

Floreat Precinct Structure Plan - Submission

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Introduction

The Town of Cambridge (Town) is commended for initiating this Floreat Precinct Structure Plan (FPSP). The report has taken on board suggestions from public workshops which is a good start. Further community involvement is very important if the aim is to get the best outcome for Floreat.

To get the best outcome for the community an evidence-based approach should be followed. So community involvement should not be based on *staged co-design* as described by Maginn (2007) by it being a *regulated tick box exercise*. For the FPSP and other structure plans of the Town to be successful a *Poldermodel* approach needs to be considered (Orizzonte-Ramirez, 2023; van der Linde, 2021).

“Achieve an enhancement of the garden suburb qualities of Floreat. Connect suburb with centre, school and open space. Improve the quality of the public realm and connection with surrounding focal points. Minimise impacts on the road network and improve quality of access. Improve the safety of access to and through the Floreat Activity Centre, including pedestrian access to/from Floreat Park and Floreat Primary School. Provide for mixed-use development that separates active use from residences. Achieve a mid-rise, compact built form that addresses key yield objectives. Achieve a place for everyone, of all ages and needs that celebrates the best elements of the Floreat community.” (p. 6) ¹.

This is a wonderful opening statement in the FPSP but there are gaps in the way it is proposed to be implemented . This submission deals with those gaps. To discuss them details will be raised that do not necessarily belong in a structure plan, however they are important enough to include them. These points could be added to the final structure plan as a supplement that guides future readers and decision makers. We do not want to be descriptive in the design for the developer except that sustainability cannot be compromised, so detailed examples and suggestions are included.

We live in a time of a climate emergency therefore environmental considerations are paramount if we wish to provide a positive future for Floreat.

¹These sections in italics are quoted from the FPSP document on which we are commenting.

1. Design

“Plays a key role in enhancing a distinctive and memorable ‘international style’, mid-century architecture of Floreat.” (p. 28). “Floreat is one of Perth’s premier garden suburbs. It is a neighbourhood celebrated for its single residential character, generous landscaping, mature tree canopy and varied topography.” (p. 41).

If it is desirable to integrate the original building styles in the precinct then ‘late Art Deco’, which is the style of many of the houses in Floreat including those close to the Forum, should be included. Not a carbon copy, but an interpretation of them. This in combination with the original concept for the design of Floreat Park according to the “Garden City” movement.

“Delivers highly integrated, memorable public and private places that reflect a native landscape character (through use of native and endemic species)” (p. 28).

To achieve this goal a spatial redesign needs to occur. The ‘Civic Square’ next to the Boulevard needs to be shifted to the centre of the development to be more useful and away from a busy road, now it is tucked into a corner. It should form the centre as a “Town Square” of the redevelopment (Figure 1). “Village Lane” to be widened with porticoes, currently too narrow for large pedestrian flows to and from the Village Square.



Figure 1. Town Square instead Civic Square.

One of the key design elements is human scale (Matan & Newman, 2016). The areas where there are eight storeys overshadow the primary school. So the eight storey buildings should be on the southern part so they could only overshadow the sporting grounds. This would also deliver more floor space which would be desirable for the developer.

“Frontages to Howtree Place and Floreat Avenue, particularly at key entry points to the Floreat Activity Centre site are uninviting and diminish the place qualities of the centre. The frontages are dominated by parking facilities, loading docks and service areas that present negatively to the surrounding high-quality residential streets and public places” (p. 77).

“Connect suburb with centre, school and open space.” (p. 36).

“Major retail outlets are contained within a single building, discouraging interaction with goods and services areas in other parts of the centre. Most external movement to and through the centre occurs because of arrival, either by public transport or from an external parking area.” (p. 76).

“The Landscape and Public Realm Masterplan includes provision for a substantial improvement in crossing at the junction of Chandler Avenue (West), Village Lane and Howtree Place. This important urban structure improvement ensures that pedestrian/cycle movements between the Floreat Activity Centre and nearby Floreat Park Primary School and Floreat Park is prioritised.” (p. 76).

These quotes show the importance of connecting the areas west and east of the Forum to each other via the Forum. Howetree Place is an obstruction to this connectivity, that will be removed if the road is (partially) sunk. Since a large part of the Forum is higher than Howetree and Howetree higher than the sporting fields to the west it should be feasible (Figure 2, 3 & 4). The Howetree Terrace build over the sunken road can contain the north-south cycleway and footpath. If a portico is constructed, they could be an ideal for restaurants to have their outdoor tables. This will have the following benefits:

- Free flow over the Chandler Avenue axis connection of Precinct with Floreat primary School (Chandler West).
- Opportunity for restaurants or conference centre overlooking the sporting precinct.
- Additional public space.
- Place to have the footpath and the cycleway.

- Level access to underground carparks.
- Hiding ugly west facade.
- Will improve the north-south vehicular traffic flow.
- Any passenger waiting at the bus stops underneath would be covered from the elements.
- Increased area over Howetree Place for developers to build.

Figure 2. Sunken Howetree Place and Howetree Terrace with footpath and cycleway.

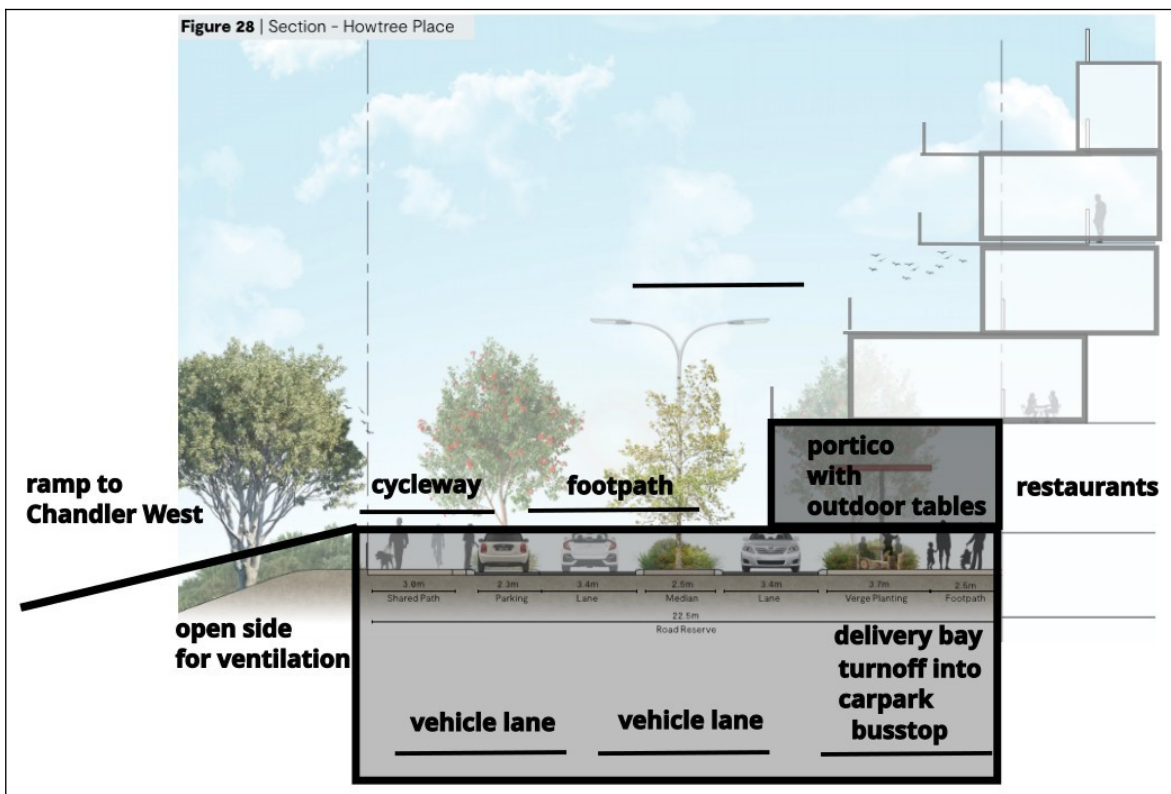
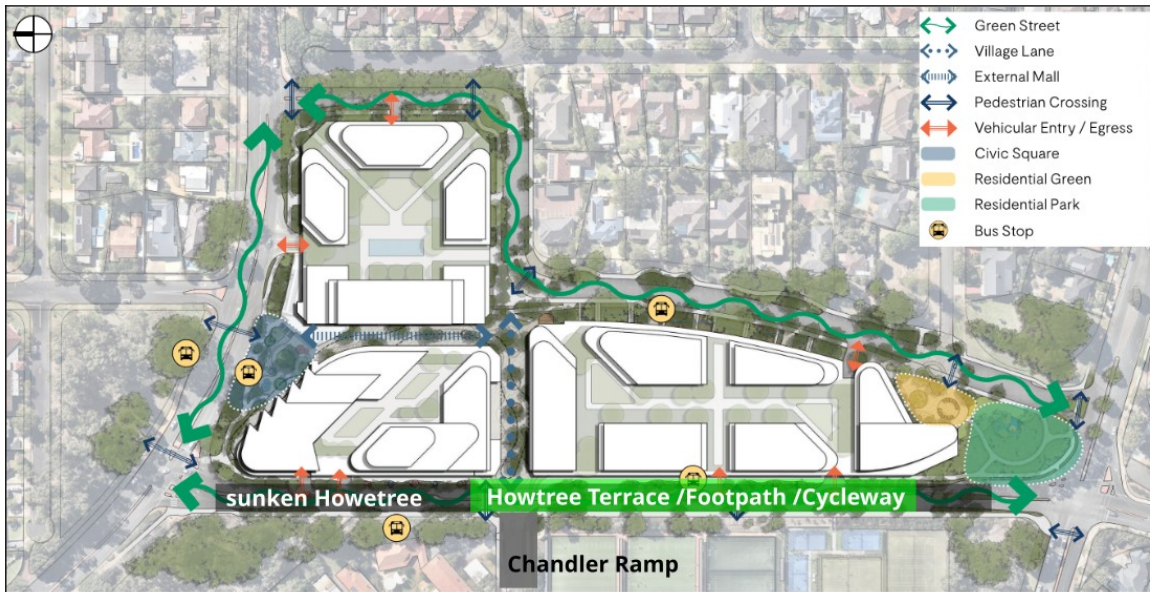


Figure 3. Schematic cross-section sunken Howetree Terrace with portico, footpaths and cycleways.

“Floreat is one of Perth’s premier garden suburbs. It is a neighbourhood celebrated for its single residential character, generous landscaping, mature tree canopy and varied topography”. (p. 41) So many newly built houses do not conform with the garden city “Floreat” architectural style. Many trees are removed and together with buildings that take up a large portion of the lot and hard landscaping the tree canopy has reduced considerably in Floreat, not to mention the larger Town of Cambridge.



Figure 4. Howetree Terrace could have a similar vibe as this street in Bologna, Italy.

“A key element of this Precinct Structure Plan is to achieve a Precinct that works for the whole community, offering services, opportunity and sustainable living for young and old.” (p. 72).

“Plans for multi-generational land use, including providing for aged-care and child care services within the Precinct” (p. 72).

“Ensuring provision of sufficient supermarket floor space, which is typically a use that is accessed locally. – Limiting the provision of space for other shop and retail uses, to partially respond to demand, without over-providing for uses that might serve a wider catchment. – Focusing non-shop uses on land use that serves the characteristics of the local community, including aged care, child care and health services. – Facilitating local pedestrian and cycling movements to encourage localised access.” (p. 97).

“The Cambridge Library and Boulevard Centre are important community focal point and adds to the offering at the Precinct. Retaining these key community facilities in future redevelopment scenarios is a key outcome of this Precinct Structure Plan. Retention or redevelopment of the existing facility are both contemplated and planned for by this Precinct Structure Plan. A redevelopment scenario presents opportunity to integrate the library and function centre

elements into a future mixed use building. This building is planned to accommodate key non-retail activities and could include an aged-care facility, hotel, medical consulting rooms, office or child care functions.” (p. 99).

The retirement village concept at the Floreat Park Primary School needs to be developed in conjunction with aged care facilities at the FPSP. It is outside this scope but the idea to have Floreat Park Primary School remodelled in multi storey and then adjacent land a multi storey retirement village. To get synergy between the young and old. Basically, rejuvenating the plans worked on by architect Ian Wilkes and others before the GFC.

The Library should remain and possibly remodelled internally but is not a priority. The idea of demolishing everything because it easier to build new is a non-sustainable attitude and this would be contrary to the sustainability statements in the FPSP. The demolition cost is more than just disposal of the material, as a life cycle assessment will show the cost of embodiedenergy will be a significant amount, which is dealt with in section 4.

“Enable provision at a later stage of redevelopment, to appropriately respond to market demand.” (p. 96).

This is a vague statement with no clarifying principles and should be removed or amended.

“While an important activity centre, the Floreat Activity Centre is isolated for major transport connections.” (p. 97).

Therefore, it is important to facilitate walking and cycling to the Forum. In addition, improved public transport is needed.

2. Sustainable Buildings

To just mention sustainable building is not enough to make the development sustainable. It must be made obligatory that the development has to be carried out according to the Cradle to Cradle and Circular Economy principles (McDonough & Braungart, 2002; Kraaijvanger, 2023; Rau & Oberhuber, 2020).

“The design of buildings that optimise natural cooling and heating via passive solar design, promoting air movement and providing shade.” (p. 45).

During COVID ventilation was raised as a major issue in many buildings. The building designs should incorporate natural ventilation both for residential and commercial premises. Having balconies would help with ventilation and provides the ability for occupants to be outside without leaving their dwelling.

The roof of the current shopping centre is full of PV panels. That should be the same for the new buildings. The PV panels will be more useful and less costly to maintain than the proposed ‘green roofs’.

The buildings should have only electricity connected. Gas is a highly polluting non-renewable resource, which adversely affects human health and having no gas saves development costs (Jacobs et al., 2023; Nirajan, 2024). The precinct should be made ready for EV charging.

3. Environment

*“Addressing climate change is a **key outcome** of this Precinct Structure Plan” (p. 72) (authors highlight).*

“Is supported by clear and sustainable management arrangements that will maintain or enhance the quality of constructed and natural landscapes over time.” (p. 28).

“2.2.4 Bush forever There are no Bush Forever sites within or adjacent to the Precinct. There are Bush Forever sites to the southwest, west and northeast of the site. These are unlikely to be impacted by the proposed increase in development.” (p. 43).

“The Department of Biodiversity, Conservation and Attraction’s (DBCA) Threatened and Priority Fauna database identified that there is one threatened species (listed as endangered) that has been recorded within the site. It is noted that the recorded locations of species within this database are indicative and based on sightings, and do not indicate permanent presence or habitation of the species within this area. Within a 1 km radius of the site, the database identified 407 recordings of threatened fauna and 36 recordings of priority/specially protected fauna. 2.2.7” (p. 43).

There is a lack of environmental connectivity by the FPSP to its surrounds. It is understandable that the FPSP focuses on the precinct, however the precinct is connected to the rest of Floreat. Has there been an investigation by the Town how the FPSP can get linked to the “Perth Regional Ecological Linkages” (Figure 5) (Molloy, 2009); a task for the Town to implement. The worry is that the structure planning of Town will be done piecemeal and the environment misses out.

“The local water catchment extends to the south-east of the precinct and drains through the Subiaco main drain” (p. 45).

Drainage water should not be going to the ocean but used in a more sustainable way, not dumping it in the ocean. For example, for watering the sporting fields (Cresswell & McFarlane, 2024; George, 2024; McFarlane, 2019a, b, c).



Figure 5. The Perth Regional Ecological Links in relation to the Floreat Forum.

The phrase “Garden Suburb” is used all the time to describe Floreat, however over the last decades much of the green-spaces have disappeared on private land as have old houses. Therefore, a minimum of 25% of green space is required for any development.

Has there been assessment of contamination from the old petrol station at the south end of the Forum? Was this site cleaned up at the time of the last renovation and extension of the carpark?

“The Strategy identifies that approximately 42.2% of the Floreat suburb is dedicated to open space, in a variety of forms. It further outlines that approximately 94.9% of the Floreat suburb area is within 400 metres of an area of public open space.” (p. 52).

Do these number include Perry Lakes and Bold Park? If so, this gives a skewed view that Floreat is a very green suburb and further greening is not a priority; as if everything is ok.

3.1. Landscape

On page 26 is stated “*minimum deep soil area*” but there is no explanation of what this means and what the impacts are.

“The integration usable green roofs as part of new development.” (p. 45). “Additional deep-soil areas may be provided on roof-top spaces, which may result in ever greater deep-soil coverage” (p. 70).

The document suggests roof top gardens; on face value a nice idea. However, the roof space should be used for PV installation. Also, in our harsh climate maintaining a successfully a rooftop garden is very difficult. That is also valid for any trees in pots in the precinct.

This is not part of the FPSP but the Town needs to upgrade the little park between Floreat Ave, Newrey and Oceanic which is mainly occupied by invasive Brazilian/Japanese Peppertree (Figure 6). Make it a nice native garden with all year around flowering plants, a real feast for native bees and when established now it will benefit the future development.



Figure 6. Little park that needs upgrading with natives by the Town.

3.2 Light Pollution

“Be sufficiently illuminated to allow for safe use and encourage night-time activity.” (p. 27).

Naturally good lighting is a requirement, but “light pollution” is nowhere mentioned in the FPSP. All the good work by greening the project could be undone by light pollution which is a major but under reported issue in urban development (Haddock, et al. 2019; Horton et al., 2019; Newport, et al., 2014). The Town has to study this also for the surrounding areas. Minimise the light pollution especially in the green corridors by amongst others lowering the K-value of the light to produce a warmer colour. With modern electronica and the use of LED lights motion sensors could be used to partially dim and lighten lights.

4. Life Cycle Assessment

*“Within the Floreat Activity Centre, new development is to achieve at least a **5 Star Green Star** rating under the Green Building Council of Australia rating system, or an equivalent rating system” (p.31) (highlight by author).*

That rating is far too low and should be at least 8 star. Currently it is 7 for residential so aim has to higher when time lag is taken into account. To achieve sustainable construction Life Cycle Assessment must be carried out. Then the environmental impact of the development can be assessed over its lifetime (Bizcocho & Llatas, 2019; Hannouf & Assefa, 2018; Rau & Oberhuber, 2020; Quéheille, et al., 2022; Zanghelini et al., 2018). Developers may see this as another impost, but for investors it will pay off because they will save money as time goes by (API, 2024).

5. Local Connectivity

“A key element of this Precinct Structure Plan is to achieve a Precinct that works for the whole community, offering services, opportunity and sustainable living for young and old.” (p. 72).

“Plans for multi-generational land use, including providing for aged-care and child care services within the Precinct.” (p. 72).

It is outside the scope of the FPSP but the idea to have Floreat Primary School remodelled in multi storey building and then on adjacent land construct a multi storey retirement village. The idea was to get synergy between the young and old. The plans were worked on by architect Ian Wilkes and others before the Global Financial Crisis.

6. Transportation

The Town of Cambridge could get more people walking to the Forum independent of the FPSP when it starts constructing the proposed footpaths (and cycleways) as indicated in Figure 7. With sustainability as an aim the use of poured concrete footpaths needs to be rethought. The slab size (600 x 600) used in WA maybe too large but for example in the Netherlands they use 250 x 250 size slabs which seems to work well to get even paths.

In the report on page 54 figure 8 on the west side reports 5 entry point only 2 entry points that includes the carpark entry should be used, the other 3 are incorrect.

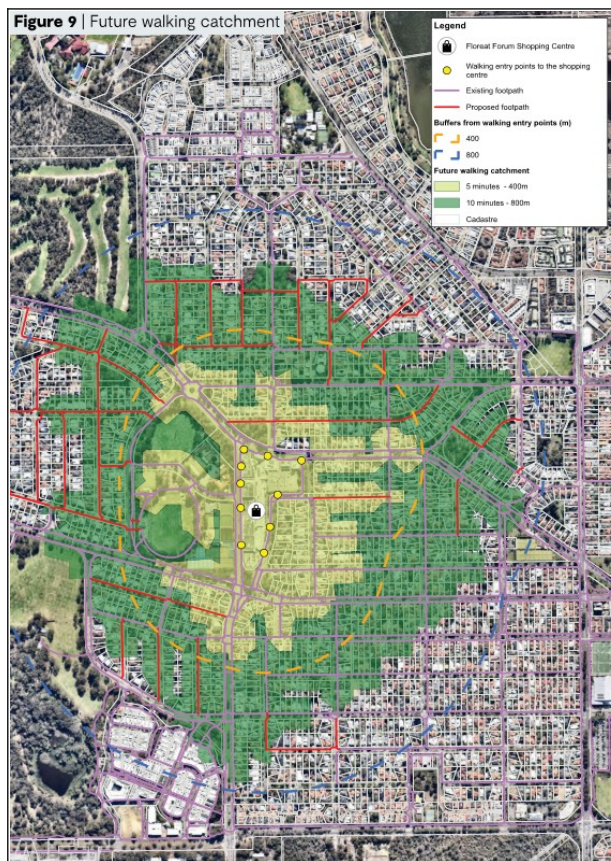


Figure 7. The FPSP's proposed footpaths.

"The Precinct is surrounded by relatively lower order roads (the Boulevard, Oceanic Drive and Howtree Place) that already carry high volumes" (p. 55).

This statement appears to be contradictory with Main Roads WA's road hierarchy. They are all marked as *Distributor A*, the second highest category. What is known about the traffic on these three roads, are they used by locals or by commuters from elsewhere?

"Both existing signalised intersections (Oceanic Drive/The Boulevard and Howtree Place/ The Boulevard) will require signal phasing optimisation, while The Boulevard/Floreat Avenue intersection will need to be signalised." (p. 55).

*"The Landscape and Public Realm Masterplan makes provision for a generous 2.5-3 m wide shared path on the western side of Howtree Place. This path will provide the secondary route called for in the LTCN and connect to key Howtree Place crossings. This path will enable regional cycling movements to connect with the Precinct." (p. 88).*PSP.

Report figures 28 and 29 shows no separated cycleways and trees in median strip (figure 8). Remove this median strip and use that space to create a separated cycleway. Shared paths, with the advent of electric scooters and bikes, have become

unsafe for the pedestrian (Guardian, 2024). It is important to move away from painted line delineation for a cycle way. In Belgium they call these just by painted line separated bike paths "Death Strips", that description is self-explanatory. The underlying thinking in both figures still vehicle oriented.

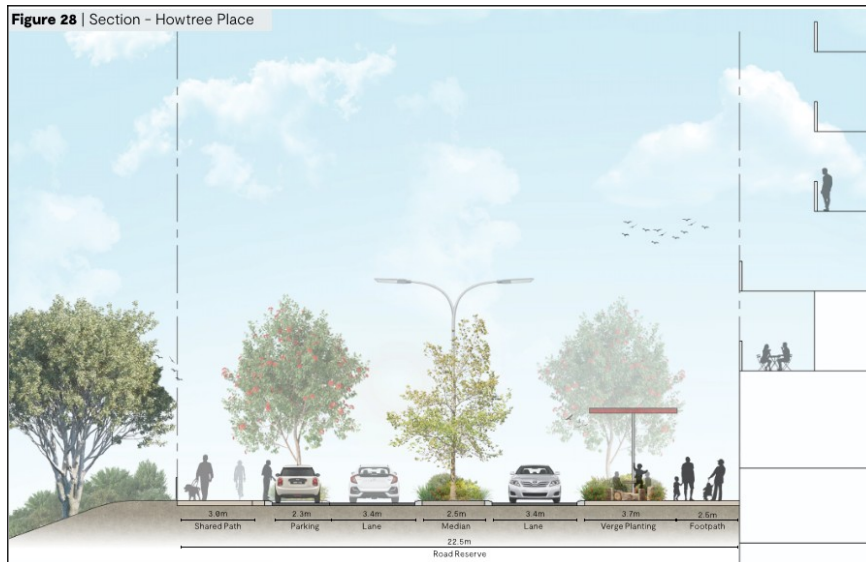


Figure 8. Road layout of figure 28 and 29 in favour of vehicular traffic.

“Under this development scenario anticipated by this Precinct Structure Plan, the surrounding road network becomes more congested, but otherwise functional with a series of varied interventions. These interventions are summarised as follows: – Floreat Avenue/The Boulevard intersection to be signalised. – The existing signals at The Boulevard/Howtree Place to be optimised and coordinated with the proposed signals at The Boulevard/Floreat Avenue. – Howtree Place/Chandler Avenue (West) to be signalised with a pedestrian crossing on the north side. – The existing signals at Oceanic Drive/Howtree Place to be optimised.” (p.89).

Is that optimised for vehicular traffic or to promote walking / cycling? The standard times for vehicular green traffic lights should be reduced by 1 sec each year to encourage drivers to leave their car at home and use public transport or walk/cycle instead.

Also, priority lights (loops in cycleways) for cycleways (Figure 9). And similar for pedestrian crossings. Give bus drivers the ability to prioritise green for their movements at traffic lights.

The report talks about making it easier to walk and cycle but when it comes to traffic management it is vehicle focussed which is a problem for the sustainable future.



Figure 9. Loop in cycleway priority activated cycling green light. Time counter how long still on red. Nijmegen, Netherlands.

“Installation of a pedestrian crossing of Howtree Place at the new set of traffic signals to be installed at the junction with Chandler Avenue (West).” (p. 88).

With the sinking of Howetree there is no need for traffic lights at that location.

“There are approximately 900 off-street parking bays provided within the Precinct across the three main parking areas of the north car park,” (p. 56)

Need multiple underground levels of parking, the amount of street parking should be kept to a minimum. A good example of developing multilevel underground parking in a sustainable building within budget is the City Hall in Venlo, Netherlands (Boogaerd, 2023; Kraaijvanger, 2023).

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