December 13, 2021

His Worship Mayor John Tory and members of City Council
City Hall
100 Queen Street West
Toronto, ON M5H 2N2

RESCON®
RESIDENTIAL CONSTRUCTION COUNCIL OF ONTARIO

Submitted electronically

RE: IE26.16 TransformTO - Critical Steps for Net Zero by 2040

Dear Mayor Tory and members of City Council,

The Residential Construction Council of Ontario (RESCON) understands that at the Dec. 15 and 16 City Council meeting, consideration for accelerating the TransformTO timelines is on the agenda. RESCON would like to take this opportunity to voice its objection to this motion and share its industry expertise and perspective with City Council.

RESCON represents over 200 professional residential builders of high-, mid-, and low-rise buildings in the province, with a focus on the GTA. Our members build Ontario's communities and homes. We are committed to providing leadership and fostering innovation in the industry through the following six core focuses: Training and Apprenticeship; Government Relations; Labour Relations; Health and Safety; Building Science and Innovation; and Regulatory Reform.

In 2015, Canada and 194 other countries reached the Paris Agreement, an ambitious and balanced pact to fight climate change. Through this nationally determined contribution under the Paris Agreement, Canada pledged to reduce emissions by 40-45% below 2005 levels by 2030 and reduce its emissions to net-zero by 2050. Then, the Pan-Canadian Framework on Clean Growth and Climate Change followed in 2016 which committed to a net-zero energy-ready model national building code by 2030. More recently, in 2020, Ontario signed the Reconciliation Agreement on Construction Codes, whereby Ontario committed to harmonizing the Ontario Building Code with the National Construction Codes. The harmonization of codes will help reduce barriers related to labour mobility, product manufacturing and building design, all while ensuring a path forward for net zero buildings across Canada. While it may seem like the federal and provincial building code development process moves slowly to outsiders looking in, the reason for that is explained by the rigour which goes into process. The development of building codes involves countless subject matter experts, comprehensive research and development initiatives, monitoring of case studies, material and product evaluations as well as demonstration projects. This is a costly and complex process, which is why code development is typically left to provincial and federal governments, including support from the National Research Council Canada which co-ordinates the process and validates code change proposals.

While we applaud Toronto City Council for showing leadership in the fight against climate change through implementation of the Toronto Green Standard (TGS) dating back to 2010 and the more recent TransformTO climate action strategy in 2017, acting independently and more hastily ahead of higher-tier governments can sometimes come with unintended consequences. From 2010 to 2018, under Version 1 and 2 of the TGS, energy efficiency performance was regulated through an approach where computer modelling was used to demonstrate that a proposed building was a minimum percentage (i.e. 15 or 25%)

better than a comparative reference building designed to the Ontario Building Code. While this approach seemed logical, it was not until years later that a growing amount of data emerged to suggest this approach was not lowering greenhouse gas (GHG) emissions in new buildings. Toronto City Planning Division concluded that there was "*no significant correlation between % improvement over OBC and reduction in GHG's.*" This was corroborated by multiple reports, most notably in 2019 when Sidewalk Labs released an expert report titled *Toronto Multiunit Residential Buildings Study: Energy Use and the Performance Gap*, whereby a dataset of multi-unit residential buildings (MURBs) from 1995 to 2017 looked at energy models as well as metered electricity and gas readings, and found that, "*there is no clearly identified improvement in the energy efficiency of the MURBs analysed, since 1998*." Despite the best intentions, the former versions of the TGS proved futile in lowering GHG emissions and improving energy efficiency. Unfortunately, homeowners ultimately paid the price, as the TGS requirements increased the cost and complexity of construction passed on to new homebuyers, yet delivered lackluster performance in return. This is why RESCON supports the provincial and national building code development process over municipal programs, as the built-in checks and balances vet code change proposals and institute accountability to the process before any changes can be made.

More recently, applications submitted to the planning approval process after May 1, 2018, fall under the current TGS Version 3, which has been revised to mandate absolute performance targets for demonstrating compliance with energy efficiency and greenhouse gas metrics as opposed to the earlier modelled reference building format. While we are hopeful that this new method will yield building performance closer aligned to modelled data, it is still too early to tell. New building projects designed to meet the new TGS Version 3 requirements in 2018 are either still under construction or just nearing completion, due to the lag in the approvals process in relation to building construction. Therefore, the new absolute performance target methodology has yet to be validated by benchmarking energy models against real-world metered electricity and gas utility readings in occupied buildings. Accelerating the TransformTO, and particularly the TGS milestones, would propel our industry down a path that is not yet proven in a practical sense to deliver the anticipated greenhouse gas reductions. With the current TransformTO existing 2030 target of a 65% reduction already being "*among the most ambitious interim targets in North America,*" the motion to further accelerate targets presents itself as little more than virtue signaling. The fight against climate should not be a competition as to which jurisdiction can set the most rigorous targets first, it's about affecting meaningful change in reducing greenhouse gas emissions.

Another area of concern with respect to accelerating the TransformTO strategy and the TGS timelines relate to the overarching theme shifting away from natural gas for space and water heating in buildings in favour of electrification as well as also promoting electric vehicles. While these shifts are inevitable in the next 10 to 15 years, hastily mandating such policies sooner can actually trigger increased greenhouse gas emissions. In Ontario, where the Independent Electricity System Operator (IESO) cites Ontario's current installed energy capacity is chiefly comprised of Nuclear (34%), followed closely by Natural Gas/Oil (28%), does it really make sense to pre-emptively push towards electrification of buildings and vehicles before we have a carbon-free grid? While nuclear power provides the bulk of our electricity, due to their inherent properties, nuclear generally satisfies base loads, which is the supply of a consistent amount of electricity. Whereas peaker plants, fueled by natural gas generally run to meet spikes in demand, consistent with the time-of-use rates in Ontario. Therefore, if these policies to push building and vehicle electrification are not properly timed and co-ordinated with the capacity of Ontario's electricity system, Toronto may in fact be electrifying buildings and cars that will be powered by electricity generated from

natural gas peaker plants. Implementing policies towards electrifying both buildings and vehicles concurrently, can basically double electrical demand on the grid. The City must work not only with Toronto Hydro, but also with provincial agencies responsible for power generation to properly time their electrification policies with the ability to deliver a carbon-free grid.

In 2019, City Council voted unanimously to declare a climate emergency and adopt a strong emissions reduction target of net zero by 2050. Yet City Council has also acknowledged the worsening housing affordability crisis in Toronto. The existing timelines for TransformTO and the TGS already represented challenges for the development industry, so this policy acceleration will push the limits of what is technically feasible for builders, hindering the ability of industry to deliver much-needed housing. As stated in previous communications to staff within City Planning, there are significant TGS-related costs that are of concern to the building industry as the tiers progress, notwithstanding the motion before us to further hasten timelines. For one, the associated additional costs of moving beyond the mandatory TGS Tier 1 has prevented many builders from proceeding down the path of voluntarily attempting higher tiers, as evidenced by the fact that only 60 of the 2100+ (3%) building projects submitted since 2010 have achieved Tier 2 compliance. While homebuying consumers generally value the notion of sustainability, affordability concerns have hampered the market from valuing green buildings to command higher prices.

While the City has provided costing analysis as part of the zero-emission building framework in the past, the analysis pre-dates the current pandemic we are still working through, with COVID-related labour disruptions, supply chain unpredictability, inflation and reduced overall industry productivity not being accounted for. Moreover, new costing data has not been provided to evaluate the projected cost premiums associated with accelerating the TranfsormTO timelines. While the existing TGS version and tier progressions are not without their challenges, they are at least laid out in a manner that allows industry time to prepare. However,this motion would further exacerbate timelines and hamper affordability through increasing construction costs and complexity. Furthermore, without a more fulsome understanding of the cost implications attributed to the accelerated requirements, the City cannot adequately develop and administer the affiliated TGS Development Charge Refund program, which again underscores why there has been very little voluntary uptake by the industry for Tier 2 and above projects.

The TransformTO and TGS requirements are ultimately driving towards achieving net zero greenhouse gas emissions, which is generally referred to as operational carbon - a term used to describe the emissions created during the in-use operation of a building. But, by solely focusing on eliminating operational carbon, the products and methods of construction we are using may inadvertently be increasing emissions through embodied carbon.

Embodied carbon is the carbon footprint of a material, and it considers the greenhouse gas emissions that are released from cradle to grave, including the extraction of materials from the ground, transport, refining, processing, assembly, in-use (of the product) and finally its end-of-life. Embodied carbon is gaining increasing attention in industry as it is recognized that embodied carbon makes up approximately the same emissions or more than the operational carbon from a building. If policies were to consider the impacts of embodied carbon, alternate strategies may emerge in how broader regulations aim to reduce building-related emissions, considering both embodied and operational energy. Ultimately, we must remember the overarching goal is to reduce greenhouse gas emissions to combat climate change, not blindly focusing on how to regulate net-zero operational carbon of buildings. It should not matter if the emissions reductions come from a building's operation or the embodied energy from what goes into

constructing a building – both aspects must be considered. Afterall, embodied carbon emissions are locked in place as soon as a building is constructed and there is no chance for improvement like many operational carbon considerations. There are brief mentions of embodied carbon in the upcoming Version 4 of the TGS, such as benchmarking studies, but these findings are years away and need to be more prominent in such policy considerations. We urge council to direct more resources and attention to embodied carbon analysis to inform this type of policy decision related to the proposal to accelerate TransformTO timelines.

As stated in the TransformTO proposal, buildings are the largest source of GHG emissions in Toronto. Building emissions primarily come from burning natural gas to heat space and water. So, TransformTO cites net-zero buildings are critical to achieving a net-zero Toronto. However, it is acknowledged that new housing generally adds only 1% or less each year to the overall housing stock. Moreover, buildings constructed in the last two decades represent a markedly different level of energy efficiency than older buildings, as the OBC generally did not begin regulating significant sustainability measures until the 1990 edition. Therefore, energy efficiency gains in new buildings represent only marginal improvements in comparison to upgrading pre-1990 buildings. As such, working towards the Net Zero Existing Building Strategy in TransformTO is critical to achieving the accelerated 2040 goal, more so than accelerating the TGS requirements for new buildings which already perform leaps and bounds more efficiently than older buildings. The new 2030 interim targets presented in the strategy are a "*50 per cent reduction in greenhouse gas emissions from existing buildings, from 2008 levels; this means that approximately 100,000 buildings must be retrofitted in the next 8 years, or approximately 12,500 buildings per year*." Even if funding were not an issue, the pace and volume of this existing building retrofit goal is simply not realistic.

Meanwhile, a recent expert report, titled the *Vertical Legacy - The case for revitalizing the GTA's aging rental tower communities*, stated that Toronto's legacy towers (mostly privately owned purpose-built rental apartment towers over five storeys in height built before 1985) have since fallen into disrepair, representing over 1,700 buildings in Toronto or 182,000 housing units. The relatively affordable rents offered by legacy towers are quickly disappearing as low supply and high demand place upward pressure on legacy units, increasing rents despite chronically poor conditions. Moreover, when upgrades and retrofits are advanced, building owners have few options but to raise rents to offset costs of repair. Considering these conditions, the City needs to set practical and achievable goals for the Net Zero Existing Building Strategy in TransformTO, as this represents a greater possibility for achieving GHG reductions compared to further greening new buildings. TransformTO should focus on how to practically implement and incentivize the existing Net Zero Existing Building Strategy, which is already projected to cost hundreds of billions of dollars to fulfill, instead of moving up already challenging timelines.

To reiterate, we strongly object to this motion to accelerate the TransformTO timeline to 2040, which is 10 years ahead of the current Council adopted target. We feel that real-world performance evaluation of the current TGS Version 3 is warranted, building electrification needs to be implemented in lockstep with the capacity of utility providers, embodied carbon needs greater emphasis in TransformTO policies, and that greening the existing building stock should take priority over further accelerating new building requirements.

Sincerely,

Paul De Berardis, M.Eng., P.Eng.
Director of Building Science & Innovation
RESCON

Richard Lyall
President
RESCON

Copy to:

His Worship, John Tory, Mayor, City of Toronto

Chris Murray, City Manager

Tracey Cook, Deputy City Manager

Lisa King, Senior Planner, City Planning Division

Jane Welsh, Acting Manager, City Planning Division

Nancy Ruscica, Interim Director, Environment & Energy Division

Cecilia Fernandez, Acting Manager, Environment & Energy Division

Marilyn Toft, Secretariat, City Council