

January 6, 2021

Office of the Governor  
Massachusetts State House  
Boston, MA 02133

Dear Governor Baker,

The Boston Society for Architecture (BSA/AIA), representing 92% of the registered architects in the Commonwealth, strongly urges you to sign An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy (Bill S. 2995). Massachusetts urgently needs this law to meet local and state climate goals. Further, the entire United States stands to benefit from Massachusetts' continued environmental leadership under the Baker Administration.

As representatives of 750 businesses in the Commonwealth, the BSA supports the climate bill, including interim emissions reduction targets, accelerated renewable energy production, environmental justice standards, natural gas utility safety, increased funding for the Massachusetts Clean Energy Center, and many other important provisions.

As representatives of 4,500 architectural and allied professionals in eastern Massachusetts -- New England's largest building industry association -- we also support the many specific aspects of the bill pertaining to buildings and the regulation of buildings. Of utmost relevance to our industry and importance to meeting the Commonwealth's climate goals are:

1. Promulgation of a net zero stretch energy code that cities and towns may adopt;
2. Shifting of responsibility to the Department of Energy Resources (DOER) to develop the net zero stretch energy code;
3. Expanding the BBRS by adding 4 new members, with a focus on energy efficiency.

We offer the following information to support our position on these issues in the corresponding numbered sections below.

### **1. Promulgation of a Net Zero Stretch Energy Code**

Ours and other organizations, representing a broad alliance of design professionals and climate advocates, have previously voiced our support for a net zero stretch code in letters and testimony to the BBRS, the legislature and your Administration. Based on our individual and collective professional experience, we support a net zero stretch code for the following reasons:

#### **Climate Imperative**

In Massachusetts, existing commercial and residential building operations result in more than 40% of the total annual greenhouse gas emissions. Most buildings constructed today will still be in operation long after the 2050 deadline by which Massachusetts must reach 100% carbon neutral per the Baker Administration's goal, as reinforced by the climate bill. Any new building that is not net zero will have to be retrofitted in the future, at a far greater cost than achieving this performance standard initially. The climate imperative is such that we must achieve 50% emissions reductions from 1990 levels by 2030 in order to avoid the worst effects of climate change. Net zero buildings are vital to achieving this level of reduction.

#### **Health Advantages**

Net zero buildings improve public health by reducing combustion emissions, thereby reducing both indoor and outdoor exposure to carbon monoxide, particulates, NOx, SOx, and elevated CO2 levels. Net Zero buildings also offer improved occupant health and

comfort through greater control of indoor temperature due to increased insulation, enhanced humidity control via improved exhaust air energy recovery, improved indoor air quality due to filtered mechanical ventilation, reduced risk of mold due to tighter envelope assemblies, and appropriate balance of glare control and access to natural light and views.

### **Financial Advantages**

Studies, such as *The Economics of Zero-Energy Homes* (Rocky Mountain Institute), and the *Zero Energy Buildings in Massachusetts: Saving Money from the Start* (USGBC MA), demonstrate that net zero buildings carry a negligible construction cost premium and result in significantly lower total cost of ownership. For example, when building construction is financed through loans or bonds, net zero buildings typically save more in operating cost than the marginal uptick in loan or bond payments, resulting in positive cash flow from day one. Additionally, net zero and green buildings have enhanced asset value, reducing financial risk to developers looking to turn over properties.

Extrapolating from savings achieved by the MassSave program, a net zero building code will result in billions of dollars in net benefits to the Commonwealth. Also, by reducing the total monthly cost to own or rent, net zero housing offers greater affordability, and thereby would help to address the current housing crisis currently affecting low-income families in many parts of the Commonwealth.

It seems there is a common misunderstanding that transitioning to renewable energy will hurt low income families. Already, examples of affordable housing projects designed to net zero standards abound. For example, all city-funded housing in New York City and Boston must now meet Passive House or similar standards. Energy efficiency and clean energy is a way to unburden the least able to pay for the societal cost of business as usual. In expressly focusing on a just transition, this climate bill will help ensure equitable green futures.

Massachusetts also has an opportunity to continue its legacy of national leadership in energy efficiency, design, and building technologies, positioning our state as an economic exporter of expertise and services. This bill will stimulate job growth and the economy of Massachusetts.

### **Resilience Advantages**

Net zero buildings typically offer greater resilience through reduced demands on emergency infrastructure (such as lower fuel consumption by emergency generators) and “passive survivability”, whereby the envelope performance allows habitable conditions even when no active mechanical systems are operational. In addition, there is the opportunity for on-site renewable energy and storage systems to provide power to select building loads for periods of longer power outages. As extreme weather and flooding are likely to increase, net zero buildings can play an important role in both mitigating and recovering from these events.

### **Practical and Achievable Today**

Net zero buildings are practical and achievable today. Our members have personally engaged in the design and construction of residential and commercial net zero buildings at many scales and budgets, including a broad range of building uses and architectural styles. As noted above, net zero buildings are achievable with today’s technology with little if any construction cost premium, resulting in dramatically reduced operating costs and lower total cost of ownership.

Homeowners, businesses, institutions, and developers are now taking advantage of the benefits of net zero buildings at all scales. This has led to exponential growth in the number and size of net zero buildings in recent years.

A number of Massachusetts cities and towns including Boston, Cambridge, Somerville, Amherst, Wellesley and others already require net zero performance for some or all new municipal buildings. More than a dozen towns and cities in Massachusetts have built or are currently building net zero energy buildings, including schools as large as 400,000 square feet.

Massachusetts is not alone in the pursuit of net zero buildings. In California, all new residential buildings must be net zero as of 2020, and all new commercial construction must be net zero by 2030. Mayors of New York City, Portland, Seattle, and Washington DC have also committed to requiring net zero operation for all new buildings as of 2030. By 2022, Boston anticipates promulgating a zoning code that mandates net zero emissions for all new buildings. Net zero buildings are now standard best practice.

### **Statewide Demand from Municipalities, Building Industry Professionals & Citizens**

Over the past two years, towns and cities throughout Massachusetts have voiced their need for a net zero code in order to meet local and state climate goals. Architects, engineers, and contractors have also voiced their support for a net zero code, as notably demonstrated by the Built Environment Plus Net Zero Stretch Code Support Letter, signed by approximately 75 major Massachusetts-based architecture, engineering and construction (AEC) firms and 1,500 individual signatures from AEC professionals throughout the Commonwealth.

In response, the Northeast Energy Efficiency Partnership has worked with a broad coalition of building industry professionals and municipal representatives to propose the Energy Zero or E-Z Code for commercial buildings. The E-Z code addresses improved building energy efficiency, clean thermal energy, and renewable energy procurement for buildings. A companion E-Z Residential Code is currently under development and is planned to be introduced at the next BBRs public hearing in May 2021.

Although we support the DOER in development of the net zero code, the outpouring of support for the E-Z Code demonstrates the demand for a net zero code. This support is reflected by letters and testimony to the BBRs from 30 towns and cities in the Commonwealth, the Built Environment Plus sign-on letter supporting the Climate Bill S. 2995, and many other voices of support submitted to the BBRs, legislation, and your Administration.

## **2. Shifting Responsibility to DOER to Develop the Net Zero Stretch Energy Code**

Over the past nine years, the Stretch Code performance standards have stalled, resulting in minimal improvement since the first iteration in 2012. This next decade is the one that counts. Net zero buildings surely need to be a priority. The DOER has both in-house expertise and the ability to hire consultants to support the development of energy code language. The DOER has the experience, having originated or cultivated the majority of the energy code updates to date. The DOER also has the ability to fund research, and currently has consultants working to perform the requisite analysis to determine the optimal requirements for a net zero code that will ensure feasibility and cost effectiveness. DOER is clearly the appropriate entity to develop the net zero stretch energy code.

## **3. Expanding the BBRs by Adding Four New Members, with Focus on Energy Efficiency**

The BBRs does not have the expertise to effectively address energy code issues, and in particular, the topic of a net zero stretch code. Therefore, it is necessary to expand the BBRs board with four

new members that have the requisite expertise to understand and adjudicate these issues, at least to a level sufficient to identify when they should draw upon the greater resources of the DOER. Expanding the BBRS board by four new members will likely also increase its diversity and thereby strengthen its representation of the Commonwealth.

### **Conclusion -- Urgent Call for Climate Action in the Built Environment**

In June 2019, the landmark AIA Resolution for Urgent and Sustainable Climate Action was passed by an overwhelming majority of the national American Institute of Architects (AIA), compelling all design professionals to act with urgency and sustained effort to reduce emissions. The work of our members has shown that net zero energy buildings are practical, affordable and possible for essentially every building type. This climate bill will help net zero buildings proliferate throughout Massachusetts.

Buildings have a new role in our society. They must be employed as a tool to solve the climate crisis, to protect us from extreme weather and to correct for social injustices. Sustainable design, once considered a fad, is now the cornerstone of best practice. Climate action has become an imperative.

Climate change is an existential threat posing unprecedented challenges to the built environment.

DOER's leadership in the development of energy code standards is proven. Their enhanced role is not only desirable but essential moving forward. DOER leadership, in combination with enhancing the energy expertise of the BBRS will open the door to promulgating an effective net zero code which is urgently needed.

It is a misconception that a pandemic is a bad time to pass a climate bill. Yet no time is better served. The pandemic has shown that public health and planetary health are critically linked. As climate change drives movement of animals and people, greater opportunities for exposure and virus mutation are anticipated. Meanwhile, climate scientists report that this decade is crucial for action, and that global emissions must be reduced to 50% below 1990 levels to avert the worst impacts of climate change. At the same time, our economy, temporarily paused by the pandemic, stands to benefit from a surge in new green jobs.

In short, the BSA enthusiastically supports this legislation. We urge your signing of this landmark climate bill. It provides powerful tools -- policies, metrics and accountability -- as we believe will help propel a just transition to a thriving clean energy economy and sustainable healthy environment for future generations.

Thank you for your consideration.

Very truly yours,



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