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Frank Fenner Foundation Submission to the Australian Capital Territory (ACT) Government Housing Choices Engagement Project, providing feedback on the Housing Choices Discussion paper, November 2017

A. Introduction

By international standards, the city of Canberra and the ACT more broadly, are examples of mostly well planned development. The initial Garden City concept understandably has changed over time; although there has been much well-considered planning and implementation, there has been some development which is not well supported by many citizens and apparently out of step with the initial vision.

It is important to recognise that Canberra has some of the most far-sighted strategies for the future, including 100% electricity obtained from renewable sources, the reduction of greenhouse gas emissions, the encouragement of innovative design and businesses, a longer term waste management goal and, generally, maintenance of a verdant and healthy local environment.

It is understood that the Territory Plan (TP), the purpose of which is to manage land use and development in the ACT, should be consistent with strategic directions set by the ACT government, legislative assembly and the community, and the National Capital Plan. The TP aims to provide the people of the ACT, an attractive, safe and efficient environment in which to live, work and have their recreation. The TP should meet the recommendations of the National Development Assessment of the Planning Institute of Australia (1). The National Capital Plan is the strategic plan for the ACT, in accordance with its national significance – which includes the pre-eminence of the city's function, its symbolic nature for the nation, conservation and enhancement of its landscape, respect for the Griffins' formally adopted plan and the development of a city which respects environmental values and is concerned with the sustainability of Australia's urban areas.

Crossroads appear to have been reached, and Canberra has an opportunity, which should not be missed, to instate a planning process that is likely to meet the needs of the majority of the population in the future.

A coherent approach to planning in this city should involve the integration of the essential stakeholders and their perspectives within a rigorous and well supported planning process, that stipulates robust yet flexible boundaries and guidelines for any planning that occurs in the ACT and peripheral areas.

Frank Fenner Foundation (FFF) has been developing an urban framework, based on biosensitivity principles, which, it is anticipated, will have many applications for various human activities, including urban planning. It is founded on the concept of 'Biosensitivity', coined and developed by Pr Stephen Boyden, at the Australian National University. FFF promotes the transition of human society to one that is biosensitive - prosperous, cohesive, just and in tune with and respectful of nature and other living beings. This will mean human activities are ecologically and economically sustainable and socially equitable, based on a deep understanding and acceptance of the human place in nature and within safe planetary boundaries.

This concept may seem very broad, however, given the interdependence of species, the profound dependence of the economic system on the environment, locally and globally, global warming, and an increasing human population with largely increasing consumption levels, it encourages the adaptation of human activities to the ecosystems of this planet of which we are a part.

Some basic principles to consider, for urban planning:

- A unified view of human activities, with environmental, social and economic processes integrated and embedded into planning;
- Early and comprehensive community engagement in the planning process, with longer consultation periods, via participatory and deliberative democratic processes such as citizen and expert juries or panels;
- Adoption of Sustainable Development Goals, and other relevant sustainability guidelines, such as biosensitive approaches, to all ACT urban planning, with strictly controlled exceptions;
- Include retro-fitting/redesign of housing and suburbs in urban planning reviews;
- Consideration of population issues to allow the timely adaptation of infrastructure, including housing, to varying demands. Although not addressed much yet generally by governments, population forecasting and risk management is likely to help maintain the quality of life for most in the future.

One overarching approach to thinking about urban planning, with a strong focus on the environment, as well as human health and wellbeing, is the Biosensitive Urban Framework (FFF):

- The major components of the framework are: **infrastructure/ technology** (hardware), **governance** (of the place once established/locale once built) and **compliance** (monitoring and feedback) for operational use (software), and **education** (about each of the other components).
- These components operate at 3 geospatial-levels: **Landscape, Neighbourhood, and Household** .

The inter-relating themes within the framework are shown in Figure 1.

Figure 1 Biosensitive Urban Themes

Acknowledged and Respected Nature Active respect, Ecosystem function, Biodiversity, Landscape, Co-resilience	Cultural Heritage Indigenous, Settler, Contemporary	A Well Earth Healthy ecosystems, Efficient resource use, Minimal waste / pollution, Safe climate	Food Quality and Security <i>For people and other species</i> Growing, Supply system	Water Quality and Security Fresh water, Collected water <i>for people and other species</i>	Shelter / Habitat / Urban Spaces Human habitation, Other species	Security/ safety/ justice / peace Individual, Community, Global	Meaningful Human Occupations Education, Employment, Leisure / recreation	Human Connectivity Social capital, Transport, Communications, Technology	Process of Cultural Change Societal, Individual
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B. Response to the discussion paper

1. Current housing choices in lower density suburbs

This section integrates neighbourhood and household level into the broader landscape. Whichever solution is adopted for infill and other development in RZ1 zones, in addition to, for example, maintaining solar access, low energy demand heating and cooling, amenity, affordability, reasonable choice of form of dwelling and its financing, needs to take biodiversity and the presence of other species into account at all stages of planning. Consideration of other species, plant and animal, within the urban patchwork, from the beginning of the process, may well open innovation opportunities. Also, incorporating the pre-existing underlying landscape and contours, as well as designed absorptive surfaces, including in established suburbs, should enable better water and flood management along with other benefits.

RZ2/RZ3 type housing is probably more likely to be accepted within existing suburbs. High rise apartment blocks may be less disruptive and more acceptable if grouped carefully in dedicated zones. A mix of housing types, as outlined in the discussion paper, is more likely to maintain the character of existing suburbs, including the existing vegetation, which should be preserved and/or extended as much as possible. Avoiding long series of identical frontages will help maintain the existing streetscape experience. For example, alternating many different housing types and access points, including single dwellings, dual occupancies, cul de sacs, townhouses and low rise multi-unit dwellings, interspersed with easily accessible green and recreational spaces, will help preserve the varied dwelling character of Canberra's older suburbs and ensure pleasant new suburbs.

Urban densification needs to account for increasing demands on sewerage, flood control and other infrastructure, as well as the 'nature' corridors mentioned above. As is occurring at present in the ACT, this type of design can improve amenity in the local environment, with wetlands and other features.

Edmonton in Canada has been addressing these and equivalent issues for several years, including for zoning and financing. Such approaches can be seen as a form of Green Urbanism, which seeks to regenerate existing suburbs and greyfields (outdated and/or underused areas, such as shopping centres) via planning and design (2).

2. Good housing design

Principles of leading housing design should also be inspired by international best practice, adapted to the local context. Liveability incorporates adaptability as a core concept from the beginning of the design process. Livable Housing Australia has developed a series of guidelines and states that a liveable home is designed and built to meet the changing needs of occupants across their lifetime (3). Similarly, flexible approaches to the use of land for vehicle parking close to dwellings should allow for changing uses over time eg by using easily converted surfaces such as gravel.

The proximal environment of the dwelling is an essential component of the housing design, from the individual dwelling, via the neighbourhood, to the suburban/landscape scales. This should assume reasonable access, including for walkability, to local commercial, recreational and cultural facilities, and pleasant park areas/urban forests. Plot ratios, flexibly adapted to specific blocks and within specified limits, the living infrastructure such as the amount and siting of ornamental vegetation, including for temperature management and amenity, facilitation of food gardening via beds and water access, are examples of context guided housing design. Local wildlife wellbeing, including

species other than birds, and within proximal biodiversity assessment, should be incorporated into all construction projects.

Good house design needs to include affordability and choice, as basic tenets. A well-researched approach is that of the Urban Land Institute which has developed the “Ten Principles for developing affordable Housing”(4). This multi-facetted approach supports strong and meaningful relationships among stakeholders.

The human health consequences of housing design should form part of the issues integrated early into planning processes. Tony Capon, Professor of Planetary Health at the University of Sydney, has long experience in the field of human health and urbanisation. He argues that “cities can be cooled down by growing more vegetation and through improved landscape planning, building design, and construction methods” (5). By ensuring health issues are an essential part of planning, there can be improved selection of materials used in construction, such as consistent use of low volatile organic compound (VOC) building materials, with habitat aspect and vegetation seen as a functional component with health and amenity benefits.

Professor Capon also emphasises that context is important. He writes, “No single model exists for sustainable and healthy urban development. Cities, rightly, should reflect their unique geographies, histories, economies, politics and cultures” (6).

The ‘good house’ also integrates into the garden at the household level, to that nature links into how people live in the house / garden, and goes beyond food production and amenity to include landscape level nature / wildlife corridors.

3. Examples of well-designed housing development

Again, it is in the housing development design that the three levels (landscape to household) need to integrate with each other and the overall development. The Riverview Ginninderry development is an example of a collaborative approach, to which FFF and a broad range of community organisations and groups are contributing on a consultative basis. As an example of the clear departure from business as usual, for the Ginninderry development so far, has been the all-electric pilot project, which specifies no natural gas infrastructure, for Stage 1 of the development (7) to build greenhouse gas emission reductions into the fabric of the infrastructure.

Housing affordability should allow for diverse forms of access to home ownership, rental or leasing. Although affordable housing is not the only criterion for successful housing design, well-conceived social housing can enhance the quality and attractiveness of housing in general. Several examples around the world illustrate what can be achieved with sound approaches (8). Again, such design is largely context dependent, whilst encouraging innovation.

4. Complementary considerations

A broad approach to housing design should include the adjoining peripheral or peri-urban areas. There are researchers and groups examining a variety of approaches to comprehensive ecologically sustainable urban design, including locally.

Professor Barbara Norman, of the University of Canberra, also Director of Canberra Urban and Regional Futures (CURF), recently launched ‘Sustainable pathways for our cities and regions, planning within planetary boundaries’. She uses examples from cities committing to sustainability, to illustrate the value of adaptive planning with a long-term vision, via sustainable pathways (9). CURF

has released several relevant publications, including ‘Working towards a carbon-neutral society: Canberra and the Region’.

Professor Janis Birkeland, currently at the University of Melbourne, and who has held positions at the University of Canberra and the Australian National University, developed the theory of net positive development and design. Her book, ‘Positive development: from vicious circles to virtuous cycles through built environment design’ (10), comprehensively addresses urban sustainability and contends that this “will require increasing the total amount of ecosystem goods and services, as well as increasing the health and resilience of the natural environment”; this being undertaken equitably. This concept ultimately aims “to create surplus eco-services and public amenity”.

The Clean Air and Urban Landscapes (CAUL) Hub, which is an engagement and research consortium, takes a comprehensive view of the sustainability and liveability of urban environments, in particular air quality, urban greening, transport futures and urban biodiversity (11). The housing industry has the opportunity to contribute to the city’s green infrastructure as well as reducing the environmental impact of housing.

Landcare ACT, which encourages community involvement, supports local landholders, the integration into planning of peri-urban land use, preservation of biodiversity, and values the stewardship of rural land in the ACT. This is another example of building neighbourhood into the broader landscape level of the Biosensitivity Framework.

Addressing Global Warming and Climate Disruption (in line with the ACT’s commitment to greenhouse gas emission reductions) is an important element of housing and neighbourhood design processes in the ACT, for adaptation to weather and climate changes anticipated for the region, for greenhouse gas mitigation by reducing household emissions and waste, by being more in tune with and respectful of ecosystem services by the housing industry, as well as mitigating property value risk.

Cooperation between cities globally, particularly those clearly addressing the complex issues involved, should improve the ways cities deal with the multiple challenges of climate change. Some 90 major cities around the world connect via the C40 Cities Climate Leadership Group (C40) – including Sydney and Melbourne in Australia. It is worth noting that in 2016, Canberra was ranked as a world climate change leader by CDP (formerly the Climate Change Disclosure Project) for environmental risk reporting

C. Conclusions

FFF considers that housing development in the ACT should incorporate, integrate and embed, processes consistent with a biosensitive approach, into urban and peri-urban sustainability from the beginning of the urban planning process. This would include the ACT government consistently and openly adhering to its own guidelines and standards, allowing few exceptions, as well as strong community participation via deliberative practices along with government, developers and other stakeholders. Planning for an increasing population, should form and fundamental part of the housing development process.

Innovative housing design, and as a consequence housing choices, should have the broadest intent and most flexible application, by incorporating ecosystem, other environmental, social and economic consequences at all stages of its development. This will ensure housing is the best adapted to given locations and conditions, for optimal liveability, anticipating as much as possible future

weather and climate, including extreme weather events and their consequences, reducing risks to property values and insurability, and allowing gradual adaptation of uses for different demographic groups at various stages of the cycle of human life.

We strongly support the application of the best possible urban housing design principles to the proposed demonstration housing projects.

D. References

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