RESPONSE TO CUPAR NORTH STRATEGIC DEVELOPMENT AREA PLANNING APPLICATION 15/04279/EIA



Indicative Masterplan from Applicant's Design and Access Statement September 2021

FEBRUARY 2022

Part of a community response. The whole, or any part, of this document can be used by community groups, or individual members of the community, as they want.

This version has been through the approval process of Sustainable Cupar.

Responses can be sent to <u>development.central@fife.gov.uk</u> quoting the application reference number above in the subject line. The deadline for this is 13 March 2022.

1.0 EXECUTIVE SUMMARY

(Document's refs in bold)

1.1 The law³ requires that Fife Council act in the way best calculated to contribute to the delivery of our commitment to net zero climate emissions by 2045. The planning system in Scotland agrees with this.

1.2 In order to be consistent with planning policy, and the law, underlying frameworks of the Masterplan need to be fundamentally revised. These necessary revisions relate to a green network concept, a heat network concept, and a street network concept, and *Scottish Planning Policy*⁴ is clear that planning permission should not be granted until this has been done. **Para 6.1.7, SPP para 287**

1.3 The green network is required by the planning system to do the heavy lifting, including the task of flood resilience, which has become much more important in an era of climate change. The flood resilience design needs to be demonstrably robust. At the same time, the green network plan also has to show it is really a core component of the masterplan, with a coherent and cohesive implementation of connectivity and multi-functionality. This should be consistent with *TAYplan*¹ Policy 8 and *FIFEplan*² supplementary guidance^{5,16}. The apparent conflict between the key east-west cycleway and a SUDS basin is just one simple example which shows that this has not yet been done.

Para 4.1.9, 4.1.18 & 4.1.19

1.4 SEPA's planning guidance⁶ is that the onus is on the developer to demonstrate that a heat network is not feasible. The developer's Energy Statement is clearly not an adequate document in this regard. A Design and Access Statement which demonstrates how the findings of the Energy Statement have been incorporated into the design and layout of the proposed development should be provided. No serious attempt to do this work appears to have been done. **Para 5.1.2, 5.1.18 & 5.1.19**

1.5 The street network also needs to be revised. The Scottish Government definition that "all thoroughfares within urban settings and rural boundaries should normally be treated as streets" pertains here. A street network is not just about the roads for motor vehicles.

1.6 The publication of the new *Cycling by Design*⁸ is a radical change in Scottish Government planning guidance, bringing it into line with the science and evidence. The existing masterplan has not been designed in line with *Cycling by Design*, and it now needs to be updated. A better, more thoughtful integration with the existing town is required. **Para 6.1.5 to 6.1.7**

1.7 Such a redesign would also allow for better integration with the green network and heat network. In relation to building energy, it would allow for streets and homes to be better oriented towards a south aspect (within 15 degrees of south facing, and not any unnecessary deviation from this)⁹.

1.8 It is important for this redesign to be undertaken by the developer, and Fife Council, in consultation with the community. There are a number of other issues that can be revisited at the same time.

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2.0 INTRODUCTION

2.1 There are general arguments against the Cupar North development, and these are reasonable if it is built to the prevailing quality we have come to expect from new housing development. This document concentrates on what could make Cupar North a quality development, consistent with planning policy.

2.2 The Executive Summary contains key reasons, consistent with planning policy, why the currently presented masterplan should not be granted planning permission. Each of these can be followed up in the main document. The main document also contains a number of other important areas where significant improvements could, and should, be made.

2.3 The Cupar North Strategic Development Area is contained in *TAYplan*¹, the Strategic Development Plan, and *FIFEplan*², the Local Development Plan. These comprise the Development Plan covering the Cupar area. Planning law requires that decisions are taken in accordance with the development plan unless material considerations indicate otherwise (material considerations covers a wide range of things, but obviously other planning policy).

2.4 Fife Council also has legal obligations from Part 4 of the Climate Change (Scotland) Act 2009³. The principal policies of the Scottish planning system, Sustainability and creating better places (Placemaking), given in *Scottish Planning Policy*⁴, are anyway entirely consistent with this law, and there should be no question that this law has to be complied with.

3.0 WIDER CONTEXT Low Carbon Living, Decarbonisation of Heat and Transportation.

3.1 "There is a global climate emergency. The evidence is irrefutable. The science is clear. And people have been clear: they expect action." These are the official words of the Scottish Government¹⁰.

3.2 Our emissions targets are a legal requirement, and Scottish Law requires that Fife Council must, in exercising its functions, act in the way best calculated to contribute to the delivery of the targets³. There is no exclusion clause there for the planning service.

3.3 Nor should there be any conflict with planning policy anyway. *Scotland's Third National Planning Framework (NPF3)*¹¹, the statutory Scottish planning policy document, that has been approved by the Scottish Parliament, says, "We must ensure that development facilitates adaptation to climate change, reduces resource consumption and lowers greenhouse gas emissions", and very pertinently that, "Planning of rural towns and their surrounding areas must support low carbon living, decarbonisation of heat and transportation" (paragraphs 2.7 & 3.26).

3.4 Contrast that, for instance, with it on housing saying only, "In the coming years, we want to see a significant increase in house building to ensure housing requirements are met across the country" (paragraph 2.5).

3.5 "Want" and "must" are very significantly different words. The developer may want to progress the Cupar North development, and indeed so may Fife Council because it is their Strategic Development Area; nevertheless, it must only proceed if it is part of the solution to the climate emergency, and not if it is simply adding to the crisis. That is what the law and planning policy both say. There is no such legal or planning requirement to approve this development and these particular houses.

3.6 There should again be no conflict with the developer on this. Persimmon's Group Chief Executive, in their own Sustainability Report¹², is quoted as stating, "we are adopting science based carbon reduction targets in line with the Paris Agreement's 1.5°C warming pledge"!

3.7 It is disappointing then that the current application and masterplan are deficient in a number of what should be key strategic areas - that the Scottish Government has made clear in planning policy are key strategic areas. We can call these the three networks: the green network, a heat network, and the street network.

4.0 LOW CARBON LIVING (AND SUSTAINABLE LIVING GENERALLY)

4.1 Green networks



Figure 1. Part of a green network in a housing development. The swale seen there has the capacity to safely channel large volumes of flood water. The cars parked at the end of the cul-de-sac on the right give an indication of the scale. If this was a grid street network type of development, then there would be a tarmac road there with limited capacity to absorb water.

4.1.1 Green Networks still seem to be too much of a Cinderella issue. Whereas, in actual fact they are required to do significant heavy lifting by the Development Plan, and are the subject of a specific TAYplan¹ Policy. A recent change in Scottish Government guidance⁸ indicates the masterplan's approach to the issue should undergo very significant revision.

4.1.2 It is worth quoting in full a couple of paragraphs from the report of *Transport for New Homes*¹³, referred to in the transportation section below, and the visits they did to new housing developments.

4.1.3 "We looked around new housing areas on foot. The places we saw ranged from new homes for the very affluent to those for ordinary people who could not afford the high prices in more traditional and sought after suburban areas. In terms of recently built estates what struck us immediately was how barren many streets were in terms of greenery, particularly in developments targeted at average buyers rather than those that could pay very much over the odds. In many places the homes in the residential parts of the development area were so closely packed together that it was hard to see where trees, hedges and green areas could be planted. The walking environment as a consequence, was depressing."

4.1.4 "Whilst residential streets were practically devoid of greenery the sheer amount of area given over to road access, driveways and parking was astonishing. With very few hedges, the dominance of brick walls and tarmac only added to the boxed-in feel to the public realm. The newer estates we visited seemed the worst on this count. Areas of affordable homes seem particularly badly hit. The homes looked small and closely packed and sometimes surrounded on all sides by parking. It is true that some parts of estates were left as open space – areas that flooded or couldn't be built on for other reasons. However, informal green areas in some parts of the development did not make up for the dreariness and impersonal nature of many of the residential streets that we saw. We did not feel encouraged to walk and certainly we saw very few people about on foot."

4.1.5 Sustainability and Placemaking are the principal policies of the Scottish planning system. *Creating Places*¹⁴ is the Scottish Government's policy statement on architecture and place for Scotland.

4.1.6 It notes what *Equally Well*¹⁵, the report of The Scottish Government Ministerial Task Force on Health Inequalities says about green space:

"Children who have better access to safe, green and open places are more likely to be physically active and less likely to be overweight than those living in neighbourhoods with reduced access to such facilities. Access to green space is also associated with greater life expectancy in older people."

4.1.7 Our relatively recent experience of pandemic lockdowns gave us a better appreciation of the importance of green space for people's physical and mental health, and how both of these can affect each other. As the above quote indicates, this is something the planning system was already aware of. This is not a fringe issue, it is at the heart of placemaking and sustainability.

4.1.8 The *Green Networks in Fife Report*¹⁶, prepared by Fife Council and Scottish Natural Heritage, is Appendix H of the *Making Fife's Places*¹⁷ supplementary guidance to *FIFEplan*². It gives the priorities for green network planning in Fife. These 5 priorities (and their noted functions) are: 1 connecting people and places (access and active travel); 2 alleviating drainage and flooding problems (climate change); 3 providing useable green space for communities (greenspace); 4 providing landscape setting and improving the quality of places (landscape setting); and 5 providing connected habitats for wildlife (habitat and biodiversity).

4.1.9 Green networks are being asked to provide core elements of placemaking and sustainability. For instance, dealing with surface water is more important than ever with the increasing intensity of rainfall expected with climate change. *TAYplan*¹ Policy 8 is explicit that, "the provision of networks of green infrastructure is a core component of any relevant design framework, development brief or masterplan."

4.1.10 *Creating Places* also quoted from *Green Infrastructure: Design and Placemaking*¹⁸ (the Scottish Government report on design and placemaking in the green infrastructure): "Green infrastructure should be thought about at every scale of planning, from the strategic framework right down through neighbourhoods and within streets to the individual house or flat."

4.1.11 Green space should not just be the 'negative space' where other things do not fit.

4.1.12 While the current Cupar North masterplan may not appear quite as deficient as the other new developments described above, neither is it convincing when held up against that essential nature of green networks that planning policy is seeking. The developer's Design and Access Statement does say many of the right words, but a green network is not seemingly at the design heart of the development.

4.1.13 This is notable from a number of things. There is not a cohesiveness, with multiple functions of a green network atomised, each just its own tick box. For instance a number of the SUDS basins appear to get in the way, unnecessarily, of a proper line for the east-west cycleway, and the SUDS seems focused on such end of pipe solutions, with little attention given to the more widespread use of green infrastructure for water management that policy calls for, and the multifunctional benefits this can provide.

4.1.14 It is however where the green network comes up against the street network that there may be a crux issue. This is not entirely the fault of the developer, and it may be necessary to go on a bit of a diversion here, before we come back to its relevance to green networks.

4.1.15 It is notable in the developer's Design and Access Statement that we have visualisations of the primary street, secondary street, shared surface street and lanes, but it struggles to visualise the active travel network through the green network. Active travel does not appear to be valued in a similar way. *PAN 67, housing quality*¹⁹, nearly two decades ago, lamented, "Inadequate attention is given to separate and attractive pedestrian routes and links."

4.1.16 It may have escaped most people's attention, but it is important to note the planning system was promoting something called New Urbanism²⁰, imported from the USA, for a significant part of the in-between period. It may not be explicitly stated there, but this is the philosophy the Scottish Government's *Designing Streets*⁷ planning policy document is based on.

4.1.17 We should be careful to note the philosophy of New Urbanism was also about sustainability, and aimed for much the same as the 20 minute neighbourhood concept the Scottish planning system is now in the process of introducing²¹. It was the way it went about it that was problematic. That was founded on a misplaced nostalgia for the grid street network of small town America, and not on any good evidence base. The evidence has since come out strongly against a grid street network shared by all modes of transport. That the Scottish Government should have deployed such a strategy of grid street networks shared by all modes of transport was questionable even back in 2008. This quote is about the England and Wales *Manual for Streets*²² which *Designing Streets*⁷ is heavily based on: "Maximising permeability for cars, making it easier for them to drive in all directions, will encourage people to walk and cycle. How did such an obvious delusion come to be so widely accepted that its restatement in *Manual for Streets* passed almost unchallenged amongst the planning and transport professions?"²³

4.1.18 The direct relevance of this to green networks can be seen when it is put up against the very first part of *TAYplan*¹ Policy 8, Green Networks:

"A. Strategies, policies, plans and programmes shall protect and enhance green and blue networks by ensuring that: i development does not lead to the fragmentation of existing green networks".

4.1.19 You cannot lay a grid street network accessible to motor vehicles over a green network without fragmenting it.

4.1.20 What does this do for habitats, wildlife corridors, and biodiversity?

4.1.21 How can you have the "unculverted watercourses that can manage large volumes of water and also provide aesthetic benefits, recreational opportunities, and benefits for wildlife"¹⁸?

4.1.22 How can you have a properly connected active travel network, as part of a green network, when it can only fit in the gaps in a motor vehicle grid?

4.1.23 The recent publication of the new *Cycling by Design*⁸ has brought a radical change to this situation. Scottish Government planning policy has effectively now dropped this insistence on a permeable to all vehicle grid street network. It now supports what science and empirical evidence has for some time supported, the concept of "filtered permeability"²⁴, where motor vehicles are more constrained in the routes they can take.

4.1.24 There is no question that the Cupar North masterplan should now be required to go back to the drawing board, in order to provide, unencumbered, the qualities of a green network that planning policy demands.

4.1.25 There is a good available alternative model that provides for this, and members of the community have been advocating such an available model to Fife Council and the developers for the best part of a decade. Members of the community have also had a meeting with the senior Scottish Government officials responsible for *Designing Streets*. These officials were happy to see this model implemented here.

4.1.26 Village Homes, Davis, California, was completed 1982²⁵. We can also point to other highly successful developments with the same underlying radical design, including the original "a town for the motor age" which is still looking good at over 90²⁶. The origins of the concept can be traced back to the Garden City movement here in the UK. A copy and paste is not being suggested, since the other examples show there are significantly different ways it can be successfully implemented.

4.1.27 Village Homes exemplifies what the planning system is now asking for in relation to a truly connected and multi-functional green networks going right down to the level of the individual home. It interleaves 'greenways' with cul-de-sacs (which also have 'filtered permeability'), with the homes having direct access to both. It puts the green network right on everyone's doorstep. It merits very much more serious consideration than it has been given.

4.1.28 A study has compared the effects of three types of neighbourhood development on air, water, and urban forest quality. This involved extensive modelling of a traditional suburban development, a typical gridded, new urbanist development, and an open space oriented development modelled largely after Village Homes. The researchers found that the traditional and new urbanist developments had very similar environmental impacts, including amount of impervious surface, runoff, and energy use. The Village Homes style development was the only one that produced significant improvements in air, water, and forest quality²⁷.

4.1.29 Village Homes can be said to be one of the developments that started sustainable urban drainage systems. The use of the term "swale", in relation to that, originated with this development. It is still an exemplar of the natural drainage approach, and the flood resilience of that - a key issue in our changing climate.

4.1.30 It showed that orientation for passive solar design, with all the homes facing south, does not conflict with visual attractiveness or other design aims. It is a relevant point for the decarbonisation of heat section below, but also an issue that is raised in *Green Infrastructure: Design and Placemaking*¹⁸.

4.1.31 Village Homes majored on neighbourhood agriculture and the concept of "edible landscaping". In relation to Cupar North it has been suggested that the developer here might want to offer each home the choice of a fruit tree, and accommodate the rest in orchards within the landscaping.

4.1.32 Village Homes was actually cheaper to construct than comparable conventional developments, but the homes have the highest market value per square foot in Davis. We can commend that to the developer.

4.2 School access + environment

4.2.1 Another important quality, which designs similar to Village Homes have been able to demonstrate is the ability of a child living there to literally walk, wheel or cycle from their own front door to the door of their local school without having to cross a road. This is not something that should be dismissed lightly. One of the most significant reasons parents give for their children not walking, wheeling or cycling to school is road safety. This can have life long effects. Car use in the 'school run' can be another significant negative issue in itself.

4.2.2 Having both this school access - and the school itself - embedded in a more natural green network can be a positive thing itself, with benefits for health and wellbeing, and education itself^{28,29}.

4.2.3 A slightly different example of this is the pioneering Secret Garden Outdoor Nursery here in Fife³⁰.

4.3 Rain harvesting

4.3.1 Rain harvesting is another thing that is not given the consideration it should have.

4.3.2 Providing clean water to homes and other buildings actually requires significant amounts of energy, and more than a quarter of this is then just flushed down a toilet.

4.3.3 Not collecting surface water when we could, and it has other benefits, means this water just adds to the general problem of surface water drainage and flood prevention.

4.3.4 Both of these issues have much more significance and impact now because of climate change, and these impacts are only going to increase.

4.3.5 Green roofs may be another form of solution here, but they do not for instance provide the alternative water for flushing toilets. The extra structure required to support them has its own embodied energy, and it may be that solar PV is a better use of roofspace.

4.3.6 High quality equipment for rain harvesting is readily available^{31,32}. Like many things, it is more cost effective when integrated at the time development is designed and built, not retro-fitted.

4.4 Maintenance

4.4.1 There are clear examples where the lack of 'ownership' of the green spaces that are part of residential developments has become a problem for residents. They have been forced to pay for something, but have no say over what happens with it³³.

4.4.2 *PAN 65, Planning and Open Space*³⁴, says that, "Maintenance issues must be considered during assessment of development proposals"

4.4.3 It also notes, "Empowering communities to get involved in the design, management and ongoing maintenance of open spaces can help the community to take pride in the ownership of spaces, and reduce vandalism of facilities and anti-social behaviour. Organisations established to promote community capacity building might use open space provision or enhancement as the vehicle to achieve it."

4.4.4 Of the options it sets out for the long-term maintenance of new open spaces, those of setting up a residents association and/or facilitating the community to arrange management themselves, with support or appropriate funding from the local authority, would appear to be those that should be done for Cupar North. A Co-operative ownership model would also seem relevant.

4.5 Planting

4.5.1 Advance planting needs to be considered.

4.5.2 Native species should be what is primarily planted, and that which supports local biodiversity of fauna as well as flora, rather than just that which looks good.

4.5.3 Consideration should be given to the concept of 'edible landscaping', and the contribution this can make to health and well-being, and community. The developer here might want to offer each home the choice of a fruit tree, and accommodate the rest in orchards within the landscaping.

4.5.4 As *PAN 65, Planning and Open Space*³⁴ notes, it would be good to involve the community in design.

Sustainable living, Housing

4.6 Flexible space

4.6.1 Back in 2003, *PAN 67, housing quality*¹⁹, (still the extant Scottish Government advice on housing quality) said people may want a home that will prove adaptable as their household and other circumstances change. Presciently, "people increasingly want to have the option of working from home".

4.6.2 In 2015 the Federation of Small Business in Scotland issued a report³⁵, one of the authors being from the University of St Andrews. This noted Scottish Government estimates that 56% of businesses in Scotland are home based, and noted the trend for this was upwards. The first recommendation of the report was, "The vast majority of home-based businesses are serious commercial ventures, a significant proportion report increasing turnover and many sell across the UK and internationally. So, policy-makers must take home-based businesses seriously."

4.6.3 Enabling people to "age in place" is another concern. The Lifetime Homes Standard was initially developed by the Joseph Rowntree Foundation in 1991, intended to make homes more easily adaptable for lifetime use at minimal cost³⁶.

4.6.4 The ability to accommodate a guest, live-in carer or a relative requiring care may also be a consideration.

4.6.5 Size can be a constraint on any flexibility. This was an issue that gained more attention due to pandemic lockdowns.

4.6.6 It is of some significance that research finds the UK has some of the smallest homes and room sizes in Europe³⁸. For new build homes both were actually the smallest of all the 15 nations compared.

4.6.7 In relation to new development it is seriously concerning that whereas for the majority of the nations studied new builds are larger than the average for all homes, here we are making our already smaller homes even smaller. At the opposite end of the table, new build rooms in Denmark are two and half times the size of those here.

Affordable housing

4.7 Self build

4.7.1 Self build is not just 'Grand Designs'. It is a much more significant contribution to general housebuilding numbers in many other countries. It is recognised as a form of affordable housing, with considerable savings on conventional build available with access to the appropriate finance. It's also simply something many people want to do.

4.7.2 In relation to design, the quality of many self build homes can exert a beneficial upward pressure on the quality of standard build that may be presented next to it, and may be compared with it.

4.7.3 Following the *Planning (Scotland) Act 2019* planning authorities are now required to prepare and maintain a list of persons interested in acquiring land in the authority's area for self-build³⁸. It does not go as far as English 'right to build' legislation to require authorities to permission sufficient plots to reflect this demand, but the Scottish Government's *Housing to 2040*³⁹, published March 2021, states: "We will scale up opportunities for self-provided housing so people have more choices about the kinds of home they want to live in."

4.7.4 Given the scale of the Cupar North Strategic Development Area it would be expected a significant supply of self-build plots would be made available from this.

4.8 Cohousing

4.8.1 There is an active interest in cohousing within the Cupar community. Serious consideration should be given to the accommodation of that desire within the Cupar North Strategic Development Area.

4.8.2 The Scottish Government's Housing to 204039 says:

"Alternative models, such as co-housing, communal spaces in new developments, more opportunities for self-provided housing and a tenure-neutral approach to adaptations would be beneficial."

4.8.3 The UK Cohousing Network provides the following information on their website⁴⁰:

4.8.4 Cohousing communities are intentional communities, created and run by their residents. Each household has a self-contained, private home as well as shared community space. Residents come together to manage their community, share activities, and regularly eat together.

4.8.5 Cohousing is a way of resolving the isolation many people experience today, recreating the neighbourly support of the past. This can happen anywhere, in your street or starting a new community using empty homes or building new.

4.8.6 Cohousing communities can be inter-generational, welcoming anyone of any age and any family structure, or specifically to cater for people who are older or are communities of common interest, for example for women or LGBT groups.

4.8.7 Cohousing communities are inclusive and part of the wider community. Cohousing communities actively encourage open membership. Cohousing groups often host wider community activities in the shared space and common house.

4.9 Tenure blindness / 'pepper-potting'

4.9.1 *PAN 2/2010, Affordable Housing and Housing Land Audits*⁴¹, advises, "Affordable housing ought to be, as far as possible, indistinguishable from the general mix of other houses on a site in terms of style and layout, use of materials, architectural quality and detail."

4.9.2 This is a concept known as 'tenure blindness'. It has been said that the most valuable guiding design principle for mixing market and subsidised housing is tenure blindness. The better this is done, the better the social results. This is about minimising any stigma attached to subsidised housing, and minimising any impacts on market value such stigma may cause.

4.9.3 Unit-by-unit integration, also called pepper-potting, is thought to ensure tenure blindness, since homes serving different tenures are, for all purposes, indistinguishable. Studies report that the greatest integration between tenures is achieved when tenures are dispersed evenly throughout the development.

4.9.4 PAN 2/2010 did not appear convinced of the merits of pepper-potting, but this was written, for instance, before the Chartered Institute of Housing September 2012 report⁴², and the NHBC Foundation September 2015 report⁴³.

4.9.5 There would seem to remain two main reasons against the general use of pepperpotting. There is a feeling that developers have not been keen on uniform dispersion of social housing properties throughout a development, and that they preferred to place them in more remote and less attractive parts of a site. Clearly this goes directly against a concept of tenure blindness.

4.9.6 The primary remaining reason for not pepper-potting, highlighted in studies, is that it can make tenant management, and services, more fragmented and less efficient.

4.9.7 However, with the multiplicity of tenure arrangements there is now within affordable housing, the growth too of the private rented sector (PRS), and that socially required services are not limited to a particular tenure, the convenience of a particular landlord is no longer justifiably prioritised ahead of a wider social benefit.

4.9.8 That having been said, researchers have pointed to a focus on place-making and maximising the quality of the design and layout as being even more necessary.

4.9.9 For instance, "the inclusion of quality parks and open spaces promoted social interaction and contributed to it being a good place to raise families."

4.9.10 A particular issue in relation to infrastructure delays was noted and may be relevant to the Cupar North Strategic Development Area:

4.9.11 "Due to the uncertainty of funding, and associated difficulties around the phasing of complex regeneration and development schemes, it was found that there was often a considerable time lag between people moving in and the provision of community facilities. Developers tended to concentrate initially on the residential accommodation with the infrastructure design elements often left until the end of the process. This was seen to be counter-intuitive in assisting early social interaction between residents, as the first few months in a home is usually the time when new friendships are formed. Researchers concluded that, where possible, the communal facilities and external spaces should come on stream at the same time as the housing; where this was not possible, on larger developments particularly, a role was identified for local authorities to boost the success of a project by accessing a range of resources to bring the public realm elements forward."

4.9.12 It should also be noted, "Primary schools with local catchment areas were found to be by far the most important off-site spaces where children and parents met through school-based child networks and formed friendships regardless of tenure."



5.0 DECARBONISATION OF HEAT (AND ELECTRICITY)

Figure 2. Screenshot from the Scottish Government Scotland Heat Map Interactive website. This shows the presence of a "Water Source Heat Pump (Large (1MW+)), Potential" at the Scottish Water waste water treatment plant on the trading estate. There is planning permission for a district heating energy centre, and borehole thermal energy store (BTES), on land immediately adjacent to this.

5.1 A heat network

5.1.1 The Scottish Government had a renewable heat target for 2020 of the equivalent of 11% of fuels (other than electricity) consumed for heat. This is included in paragraph 154 of *Scottish Planning Policy*⁴:

"The planning system should: support the transformational change to a low carbon economy, consistent with national objectives and targets, including deriving: - 11% of heat demand from renewable sources by 2020"

5.1.2 Scottish Planning Policy paragraph 155 went on to say, "Development plans should seek to ensure an area's full potential for electricity and heat from renewable sources is achieved, in line with national climate change targets" (repeated in *FIFEplan* Policy 1²), and paragraph 159 that, "Local development plans should support the development of heat networks in as many locations as possible".

5.1.3 Note the clear use of the word "possible" there. It is not used there to reduce the emphasis of a request, such as "where possible" or "as far as possible". We are literally asked for as many as possible.

5.1.4 The Scottish Government reported in October 2021 on the progress toward meeting that 11% renewable heat target by 2020⁴⁴.

5.1.5 The figure achieved was 6.4%.

5.1.6 Unfortunately, the bar of our climate targets is now even higher. What was to be achieved by 2050 now must be achieved in 2034. At the reported rate of progress for our renewable heat target we would only achieve its old 2020 target by 2034!

5.1.7 Climate change is an existential threat. The unavoidable conclusion is that wrong decisions are being taken.

5.1.8 The quality of the Energy Statement provided with the application should simply not be acceptable for this level of application. It is really incredible that any professional involved in this application should think it acceptable.

5.1.9 There is not even agreement between the Energy Statement and the Design and Access Statement. Which are we supposed to take as what the application is saying? It says individual gas boilers in one and individual air source heat pumps in the other.

5.1.10 In reality it is not relevant, since this is not a choice that is presented for the planning authority and committee.

5.1.11 The developer would decide between individual gas boilers and individual air source heat pumps up until, and beyond, the Scottish Government's proposed 2024 date when a building warrant that was applied for after that date would require new buildings to use zero emissions heating.

5.1.12 It has to be noted we were promised zero carbon homes by 2016, and the related EU Directive for nearly zero energy buildings (NZEB) is also part of current Scottish building regulations⁴⁵, but appears to have been rendered meaningless.

5.1.13 If the planning authority wants to assure itself it is acting in the way best calculated to contribute to the delivery of the climate targets, and a way that it considers most sustainable (to comply with the law in other words³), then the need for a choice of either form of individual system would have to be removed by the planning system.

5.1.14 This should not be as difficult as it appears to be being made out to be.

5.1.15 *TAYplan*¹ Map 7a, Strategic Energy Opportunities, specifically identifies Cupar for potential heat networks.

5.1.16 *TAYplan* Policy 2, Shaping Better Places, states that masterplans and development proposals should ensure that high resource efficiency is incorporated within development through the connection to heat networks or designing-in of heat network capability.

5.1.17 FIFEplan² has transposed SPP⁴ paragraph 159 into FIFEplan Policy 11.

5.1.18 The *Low Carbon Fife* supplementary guidance⁴⁶ makes explicit in the District Heating Process map, a flowchart, stating that the Planning Authority can require development to connect to an existing network, or create an independent heat network capable of connecting to a wider network to serve the development.

5.1.19 The relevant SEPA recommendation⁶ here is, "The development must enable connection to a heat network or heat producer, unless it can be demonstrated to the Planning Authority that this would not be feasible." This is part of SEPA's own obligations under Part 4 of the Climate Change (Scotland) Act 2009³.

5.1.20 Whether the connection is made at the time of development, or is to be done in future, it is also asked to be demonstrated how this has been incorporated into the design and layout of the proposed development.

5.1.21 Is there an available source of heat nearby?

5.1.22 Waste water treatment plants (WWTP) are a recognised heat source for district heating. The Scottish Government's *Scotland Heat Map*⁴⁷ identifies the Scottish Water waste water treatment plant in Cupar as a large, 1MW+, source. Analysis funded by the Scottish Government's Low Carbon Infrastructure Transition Programme (LCITP) concluded this was sufficient for the whole Cupar North Strategic Development Area.

5.1.23 The developers have been aware of this opportunity for over 7 years. If they had engaged with this work, as requested by the Scottish Government, then they could have had business case work funded and completed on this long before now. This is information SEPA and Fife Council guidance say should be part of the energy statement.

5.1.24 For the next point it is worth noting there is actually a Memorandum of Understanding between the governments of Denmark and Scotland⁴⁸ in the area of green transition of the energy system, promoting knowledge sharing, which has a focus on heating networks/district heating. It is worth noting district heating supplies 64% of all Danish homes. These are the people we are supposed to be learning from.

5.1.25 A Danish industry association conducted an analysis in 2018 of the cost competitiveness of newly established district heating and individual heating⁴⁹: "The competitiveness between individual heating and district heating is very relevant to examine regarding newly established district heating systems outside of Denmark and because of this, the results from this analysis are relevant concerning an export perspective."

5.1.26 The relevant result of the analysis was that even for a suburban scale of heat network, district heating was clearly considerably more cost competitive than individual air source heat pumps. Really the only sort of counterfactual we should be considering. (For the record, with the data used in the analysis, district heating was also competitive with individual gas boilers.)

5.1.27 In reality, it is perhaps shareholders of Persimmon that should be asking serious questions here.

5.2 Building orientation

5.2.1 Both *Scottish Planning Policy*⁴ paragraph 155 and *FIFEplan*² Policy 1 suggest the aim for development to achieve an area's full potential for electricity and heat from renewable sources. The draft *NPF4*²¹ deletes the latter part of the sentence that provides for any equivocation.

5.2.2 "Local development plans should seek to ensure that an area's full potential for electricity and heat from renewable sources is achieved."

5.2.3 This is probably one of the most underachieved parts of the Development Plan.

5.2.4 It is of the utmost pertinence for a development such as this to discuss the orientation of buildings, which obviously follows to a very significant extent from the design of the street network. It is actually worth repeating here a couple of good points the developer does make in its Design and Access Statement.

5.2.5 "Given that the majority of the occupies a south facing slope, the natural ability for the masterplan to take advantage of solar gain is clear."

5.2.6 "Good passive design is critical to achieving a lifetime of thermal comfort, low energy bills and low greenhouse gas emissions."

5.2.7 *TAYplan*¹ Policy 2 is that masterplans and development proposals should ensure that high resource efficiency is incorporated within development through the orientation and design of buildings and the choice of materials to support passive standards.

5.2.8 The role of solar PV gain also now requires very much more prominent consideration - PV can now generate electricity at below grid prices, and electrification of heat and transportation will require much more generation capacity. Roofspace is a resource that needs to be made better use of. Fortunately, the importance of correct orientation for this to operate efficiently seems reasonably well-understood.

5.2.9 Unfortunately, there seems nothing liked the required level of understanding of passive solar design, either by developers or many planning professionals.

5.2.10 As building fabric performance has improved the balance has shifted decisively in favour of orientation in relation to the sun rather than winds for indoor thermal comfort. The basics of passive solar design also become critically important.

5.2.11 The Scottish Government noted in its consultation on proposed changes to energy standards within Scottish building regulations⁵⁰, "Within the Climate Change Committees (CCC) report 'UK Housing: Fit for the future' reference is made to there being around 40 heat related deaths per year in Scotland which is projected to potentially rise to between 70 - 280 deaths."

5.2.12 The Scottish Government noted, "Whilst overheating risk may generally be considered an issue principally for southern regions of the UK, previous research carried out by the Mackintosh Environmental Architecture Research Unit, Glasgow School of Art et al assessed 26 new homes in 2013 and found overheating instances in over half of the homes (based on the Passivhaus approach to determining overheating criteria)."

5.2.13 This is an area of building energy performance where decisions made in planning can have much more effect, particularly a detrimental one, than building regulations.

5.2.14 The solar gain that we might want at certain times of the year and day is not the difficult thing to achieve, it is the ability to have that while also being able to keep out solar gain at other times of year and day, when it would be bad. That requires much more careful attention to design.

5.2.15 Unfortunately, passive design can only really achieve both those goals if the orientation is very close to South facing. An accepted design standard is for the appropriate face of the building to face within 15 degrees of South⁹.

5.2.16 When you start with a green field, clean sheet situation, and no significant constraint provided by existing block structure at the edge of the development, what is the excuse for the masterplan not having all blocks well within a 15 degrees orientation?

5.2.17 What material consideration is seen to overwhelm achieving a lifetime of thermal comfort, low energy bills for residents, and our legal climate obligations? This issue has not been treated sufficiently seriously in the masterplan.

5.3 PV

5.3.1 Paying attention to the orientation of the blocks and buildings will do much of the work for PV. This correlates directly to the efficiency, and so directly to the economic viability on any installation. But, simplicity of roof design is also an important factor for the viability of PV installation, and should be part of a planning consideration. (This is also likely to improve the thermal performance of insulation.)

5.3.2 There is also an issue with building regulations that attention needs to be brought to. The Scottish Government also noted this in its consultation on proposed changes to energy standards within Scottish building regulations⁵⁰:

5.3.3 "Analysis of Energy Performance Certificate (EPC) Data for 2016-2020 dwelling completions, with an increasing number of homes built to the 2015 standards, indicate only a slight improvement in the average U-value for walls. This data indicates that new homes are commonly built to closer to backstop values for fabric than to those values within the notional building specification. It is common to augment a lower fabric specification with increased use of on-site renewables, such as photovoltaic panels (the amount of PV installed has more than tripled in the same period). It is noted that such an approach may not offer the same assurance of benefit in reducing energy demand and the energy delivered to the building as the generated energy is not always used within the building."

5.3.4 To put it more simply, as others had already noted⁵¹, PV was being used by house builders to game the system purely for their own economic benefit. For the whole of society, the way house builders have been using PV has actually been getting us further away from our climate change targets than if the PV had not been used!

5.3.5 What is worse, the way planning authorities such as Fife Council have written their planning guidance, this bad practice by house builders is also sufficient to tick a box as if planning was making a positive contribution towards its obligations in relation to climate change. We've been double counting something that isn't even doing the job.

5.3.6 It is difficult to say this has met the legal requirement under Section 3F of the Town and Country Planning (Scotland) Act 1997⁵², "requiring all developments in the local development plan area to be designed so as to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions.....through the installation and operation of low and zero-carbon generating technologies", when it has not.

5.3.7 How does planning dig us out of this hole that has been created? The way to do that is actually to scale up the use of PV significantly beyond what just ticks the box for house builders' own narrow economic self interests. Perhaps the question should be, are we serious about seeking to ensure that an area's full potential for electricity and heat from renewable sources is achieved?

5.3.8 The *FIFEplan*² Development Requirements for the Cupar North Strategic Development Area (CUP001) actually includes, "Safeguarding of land for potential heat generation including district heat networks or photovoltaic provision."

5.3.9 Electrification of heat and transportation, with the use of electric vehicles and heat pumps (used either in a district heating energy centre or in individual homes), means it can now be reasonably easy to quantify the direct energy demands of a home in units of electricity.

5.3.10 If the homes were making a fair contribution, and not simply adding to society's problems, this would require a rooftop array of about 10kWp of PV. Persimmon only proposes about 1kWp of PV per home.

5.3.11 We probably should be looking at covering every square metre of appropriately oriented roofspace, and even considering use of monopitch roof as a new vernacular (it was already an existing vernacular in this area for doocots).

5.3.12 This is more consistent with seeking to ensure that an area's full potential for electricity and heat from renewable sources is achieved.

5.3.13 Unfortunately, a solution is not as simple as that. Individual air source heat pumps for each home, and their peak electricity demands, can create the need for costly reinforcement of the electricity distribution network. Large deployments of PV can create similar issues. And, there is obviously not a good match between the summer supply of PV and the winter demand of air source heat pumps.

5.3.14 A significant advantage of heat networks is that they can use large scale thermal storage, which is significantly cheaper than electrical storage, and can even store the output of solar panels in summer to supply nearly 100% of the winter heat demand of homes^{53,54}.

5.3.15 The Development Plan policy in *TAYplan*¹ Policy 2 is that masterplans and development proposals should ensure that high resource efficiency is incorporated within development through the use of or designing in the capability for low/zero carbon heat and power generating technologies and storage to reduce carbon emissions and energy consumption, and the connection to heat networks or designing-in of heat network capability.

5.3.16 If we are really talking about acting in the way best calculated to contribute to the delivery of the climate targets, and a way we consider most sustainable, it should be photovoltaic provision *and* district heat networks.

5.4 "Passive house" / "Passivhaus"

5.4.1 "Passive house" and "Passivhaus" are often used interchangeably, but it is appropriate to draw a distinction between them. A straightforward reason here is that we can ask for elements of passive house design in the context of a planning application, but not for Passivhaus, because that is essentially within the building standards system, and not the planning system.

5.4.2 A passive house and passive solar are also often used interchangeably. Both are about using the 'free' heat from sunshine, the occupants of homes, and their domestic appliances, to warm homes. The largest contribution is frequently, by some margin, from the sun, and so it is indeed often passive solar that is mainly being referred to, and what we essentially refer to here.

5.4.3 Passivhaus is a particular technical standard, developed from research undertaken in Darmstadt, Germany. This specifies particular standards for the building envelope, and at its heart is designed to make use of an active system - mechanical ventilation with heat recovery (MVHR). The quality of the design is such that it can be extremely effective even without any solar gain. Local authorities in the UK have built homes to Passivhaus standards within existing social housing budgets.

5.4.4 (MVHR should itself be regarded as a good thing⁵⁵.)

5.4.5 We would certainly advocate that homes are built, and preferably certified, to the Passivhaus standard. We ask for that, but we cannot ask that it be required by the planning system. The failure to require this as part of building standards lies entirely with the Scottish Government, and seems to be a clear example of regulatory capture⁵⁶. It would clearly be in the interest of society, and of the occupants of the homes, to have higher energy efficiency standards in new homes. Lobbying against this by house builders seems to have had more effect.

5.4.6 We would however ask that the planning authority does not allow itself to again be taken in by developers' claims of a 'fabric first' approach, and that it does not assist the developer in promoting such 'greenwashing'. If the developer is not currently proposing designs that would meet Passivhaus standards then any claim to a 'fabric first' approach should be regarded as disingenuous, and should not be given any credit or promotion as contributing to our climate change targets. The evidence is very clear form the Energy Statement provided as part of the current application that it does not contribute to climate change targets.

5.4.7 The planning authority should require that basic passive solar design principles are followed by a developer, indeed this is what *TAYplan*¹ Policy 2 requires be done, and that is also backed up by *FIFEplan*² Policy 1. It is difficult to comprehend, and difficult to excuse, why this has not been done previously.

5.4.8 One reason would appear to be an insufficient understanding of what passive solar design requires in practice. The Cupar North developers suggestion, within their Energy Statement and Design and Access Statement that, "consideration should been given to provide full height glazing along the predominant elevations" certainly shows minimal understanding there. Overheating would be a significant concern with that.

5.4.9 If either the developers or planning authority require to bring in appropriate expertise to either develop or assess designs, then this is what should be done.

5.4.10 As has been indicated earlier, at the masterplan stage the key design element is to allow for buildings to be oriented as close to south facing as possible. The planning authority has not provided sufficient reasons in relation to other previous applications why this has not been done previously. It should be required here now.

6.0 DECARBONISATION OF TRANSPORTATION



6.1 Street network

Figure 3 (previous page). The town of Houten in the Netherlands is an exemplar of strategic use, on a town wide scale, of filtered permeability. Houten has a high modal share for cycling accessing the town centre even in comparison to other towns in the Netherlands. The original northern part of Houten is very comparable in size to Cupar plus Cupar North.

Picture credit: Jan-Willem van Aalst https://commons.wikimedia.org/wiki/File:Houten-plaats-OpenTopo.jpg

6.1.1 Residents have real concerns with how Cupar North will relate to the existing town of Cupar. The transport issue is a significant part of that. There are concerns that traffic congestion and air pollution could increase, but footfall for town centre businesses could decrease.

6.1.2 At the national level, the policy directive is a reduction in motor vehicle traffic⁵⁷. Transport is Scotland's largest single sector of climate emissions, and cars the biggest source within that⁵⁸.

6.1.3 At the international level, the World Health Organisation (WHO) has introduced new air quality guidelines for particulate pollution^{59,60}, which it is careful to point out should not be regarded as safe levels. This is science based. The damage these do to the health of all of us is being increasingly recognised. It may be difficult to meet these new targets with current levels of motor vehicle use - even with electrification of this.

6.1.4 The report Fife Council commissioned into the effects of the development of Cupar North on the air quality management area (AQMA) in Cupar⁶¹ finds particulate pollution would still exceed the current Scottish guidelines in the AQMA after Cupar North and the associated relief road is completed. It seems far from satisfactory that the transport design integrating Cupar North with the existing town does not include a solution of that.

6.1.5 The Scottish Government's new *Cycling by Design*⁸ represents a radical change, and was published after the supporting information for this application. This brings the Scottish Government position on the issue in to line with robust, peer reviewed, major journal published science⁶², and the empirical evidence from where cycling has successfully become a significant mode of transport⁶³. This has critical implications for the street design of new developments. We can already identify likely implications, and these suggest very significant differences with the masterplan submitted in the current application documents.

6.1.6 The developers need to completely reappraise the design of the masterplan, and submit revised designs and documentation.

6.1.7 Scottish Planning Policy⁴ is explicitly clear on this, stating in Paragraph 287 that, "Planning permission should not be granted for significant travel-generating uses at locations which would increase reliance on the car and where: the transport assessment does not identify satisfactory ways of meeting sustainable transport requirements." It does not. **6.1.8** Fife Council also needs to be involved with how the transport network of the development and the transport network of the existing town work and link together as a whole. This may require significant changes within the existing town. This should be considered before the application is determined. The Scottish Government Reporter, in the report of the examination of the proposed *FIFEplan*⁶⁴, specifically stated in relation to Cupar North, and why they did not see a justification for requiring the strategic development area to be set within a settlement development framework: "An important consideration in assessing the strategic proposals as they come forward through the masterplanning process, would be the impact that they have on the social and built fabric of the town."

6.1.9 Fife Council has already stated in its own *Local Transport Strategy 2006 - 2026*⁶⁵ the Key Target to, "Produce Transportation Master Plans for Strategic Development Areas identified in the finalised Fife Structure Plan." This work should already have been produced, but we have not seen it. It would also need to be revised in the light of the new *Cycling by Design.*

6.1.10 It is already worth noting that a design that may follow from this reappraisal has previously been suggested a number of times by Fife Council officers tasked with the sustainable transport role. This transport arrangement has been successfully used in the Netherlands, for instance in the town of Houten, and is currently proposed to be used in Birmingham in the UK⁶⁶. It is perhaps pertinent to enquire why this advice appears to have been disregarded in the planning process for the Cupar North Strategic Development Area?

6.1.11 It has long been in government planning policy that transport modes are to be prioritised in the following order: walking, cycling, public transport, cars. This is reiterated in *FIFEplan*², indeed the Scottish Government Reporter in the plan examination required Fife Council to rewrite a sentence that had transport modes in the wrong order even when that particular sentence was not itself indicating any policy priority.

6.1.12 Unfortunately, practice does not seem to have followed. It is perhaps not going too far to state that what we have been doing up until now has not been working.

6.1.13 The Scottish Government had a 2020 target of 10% of everyday journeys by cycling⁶⁷. This has not been achieved. Using cycling as a proxy, it seems entirely reasonable to say we have not had satisfactory ways with regard to meeting sustainable transport requirements.

6.1.14 It is disappointing that the Transport Assessment provided with the application is overwhelming devoted to the movement of motor vehicles, and its voluminous appendices that are almost entirely on that subject. It is notable it uses a figure for modal share of cycling not far off 1%.

6.1.15 The Transport Assessment, in what little consideration it does give to the entirety of sustainable transport modes, offers no new solutions to change either this, or other sustainable modes of transport.

6.1.16 *PAN 67, housing quality*¹⁹, noted back in February 2003 that, "New developments too often fail to create successful streets. The accessibility of many new developments depends too much on the car, and the car is often too dominant in the streetscape. Inadequate attention is given to separate and attractive pedestrian routes and links."

6.1.17 The publication of *Designing Streets*⁷ back in 2010 does not seem to have changed this. That some significant parts of its guidance were not in accord with the science may have contributed to this, apart from any other reasons.

6.1.18 The *Transport for New Homes* July 2018 report¹³, referenced by Sustrans in their Policy Position on how walking, cycling and placemaking could help tackle the housing crisis⁶⁸, still found housing, especially in the case of recently constructed developments, to be car-based: "We did not feel encouraged to walk and certainly we saw very few people about on foot."

6.1.19 Transport for New Homes updated their research and report in 2022⁶⁹: "Our visits in 2021 reinforced our conclusions from those four years ago. Top of the list is that large-scale greenfield housing usually ends up being almost completely car-based. There are exceptions to the rule but these are rare and require that the land-owner and their partners building the development are strongly motivated to construct the place according to an entirely different model."

6.1.20 *Transport for New Homes* is an England report, but is relevant because the *Designing Streets* policy document is itself very heavily based on the 2007 England and Wales *Manual for Streets*²², and because big volume house builders, such as Persimmon, operate UK wide. A particular comment that might resonate was, "The new trend is for the government to co-fund new roads with the developer on the back of large new housing areas."

6.1.21 A clear point of that report was that red lines need to be crossed. The planning for transport of the development has to extend beyond the red line bounding the development. This is Fife Council's Strategic Development Area, it would be neglectful for it not to acknowledge it has an essential role here. *PAN 67* stated the planning process has an essential role to play in ensuring that new housing is integrated into the movement and settlement patterns of the wider area.

6.1.22 The report is also of interest, because the team not only visited new developments in England, but also a number of places in the Netherlands as a comparison, including Houten.

6.1.23 Houten has already been recognised locally as a model for development of Cupar, with the addition of Cupar North and the relief road. Houten is of a very comparable scale to Cupar with Cupar North, particularly the original northern section of Houten (Figure 3, map of Houten). Houten exemplifies a larger scale use of filtered permeability²⁴ that *Cycling by Design* now promotes. This is in line with robust, peer reviewed, major journal published science, and the empirical evidence from places such as the Netherlands.

6.1.24 In Houten the individual areas of housing (such as the H1 to H9 in the current application masterplan) are only accessible for motor vehicles via its ring road. If you want to go, by motor vehicle, from one to another, or to the town centre, or anywhere else, this has to be done via the ring road. This is not the case for more sustainable modes of transport, the areas of housing are permeable to these. The result is that, for instance, it is quicker to cycle door to door than to take the car. The roads you can cycle on have very much fewer cars on them, because cars are using the ring road route. It feels much more convenient, safe and pleasant to cycle, or walk. This is a more general technique that in translation can be called "unravelling" ("Ontvlechten" in Dutch)⁷⁰.

6.1.25 In the case of Cupar North this would involve some significant modifications to the masterplan. It would involve the removal of the primary street as a through route for motor vehicles. Such a route would still be useful for active travel, but a redesign would be in order. It might still have a role for service and emergency vehicles, and potentially to allow permeability for buses, all with suitable 'gates' to prevent use by other motor vehicles. However, with regard to buses the width of Cupar North is such that it may be better serviced by stops on the relief road, without the intrusion of more motor vehicles into residential streets. A counterclockwise service running along the relief road, and A91 through the town centre, would not require people to cross the relief road to get to a bus stop.

6.1.26 Radial routes that go through Cupar North would also have to have some form of filtered permeability introduced at some point along their route into town. This may actually be better introduced within the existing part of Cupar north of the A91, otherwise it may lead to an increase in motor traffic from these areas having to go through the town centre (again, the red line needs to be crossed in proper consideration of this application). Some of the roads that are currently proposed to be stopped up may also be better to remain as they are within Cupar North, and have access provided to the relief road.

6.1.27 Filtered permeability can also be well used at the most local scale of housing. Culde-sacs which are permeable at both ends to non motor vehicles provide probably the most sustainable form of development. There is clear scientific evidence for the very many, very important benefits cul-de-sacs can provide⁷¹. This simple modification removes the single significant disadvantage that planning guidance has identified. Indeed, as there would not be a dead end, other than for motor vehicles, they are not actually cul-de-sacs by Fife Council supplementary planning guidance definition, and there is not actually planning guidance against them. Why then would we (Fife Council) be stopping their use?

6.1.28 There is a particular type of cul-de-sac design that allows probably the best implementation of a green network possible. This is covered more fully in the section on green networks. However it is worth pointing out here this can also provide for an additional extensive active travel network separated from the road network. This can provide for the finer grid (as opposed to coarser) for active travel that should be the aim.

6.2 Cycle storage

6.2.1 *PAN 67, housing quality*¹⁹, advised back in 2003 that, "Elements such as bin and bike storage should be an integral part of the design." The requirement for bike storage still does not appear to get sufficient attention. Good bike storage in homes should be accessible from both inside and outside, much as many garages for motor vehicles have been.

6.3 Car Clubs

6.3.1 One way to reduce the use of motor vehicles is actually to provide motor vehicles in the form of car clubs. This is well established. The Scottish Government's *A Long-Term Vision for Active Travel in Scotland 2030*⁷² notes car clubs as something to integrate with active travel.

6.3.2 Car clubs are more sustainable, not only in environmental terms, but in social and economic terms too. They allow people to access a car who would not otherwise be able to afford to, and by reducing the number of vehicles and fuel purchased, car clubs can retain money in the local economy that would otherwise leave it.

6.3.3 The use of electric vehicles can enhance those benefits. The environmental benefits can be obvious, but they can already have a lower total cost of ownership than fossil fuelled cars, because of the inherently much lower energy use of electric vehicles, and that energy can also be generated locally, retaining more money locally too.

6.3.4 One of the times people are most likely to join a car club is when they have significant changes in their circumstances - such as moving home. It is then part of sustainable decision making to consider the requirements of car club provision as part of a planning application for housing. It is a part of the satisfactory ways of meeting sustainable transport requirements.

6.3.5 The Transport Assessment should not be limited to providing residential travel packs that may contain "details of any car share clubs". That is hardly satisfactory. It should be identifying where car club spaces may best be located, providing the space for them, and considering the provision of electrical supply adequate for a car club vehicle that may need more rapid recharging.

6.4 EVs

6.4.1 Despite that *SPP*⁴ paragraph 289 says, "Consideration should be given to how proposed development will contribute to fulfilling the objectives of Switched On Scotland – A Roadmap to Widespread Adoption of Plug-in Vehicles. Electric vehicle charge points should always be considered as part of any new development and provided where appropriate.", and that paragraph 287 made clear an application such as this should be refused permission if the transport assessment does not identify satisfactory ways of meeting sustainable transport requirements, the Transport assessment appears to have nothing to say on the subject. That is not satisfactory.

6.5 Electric town bus

6.5.1 Consideration should be given to a town bus service extending to Cupar North (which has been discussed above), but there is also significant interest in this transitioning to electric. While a longer distance electric service stopping off in Cupar may not present any special issue (apart from being better for air quality), a service dedicated to the town may very well benefit from a charging facility of sufficient capacity being based here. The following item may possibly be considered as providing a potential solution.

6.6 Petrol station (or EV charge facility?)

6.6.1 Concern has been expressed about the proposal for a petrol station in the application. This is not something which is in the Development Plan.

6.6.2 There is a question whether this is sustainable in economic terms, and may just lead to a contaminated site to deal with.

6.6.3 The economic model of petrol stations is often weighted more to the attached retail facility than the supply of fuel itself, and the transition to electric cars is happening faster in European countries, including the UK, than some had expected.

6.6.4 Shell has recently converted a petrol station in Fulham in to its first all-EV charging hub⁷³. (It makes much of the retail facilities on site, since EV owners may spend more time and money here.)

6.6.5 BP has also told Reuters⁷⁴, "we are nearing a place where the business fundamentals on the fast charge are better than they are on the fuel." It notes the drive to expand EV charging points also aims at keeping a strong stream of customers at BP's petrol stations and their adjacent convenience stores.

6.6.6 Fastned, the Dutch EV charge company that may be developing a reputation comparable to the Tesla Supercharger network is looking for locations. Fife Council's planning service will be aware they are currently developing a location in Dalgety Bay.

6.6.7 Such a charging site may be a more acceptable, and better option to be considered?

7.0 SCHOOL LOCATION

7.1 20 minute neighbourhood

7.1.1 The School location is significantly related to transport and the concept of a 20 minute neighbourhood - that *NPF4*²¹ is making a key part of the planning system. However, where we put a school is also about how we nurture our children, their health and wellbeing, and quality of life. A school is also part of the wider community, and the facilities it provides potentially have a role for the community beyond their school role.

7.1.2 It should be noted the Planning Authority has confirmed in writing that, "The precise location of the proposed school within the Cupar North SDA site has not yet been confirmed. This issue will be considered via the planning application process."

7.1.3 It can also be noted a different location for the school has previously been presented. A map showing this is believed to be an earlier one presented by developers. (We do not here propose that location.)

7.1.4 The issues presented here are not definitive, but they do all tend to point to a location towards the east of the SDA as being a better location than that currently proposed.

7.1.5 Cupar currently has 2 mainstream primary schools, located in the south, and towards the west of the town (there is also Kilmaron School for pupils who have complex additional support needs). Everything else being equal, this would point to an additional school being towards the east.

7.2 Air pollution

7.2.1 The World Health Organisation (WHO) introduced new global air quality guidelines (AQG) in 2021^{59,60}. These are for significantly lower levels of pollution than previously. It is careful to point out even these should not be considered safe levels: "the available evidence cannot currently identify levels of exposure that are risk free for any of the pollutant-outcome pairs considered".

7.2.2 It is worth noting what the report Fife Council commissioned into the effects of development of Cupar North on the air quality management area (AQMA) in the town⁶¹ said:

"As exhaust PM emissions have reduced, the non-exhaust fraction of PM has increased in importance in explaining ambient concentrations of PM10. Both in current and future years the non-exhaust fraction is the largest overall component and hence will not reduce by much over time, even when vehicles are significantly cleaner in terms of their NOx emissions. This explains what could be perceived as a lack of sensitivity in the model predictions of PM10 to modernisation of the road fleet. Hence it is possible (or even likely) that Local Authorities in Scotland will still note exceedances of the annual mean PM10 standard due to the influence of non-exhaust PM emissions from road vehicles."

7.2.3 The report is available from Fife Council's website and finds particulate matter (PM) pollution would still exceed the current Scottish guidelines in the AQMA after Cupar North and the associated relief road is completed, The Scottish Guidelines would also presumably need to be reassessed in light of the new lower WHO guidelines.

7.2.4 These emissions are from tyre wear, brake discs, and settled particles on the road being put back into the air by passing vehicles. As the WHO notes on the science, we cannot say there is any safe level for these.

7.2.5 It seems reasonable as a precautionary position to seek to reasonably distance developing children from known sources of such pollution. Unfortunately, the currently proposed school location does very much the opposite. A junction of the relief road would be a significant generator of such particulates, and the higher speed of the relief road would result in more being suspended in the air. A deeper section of the development area, which allows for greater distance from the relief road should be preferred.

7.2.6 This would also likely be beneficial in relation to noise pollution from the relief road.

7.3 Flooding

7.3.1 The currently proposed school location appears to be immediately adjacent to a flood risk area identified by information the developers provide.

7.3.2 Comments to the planning application already received from an internal Fife Council consultee, Structural Services, Flooding, Shoreline & Harbours, indicates the information so far provided in the application is not sufficient, and risks may not have been adequately presented, to quote "Also, the surface water drainage preliminary calculations must accommodate a 1:200yr+40%CC event not the 1:200yr stated on the strategy drawings."

7.4 Active travel/Green network access

7.4.1 As is noted in the Green network section, there is merit in a school being embedded in a green network as part of active travel access^{15,28,29}.

7.4.2 The main green network and active travel route for the Cupar North SDA is now proposed to go along the edge of Cupar's existing built up area. A different location for the school to the east of the corner of Watts Gardens would put it directly in line with this. An existing town active travel green/blue network route, the "River Route" or "Blue Route", also comes up to meet the A91 close to this area, where the developer has already suggested a formal road crossing be located.

7.5 Community Facilities

7.5.1 It has been noted that community facilities are somewhat lacking towards the east of the town. It may be possible that, for instance, the hall and any playing fields could be community facilities. This might also justify better provision for the school itself.

8.0 CARE HOME LOCATION

8.1 This is a clear case of the need for crossing red lines referred to in the main transport section, from the *Transport for New Homes* report¹³. A strategic active travel corridor for the Cupar North Strategic Development Area may be in the process of being severely compromised?

8.2 If the care home development here⁷⁵ had been proposed on the line of the relief road, and interfered with it, would it have even reached this stage? Given that planning policy does have a hierarchy with walking, wheeling and cycling prioritised, and the 20 minute neighbourhood is now being promoted, this really does need to be discussed.

8.3 This is Fife Councils' Strategic Development Area, and Fife Council's *FIFEplan*² identifies Development Requirements for the CUP 001 Cupar North Strategic Development Area. This includes, "Develop a new high quality landscape edge, incorporating active travel provision (including a round-route core path and an east-west cycleway)".

8.4 What clearly came out of community consultation and has been agreed for some time will be in the new masterplan, was that this landscaped edge incorporating active travel provision, including an east-west cycleway, should be on the inside edge of the development. (Looking at relevant requirements, it could have been a reasonably logical finding from an early stage.) It has then been identifiable that a site in the control of Fife Council, just beyond the red line of the site boundary, is a key link in allowing completion of this east-west cycleway.

8.5 When Fife Council consulted the Community Council about placing a new care home on this site, concern about preserving the opportunity for the active travel link was raised at three separate meetings with Fife Council. Only at the very final opportunity was a minimalist route squeezed into the margins of the proposed care home development.

8.6 At Fife Council's planning committee, when preservation of the route was brought up by elected representatives, an officer seriously questioned the compatibility of the path with the care home use of the site. The officer had not seen the path was actually then a part of the care home application proposal. Mention of the active travel route was entirely absent from the main body of the report to the planning committee. This omission was significantly criticised at the committee.

8.7 This is not the first time the planning service has failed to give sufficient attention to preserving active travel routes in Cupar. It has previously inadvertently allowed one of the towns historic closes to be blocked, and did not protect what should have been recognised as an established right of way between the river walk and Eden Valley Business Park, that is now fenced off. To lose one may be regarded as a misfortune, to lose two looks like carelessness. A third example is indicative of a more general neglect of this issue.

8.8 It should be noted the *FIFEplan* Development Requirements for the SDA site itself includes the requirement for "Care home(s)". Fife Council has been forward thinking in colocating early years education with care homes elsewhere. Perhaps the space of the Cupar North Strategic Development Area would allow for an alternative approach involving this?

8.9 Perhaps the Development Plan's use of the word "strategic" in the Cupar North Strategic Development Area is simply a misnomer? That would appear to be the way Fife Council has acted here.

9.0 CONCLUSION

9.1 The street network strategy that has been promoted for Cupar North is a strategy that has not worked elsewhere to promote active travel. It is not satisfactory for sustainable transport requirements. The publication of the new Scottish Government guidance *Cycling by Design* makes this clear. The street network strategy is therefore not consistent with *SPP* paragraph 287, and therefore in the words there, "Planning permission should not be granted". The location of the school would also not seem satisfactory in this regard (and others).

9.2 The street network has also prevented the proper implementation of green network planning policy objectives. No evidence has been provided that the street network has been optimised for a heat network, and it certainly has not been optimised for passive solar design.

9.3 Failure to reasonably achieve these objectives seems inconsistent with Fife Council's legal obligations under Part 4 of the Climate Change (Scotland) Act 2009. We would therefore have to assume Fife Council's approval of the current application would actually be unlawful too.

9.4 We can therefore only conclude that the currently presented Cupar North Masterplan must be revised.

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