION

Vic 1.2 Doorways and passages

A new Class 1 building must have–

(a) an entrance doorway with a minimum clear opening width of 820 mm; and

(b) doorways to rooms on the entry level used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment purposes with a minimum clear opening width of 820 mm; and

(c) no change in level within a storey between the doorway referred to in (a) and the areas referred to in (b); and

(d) any passageways between the doorways referred to in (a) and (b)must have a minimum width of 1m.

Vic 1.3 Sanitary compartment access

A new Class 1 building must have a sanitary compartment–

(a) located on the entry level of the building; and

(b) with a minimum clear width of 900mm between walls adjacent to a closet pan; and

(c) if located within a bathroom, have a closet pan in a corner of the room so as to enable compliance with **Vic 1.4**.

Vic 1.4 Reinforced bathroom and sanitary compartment walls

(a) Except for walls constructed of solid masonry or concrete, the walls of a sanitary compartment required to comply with **Vic 1.3** and adjacent to a closet pan, and walls adjacent to a bath and a shower in a new Class 1 building must be reinforced, to provide a fixing surface to accommodate future installation of grabrails located to assist with use of a closet pan, bath and shower, by provision of–

(i) noggings with a thickness of at least 25mm in accordance with **Vic Figure 1.4a**; or

(ii) structural sheeting with a thickness of at least 12mm in accordance with **Vic Figure 1.4b.**

(b) If a bath or a shower is located on the same level as the entrance doorway complying with **Vic 1.1**, at least one bath and shower on that level must comply with (a).

Vic Figure 1.4a

Reinforced bathroom and sanitary compartment walls – location of noggings

Diagram a.

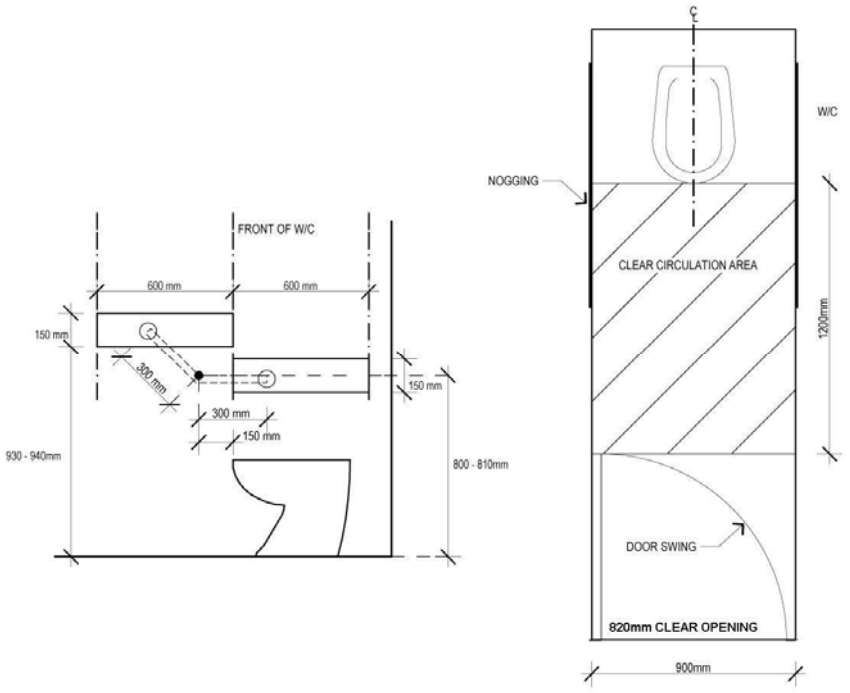


Diagram b.

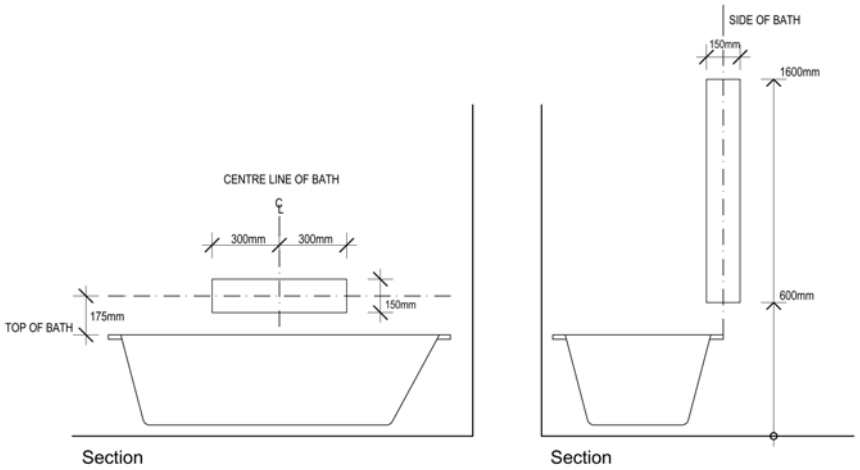
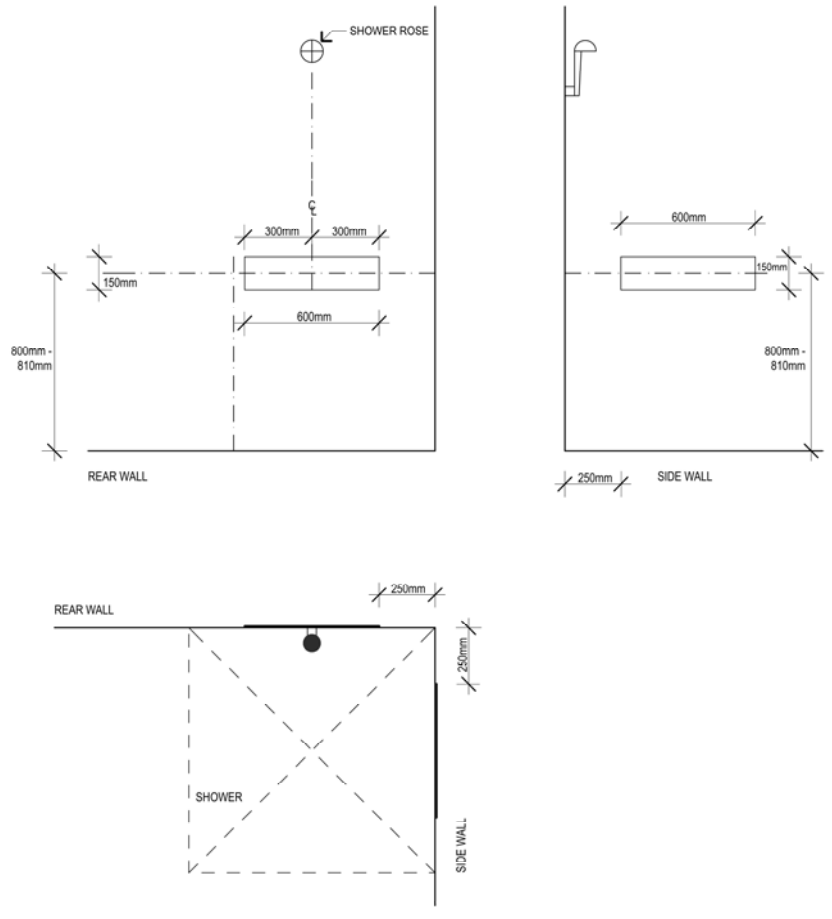


Diagram c.


SHOWER ROSE
300mm
300mm
150mm
600mm
800mm - 810mm
REAR WALL
600mm
150mm
800mm - 810mm
250mm
SIDE WALL
250mm
REAR WALL
250mm
SHOWER
SIDE WALL

Vic Figure 1.4b

Reinforced bathroom and sanitary compartment walls – location of structural sheeting

Diagram a.

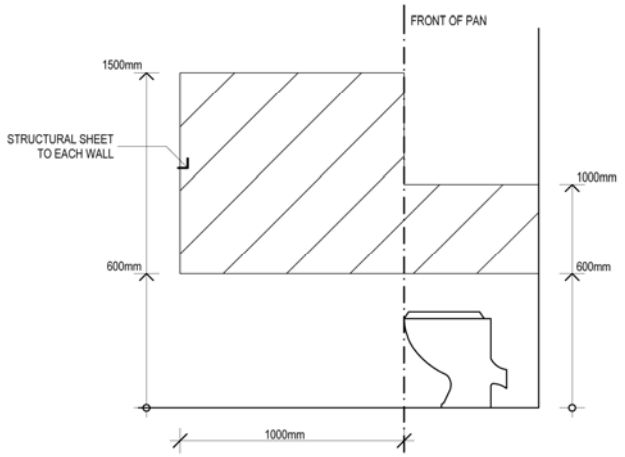


Diagram b.

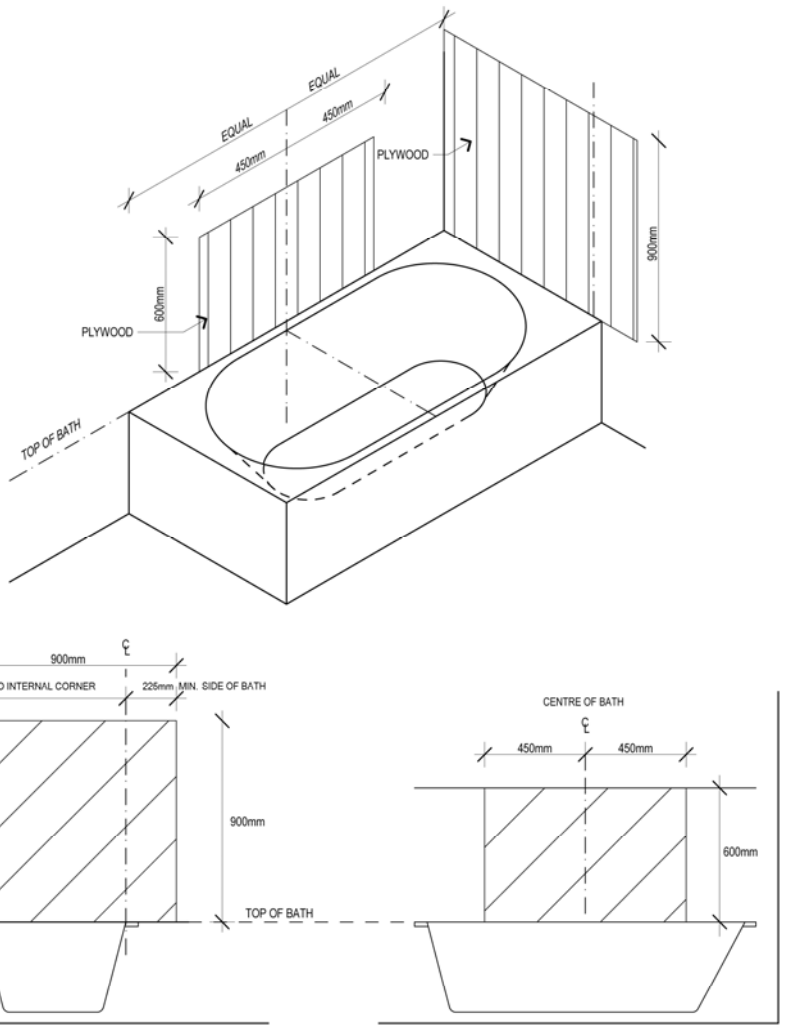
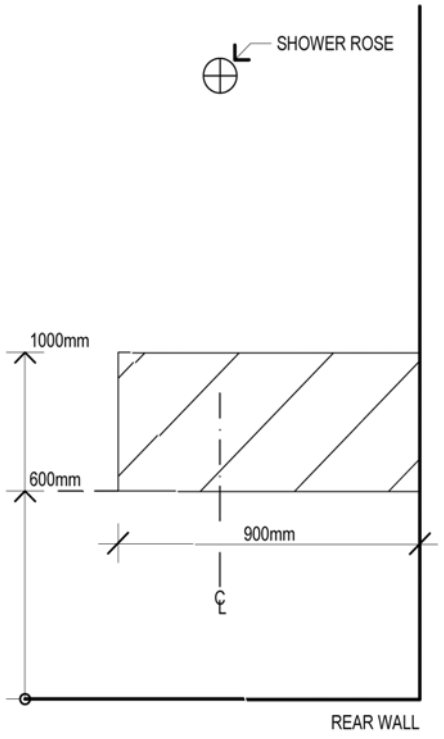
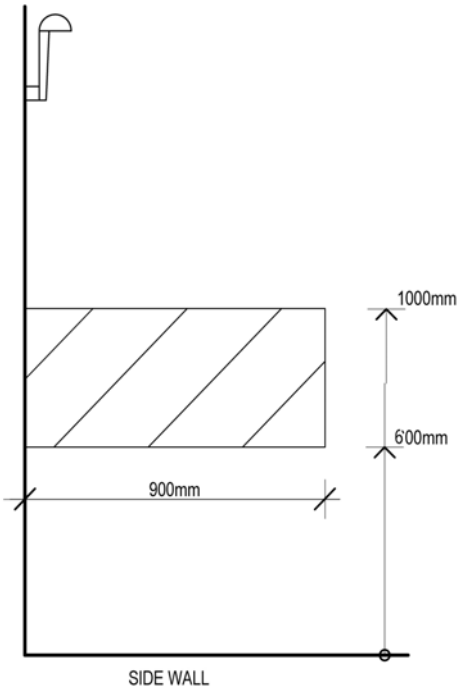

EQUAL
EQUAL
450mm
450mm
PLYWOOD
900mm
600mm
PLYWOOD
TOP OF BATH
900mm
TO INTERNAL CORNER
225mm MIN. SIDE OF BATH
900mm
TOP OF BATH
CENTRE OF BATH
450mm
450mm
600mm

Diagram c.


SHOWER ROSE
1000mm
600mm
900mm
REAR WALL


1000mm
600mm
900mm
SIDE WALL