SOUTH DUBLIN COUNTY COUNCIL CLIMATE ACTION PLAN - SUBMISSION

Executive Summary

The IGBC welcome the publication of the South Dublin County Council (SDCC) draft Climate Change Action Plan 2019-2024 and the opportunity to provide feedback on it. Climate change is a transboundary challenge and the IGBC is delighted to see that the four Dublin Local Authorities have joined together to develop Climate Change Action Plans as a collaborative response for the first time ever.

However, as Dublin Functional Urban Area (FUA) now stretches over 100 kilometres from Dublin through Leinster and into south Ulster, strong collaboration with the surrounding counties is required to avoid repeating the mistakes of the past in terms of planning and transport. Most new housing developments in Dublin FUA are currently taking place in Kildare, Meath and Wicklow. This has serious consequences on congestion issues in SDCC which must be better considered.

With that regard, the IGBC is concerned by the piecemeal approach currently taken. It is striking that the emission challenge has been strictly divided into sectors.

For the built environment this is a sub optimal approach:

- Buildings are directly responsible for 40% of energy use in Ireland.
- But where we build them significantly impacts our transport emissions and the efficiency of the electrical grid.
- How we build them impacts our industrial emissions from the production of construction materials.

A coherent integrated approach to reducing the carbon emissions of the built environment in SDCC is hence needed.

The mention of specific targets for SDCC own operations are welcomed. However, IGBC believe that a stable and long-term framework is required to provide all players with certainty and generate confidence: Clear and concise goals can help with visualising the scale of the task ahead, hence helping the debate with key stakeholders. The IGBC suggest introducing a specific target at county level which should be in line with the EU 32.5% 2030 target.

- The IGBC welcomes South Dublin Council commitment to work with key stakeholders to influence and support carbon reduction initiatives across the City's transport, commercial and residential sectors. The IGBC and its members have developed a number of tools which could support Dublin City Council in this process:

- The Home Performance Index (www.homeperformanceindex.ie) label demonstrates that housing developments have been designed and constructed with care to minimise environmental impacts, ensure low running costs and enhance the health and wellbeing of the occupants. It includes embodied impacts, and 25 other indicators that directly or indirectly impact climate change such as access and walkability. It enables homebuyers and renters to make more informed choices.

- The IGBC has been working with the European Mortgage Federation to develop an Energy Efficient Mortgage. EEMs are intended to finance the renovation of both residential and commercial buildings where there is

evidence of an improvement in energy performance of at least 30%. - http://energyefficientmortgages.eu. Dublin City Council could give leadership by committing to link its own Rebuilding Ireland Home Loan to a higher level of sustainability.

- Our EPD Ireland programme www.epdireland.org is developing transparent information on the resource consumption, and environmental impacts including Global warming potential of construction products enabling full life cycle assessment of buildings.

With regard to monitoring, the IGBC believe that this process should be as transparent as possible and encourage the Council to launch an online dashboard showing progress. This would also be useful in engaging with the general public.

Introduction

Overall, a better integration of the five key action areas is needed. Buildings don't operate in isolation. Buildings are directly responsible for 40% of energy use in Ireland, but where we build them significantly impacts our transport emissions, the efficiency of the electrical grid, biodiversity and flood risks. How we build them also impacts our industrial emissions from the production of construction materials and infrastructure. Density directly impacts on level of abiotic mineral and fossil based resource consumption through requiring excessive under utilised infrastructure.

South Dublin County Council comprises large areas of car dependent sprawling suburbs which results in transport making up the largest component of carbon emissions. There is no integrated strategy cross cutting actions proposed aimed at addressing this key issue through densification. Tallaght and the area around the South Dublin offices, Civic Theatre, Shopping centre and retail park is essentially a very large contiguous surface car park with some buildings interspersed. It is one of the worst examples of car driven sprawl in Ireland and there are no actions to address this.

An integrated approach requires all factors that impact the built environment's carbon emissions to be measured. To this end, the Irish Green Building Council and its members have developed tools such as the Home Performance Index certification system. This offers one coherent integrated approach to reducing households' carbon emissions. It can be used by policy makers, planners, developers and banks to procure, develop and finance low carbon homes. It includes indicators to ensure new homes are truly resource efficient and enable their occupants to lead low carbon lifestyles. Thousands of homes will enter certification with this system in 2019 including 800 social housing units. The Home Performance Indicators (or some of its indicators) could support SDCC in better tackling climate change.

The IGBC would also be delighted to provide SDCC staff with the training required (e.g. Home Performance Index, Building Life Cycle Assessment) to support this transition.

Finally, the IGBC welcomes SDCC's commitment to lead by example and encourage behaviour changes among local communities. However, we believe far more could be done in that field than what is currently suggested in the draft plan. Below are some suggestions on actions that could be taken by SDCC to truly lead by examples:

1. Deep retrofit SDCC's social housing using alternative approaches such as Energiesprong which is specifically suitable for SDC's specific type social row housing typology- https://energiesprong.org

2. Take a holistic approach when assessing demolition vs. new built that includes embodied carbon as it's already happening in the Netherlands and in a growing number of European countries
3. Go beyond nZEB and commit to net Zero Carbon buildings for new buildings by 2030 and by 2050 for all buildings, as 22 cities worldwide, including Copenhagen, London, Stockholm and San Francisco, have already done - https://www.worldgbc.org/thecommitment.
4. Support the introduction of green mortgages and loans in Ireland through "green gain scheme" whereby a developer can develop more homes or develop faster in exchange for greater environmental efficiency. This approach is already taken by the cities of London and Madrid.
5. SDCC could introduce an annual target for maximum permitted area consumption of green field sites as per Germany to limit soil sealing, flooding risks and biodiversity loses.

Milestone 1: Initiate

IGBC has no specific comments on the methodology used – This is in line with best international practices. However, a piecemeal approach won't work. A coherent integrated approach to reducing the carbon emission of South Dublin built environment is needed. The Diagram attached as a supporting document shows how each action helps not only in reducing emissions in its own sector but has outcomes across land-use, transport, industrial sector and electricity generation sector.

Dublin Functional Urban Area (FUA) now stretches over 100 kilometres from Dublin through Leinster and into south Ulster. Dublin City Council should not only collaborate extensively with the 3 other Dublin local authorities, but also with the surrounding counties (Wicklow, Kildare, Meath and Louth) where most new housing developments are currently taking place.

Actions on Energy & Buildings

The IGBC strongly support SDCC's commitment to becoming as carbon neutral and to making every effort to increase energy efficiency and unlock renewable energy potential. SDCC's leadership in implementing Ireland's first large-scale district system is highly welcomed. However, the current plan isn't ambitious enough to achieve SDCC's vision.

SDCC's building stock

The IGBC welcomes SDCC's commitment to lead by example in renewable energy uptake and energy efficiency through retrofits of its buildings and social housing stock. Nevertheless, the approach isn't ambitious enough and SDCC could show stronger leadership in that field.

When it comes to retrofit, the diversity of public buildings means that it's a microcosm of what will need to happen in other sectors. SDCC should play an exemplary role in showcasing good high-quality solutions in public buildings and social housing. These homes offer a unique opportunity to deliver deep retrofit at scale, as well as to showcase its potential. Retrofitted public sector buildings could be used as learning and demonstration tools.

Furthermore, the IGBC strongly encourages SDCC to quantify the overall value of renovation vs. demolition of its existing stock. More specifically, a holistic method for cost-benefit analysis (including energy efficiency, historic value of the buildings, embodied carbon, etc.) should be developed.

Although the "nearly Zero Energy Buildings" standards is now into force for non-residential buildings, nZEB as currently implemented in Ireland is not enough. We need to move to net Zero Carbon buildings that consider not only the energy to operate them but also to build them.

The implementation of nZEB through Building Regulations TGD Part L Conservation of fuel and energy - Buildings other than dwellings came into force on the 1st of January 2019. This is 10 years after the previous

regulations from 2008 and long after the technology had already moved on. The current definition as implemented is not ambitious enough to move towards truly zero carbon buildings.

The current Irish definition of nZEB is a relative benchmark, comparing Air Conditioned (AC) buildings to AC buildings rather than an absolute energy benchmark based on function. This means the nZEB definition for AC buildings which is a 60% improvement over 2008 regulations is nowhere close to 'nearly Zero'. Ireland's mild climate means that heating and cooling can be achieved by largely passive means.

In contrast Oslo has committed to 'Energy Positive' public buildings by 2030, which produce more energy than they consume, such as Powerhouse buildings.

The IGBC calls on SDCC to commit to net Zero Carbon buildings. 22 cities and 5 states around the world have already committed to do this. IGBC is working with World Green Building Council to propose a net Zero Carbon definition for Ireland that covers not only operational emissions of the buildings but also embodied energy too. IGBC would be delighted to liaise with SDCC with that regard.

Other buildings

While SDCC is not responsible for the upgrading of private buildings, it's disappointing the Council is taking so few actions to encourage energy renovation of these buildings. Far more could be done to raise awareness about the benefits of retrofit and of more sustainable homes. For instance, SDCC could support the introduction of green mortgages and loans in Ireland through "green gain scheme" whereby a developer can develop more homes or develop faster in exchange for greater environmental efficiency. This approach is already taken by the cities of London and Madrid. Beyond EPC, it could also explore options for on-tax financing of deep retrofits.

The IGBC also suggests the final version of the plan include a clear strategy for vacant and under-used properties in SDCC. High quality energy upgrades could bring these properties back to life and reduce our building emissions. This way we could create new space for families in good locations. This would reduce our transport emissions and avoid emissions from new construction.

Nevertheless, a compact sustainable city should not be confined to the central areas. The occupancy density of outer suburbs is falling with household size. This leads to further reduction in population density that makes the provision of vital infrastructure such as schools, and public transport even more challenging. The option to vertically extend semi-detached or terraced housing by up to two floors and subdivide them horizontally could be explored. Removing the roof, adding a concrete or CLT floor and using this as a platform to construct an additional apartment is one scenario that would achieve both the retrofitting (energy efficiency) and the densification on a single development. The additional unit could pay for the entire cost of the development. The great renovation challenge offers an opportunity to remake, adding density, modern design and character to the Irish suburbs.

It may be necessary to consider with Government site area, or site value-based taxes to encourage owners to bring to market corner sites back lands etc. This would increase the supply of development land within the confines of Dublin. SDCC should also consider whether much of the poorly designed open space within the very low density suburbs dating from the 1970's, 80's and 90's could better serve the community by redevelopment for higher density housing with better quality well-designed and overlooked open space. For instance, the highly progressive Colombian city of Medellin (winner of the biennial Lee Kuan Yew World City Prize, and Urban Land Institute's 2012 World's most innovative city) tackled sprawl by making the transition from one/two storey suburban homes for large families to dense multi-storey apartment blocks for a changed demographic of smaller families in just two decades. This process was largely driven by land area based property taxes.

Actions on Transport

Transport is Ireland's second and fastest growing source of carbon emissions. Traffic congestion has become a real issue in the four Dublin local authorities and transportation contributes to a significant amount of GHG emissions within the South Dublin area. A significant proportion of this traffic is coming from the commuter

belt and it's clear that cooperation with the 3 other Dublin local authorities, but also with counties such as Kildare, Wicklow, Meath and Louth is needed.

The IGBC is delighted to see that SDCC is committed to improve the quality of public transport and public realms to enable more people to cycle and walk. However, the limited focus puts on planning is highly disappointing. It's impossible to rebalance transport and mobility within the county without improving planning and proactively supporting densification.

Also unlike Fingal and DCC there is no strategy to reduce absolute car numbers via supporting car sharing.

However, there are several actions that SDCC could take to reduce transport emission in the area:

- Introduce an accessibility index and a minimum benchmark for all homes and buildings as a prerequisite for planning permission, and radically reduce car parking requirements for new housing.
- Active car suppression measures in all suburbs by requiring charging for car spaces at all shopping centres, cinemas, retail parks, and all other privately-owned car parks via linking car spaces to the rates thus creating a revenue stream for SDCC. Co-ordinate with 4 other Local Authorities to ensure that it does not create competitive advantage for some locations.
- Support better public transport and support the roll out of car-sharing schemes to every street as an alternative to privately owned cars. Provide funding for the extension of the availability of EV charging point in the county (action 17);
- Develop a strategy for densification of existing suburbs by encouraging aggregation of sites and redevelopment of existing low-density semi-detached housing, through CPO, incentives etc;
- Develop a clear strategy for under-utilised and vacant buildings;
- Take away space from the car in the centres of towns and villages in order to build high quality walkways, segregated cycleways and high-quality rapid transit corridors.
- Redevelop the extensive surface car parking around the SDCC offices, theatre and environs and considering collaborating with shopping centre for comprehensive redevelopment into a high quality high density car free town centre.
- Consider as per Oslo and many other European cities eliminating all cars from Tallaght town centre, or at least enforce weekly car free days.
- Set a clear target to reduce car numbers owned within the county by say 50-60% by 2030 and for all of these to be electric.
- Support better public transport.

Co-benefits of this approach:

- Reduced costs per new home of between €2,000 and €36,000** for elimination of car parking for new housing based on SCSI report *The real costs of New apartment delivery*.
- Reduced embodied carbon of up to 16 tonnes CO2 per apartment*
- Reuses or reduces existing infrastructure reducing embodied carbon and resources.
- Higher density dwellings have inherently less heat loss.
- Reduces soil sealing and biodiversity loss.
- Enables more frequent public transport.
- Freeing up car spaces including around civic offices, theatres, and shopping centres would allow construction of several hundred and potentially over 1000 high density new homes. It would also create space for tree planting improving air quality and sequestrating carbon.

* Based on figure of 800g carbon/m² for 20m² of built area per car space with one car space per apartment. Basement carparks likely have higher embodied carbon per sq. meter.
** The Real Costs of New Apartment Delivery - Analysis of Affordability and Viability - SCSI Report sets out the cost reductions where car parking requirements are reduced.

Actions on Flood Resilience

IGBC is delighted to see that nature-based solutions are SDCC preferred response to flood defence. A number of our members have expressed concerns at poorly considered and implemented flood protection plans. Engineers, urban designers, ecologists, heritage and conservation officers should ALL be involved from the very beginning in developing flood prevention plans.

More specifically, to reduce flood risks IGBC encourages SDCC to take actions to limit soil sealing. E.g. using car reduction measures in the towns and villages to replace car parking areas with permeable surfaces and planting, where ongoing resurfacing of footpaths etc. use alternative permeable SUDs as an alternative to poured in-situ concrete.

Furthermore, Dublin City Council's adaptation strategy should not have a huge impact on climate emissions and flood defence carbon footprint should always be assessed.

Finally, IGBC encourages SDCC to fund "communication and awareness campaigns on flood risk management" (action 21), and specifically on nature-based solutions as these are often poorly understood.

Actions on Nature Based Solutions

The IGBC welcomes the inclusion of a full section on "nature-based" solutions. AS this action is strongly linked to planning, IGBC believes that the following actions are also required:

- Encourage regeneration within the existing settlements and discourage development sprawl.
- Introduce an accessibility index and a minimum benchmark for all homes and buildings as a prerequisite for planning permission to ensure that no home or building is dependent on privately owned cars.
- Work with government or through the rating system to provide fiscal incentives for better use of land such as land valuation tax.
- Creation of car free areas and radical car reduction measures can allow extensive planting of trees and vegetation in towns and villages.

This approach would reduce soil sealing and biodiversity lose and enable better public transport.

IGBC encourages SDCC to allocate funding for the development of demonstration sites to show how to combine nature conservation with existing land uses (action 29).

Actions on Resource Management

The IGBC welcomes the inclusion of a full section on "resource-management" but strongly regret that the concepts of the "circular economy" isn't mentioned in the document. Countries and cities in Europe have already developed "circular economy" roadmaps – e.g. the Netherlands have committed to reducing resource consumption by 50% 2030 and fully circular by 2050. SDCC needs to show leadership in that field.

Water conservation

Although the Council is no longer responsible for water delivery, there is a lot SDCC can do in that field:

Hot water is responsible for approximately 70% of all regulated energy in nZEB apartments according to the non-published Regulatory impact study carried out by SEAI. From our experience with Home Performance Index certification, there is currently no incentive for developers to integrate efficient sanitary ware into new homes as they believe that home buyers prefer high volume showers. We have shown though our Home Performance Index certification that homes can easily achieve low as 90l/person a day just with the use of low cost flow restrictors and aerators on taps and showers. There is very little knowledge amongst developers and specifiers about water efficiency despite availability of data for most common sanitary ware through the Unified European Water Label.

For social housing, we encourage SDCC to introduce a design limit of < 110 L/person/day requirements. This should be prioritised over rainwater harvesting as is akin to putting renewables on a home without first insulating the home.

Nevertheless, rainwater harvesting must also happen and we believe that action 23, "Research feasibility of rainwater harvesting in Council buildings" currently listed as "awaiting budget" should be funded.

IGBC is confused about the inclusion of "Trial of low-flush toilets in Council headquarters and social housing" as action awaiting funding - 22. Dual-flush toilets are mandatory under current building regulations. Perhaps

waterless urinals is what is meant. The focus should also be on low-flow taps and showers as explained above.

Waste management

Investors are increasingly worried about costs of future demolition where countries such as the Netherlands are moving to circular economy principles. Against this background, SDCC should act as a true leader in our transition to a more sustainable built environment and introduce full building life cycle assessment for all new builds. Life cycle assessment is a key indicator under Level(s) – the EU framework for sustainable buildings. This requires calculation of the embodied impacts in the construction materials. This is now relatively easy with software and widely available data for materials and is currently been pioneered by a number of construction organisations in Ireland including Dublin City Council's architects department. Construction waste management plans must be required and enforced. From Home Performance index Certification we have discovered that whilst developers are required to develop waste management plans, they are not implemented as they see it as a paper exercise. They must be required to produce records and benchmarks need to be developed.

Life cycle assessment must be required for all large scale demolition of buildings to show the environmental benefit of construction of the new building over retention of existing buildings to demonstrate how the embodied carbon and embodied resource use is offset by either higher density, higher energy efficiency or other environmental benefits.

Environmental Product Declarations should be required for the construction products that make up the greatest volume within a new construction such as cement, blocks, brick, insulation, to drive greater resource efficiency from product manufacturers. etc. See www.epdireland.org for further information.

Milestone 4: Implementation

IGBC welcomes SDCC's commitment to collaborate closely with the 3 other Dublin local authorities in the implementation of the action plan.

To reach its full potential, the plan must be defined and implemented in a transparent, fair and inclusive way. The publication of the plan should mark the beginning not the end of the process. We recommend that an open and collaborative approach is taken for the implementation of the plan to provide all key stakeholders with opportunities to engage.

Milestone 5: Monitoring & Iteration

Long-term quality data analytics are vital in dynamically informing the plan and making sure it adapts to change.

IGBC welcomes SDCC's commitment to monitor and verify progress on the implementation of actions. To better engage with citizens, and to keep the process as transparent as possible, we encourage the Council to launch an online dashboard showing progress.