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April 5, 2023

BY HAND DELIVERY

Chairman Thomas Burt
and Members of the Harbor & Coastal Zone Management Commission
Village of Mamaroneck
169 Mt. Pleasant Avenue
Mamaroneck, NY 10543

Re: 572 Van Ranst Pl, LLC
Harbor & Coastal Zone Management Commission Consistency Review
Premises: 572 Van Ranst Place, Village of Mamaroneck, New York
(Parcel ID: 8-88-15B)

Dear Chairman Burt and Members of the Harbor & Coastal Zone Management Commission:

The enclosed materials are submitted on behalf of our client, 572 Van Ranst Pl, LLC (“the Applicant”), in furtherance of the Harbor & Coastal Zone Management Commission’s (“HCZMC”) consistency review of the proposed sustainable five-story multi-family residential building (the “Project”).

As the Commissioners are aware, the proposed multi-family building will be powered by a high-efficiency state-of-the-art rooftop fuel cell system.¹ At the March 15, 2023 HCZMC meeting, the Commissioners were generally supportive of the Project’s flood resilient and reliable power solution proposed for the building. As requested by Commissioners, the Applicant is providing the enclosed additional materials related to the use of microgrid technology as a reliable energy source to power a multi-family building that enables residents to shelter-in-place during flooding caused by significant weather events.

Developments that enable residents to shelter-in-place during significant weather events and/or catastrophic power outages are encouraged by U.S. government agencies like the Federal Emergency Management Agency (“FEMA”) and the Department of Energy, as well as numerous States, municipal governments, energy manufacturers and nonprofit corporations. Enclosed in **Exhibit C** is an Index of publications, bulletins, reports, articles and guidance documents on the

¹ The fuel cell system utilizes air source heat pumps to minimize natural gas consumption and will operate indefinitely, provided that natural gas is flowing. Given the underground nature of natural gas infrastructure, this power source is largely unaffected by wind or severe weather, short of an earthquake, and therefore has more reliability than the electrical grid during flooding events. The Premises currently has a natural gas connection which will tie-into the proposed hydrogen infrastructure.



April 5, 2023
Page 2

benefits of shelter-in-place actions during emergency events and microgrid technology as a resilient and reliable method of providing an uninterrupted power supply.

As demonstrated by the materials provided in the Index (**Exhibit C**), shelter-in place development minimizes negative impacts to safety and human lives during flooding and hurricane events. In fact, FEMA guidance states that: “Jurisdictions should always consider shelter-in-place as the first/default option, when feasible”² explaining that:

When populations shelter in place, jurisdictions reduce costs, resource requirements, and negative impacts of evacuations, while promoting improved response and quicker re-entry (for those who spontaneously evacuate) and recover.³ (Emphasis Added).

Microgrid technology, such as the Project’s proposed fuel cell system, can generate local power independent of the electric grid. As such, a building equipped with microgrid technology offers a reliable and resilient power supply to enable shelter-in-place actions. See Exhibit B – Aris Energy Microgrid Analysis.

A 2018 report commissioned by the U.S. Department of Homeland Security called for support of the creation of microgrid-driven communities to enable shelter-in-place solutions to withstand catastrophic events (the “DOH Report”). Specifically, the DOH Report recommended that local governments support the development of community enclaves incorporated into existing infrastructure and located throughout the community to prevent mass migration and support survival where migration during emergencies is not possible.⁴ Specifically, the DOH Report found that:

Resilience at the state and local level will be critical to enable people to shelter in place and facilitate faster recovery. Any event that requires a mass evacuation will

²U.S. Dep’t Homeland Security, FEMA, Planning Considerations: Evacuation and Shelter-in-Place, July 2019, p. 22. Available at: <https://www.fema.gov/sites/default/files/2020-07/planning-considerations-evacuation-and-shelter-in-place.pdf>.

³ Id.

⁴ National Infrastructure Advisory Council, Surviving a Catastrophic Power Outage: How to Strengthen the Capabilities of the Nation, Dec. 2018, p. 11 & 12. Available at: https://www.cisa.gov/sites/default/files/publications/NIAC%2520Catastrophic%2520Power%2520Outage%2520Study_FINAL.pdf.



April 5, 2023
Page 3

use up critical resources, clog transportation pathways, and reduce the workforce necessary for infrastructure recovery.⁵

The designs recommended in the DOH Report for this resilient infrastructure include “microgrids that combine distributed energy resources, energy storage, and innovative consumer technologies.”⁶ This technology includes fuel cell systems like the one the Applicant is proposing for the Project.

Similarly, the Department of Energy recognizes that resilient development can “reduce the burden on emergency response teams by supplying power before, during and after grid outages through onsite energy systems” during extreme weather.⁷

New York and Connecticut already incentivize incorporating microgrids into existing critical facilities like hospitals, grocery stores and police stations to withstand prolonged power outages from severe storms. See Exhibit C. In fact, both the Village of Mamaroneck and Town of Mamaroneck have studied microgrid feasibility through the New York State Energy Research and Development Authority (“NYSESRDA”) program “NY Prize.” See Exhibit B. Specifically, the Village has recognized that:

[s]ince large portions of the Village are within FEMA mapped flood plains, with impacts from both tidal and riverine flooding, it is important to maintain power for these areas in order for them to operate sump pumps and other emergency equipment to protect structures.⁸

⁵ Id. p. 12. See also Homeland Security Calls for Microgrid-Driven Community Enclaves, Microgrid Knowledge, Dec. 11, 2018. Available at: <https://www.microgridknowledge.com/google-news-feed/article/11430053/homeland-security-calls-for-microgrid-driven-community-enclaves>.

⁶ National Infrastructure Advisory Council, Surviving a Catastrophic Power Outage: How to Strengthen the Capabilities of the Nation, Dec. 2018, p.12. Available at: https://www.cisa.gov/sites/default/files/publications/NIAC%2520Catastrophic%2520Power%2520Outage%2520Study_FINAL.pdf. See also Wood, Elisa. “Homeland Security Calls for Microgrid-Driven Community Enclaves,” Microgrid Knowledge. Dec. 11, 2018. Available at: <https://www.microgridknowledge.com/google-news-feed/article/11430053/homeland-security-calls-for-microgrid-driven-community-enclaves>.

⁷ US Dep’t Energy, Better Buildings. Available at: <https://betterbuildingssolutioncenter.energy.gov/webinars/shelter-storm-powering-community-resilience-hubs>.

⁸ Mamaroneck Double Winner in NY Prize Micro-Grid Contest, Mamaroneck Self-Storage. Available at: <https://www.mamaroneckselfstorage.com/single-post/2015/07/08/mamaroneck-double-winner-in-ny-prize-microgrid-contest>.



April 5, 2023
Page 4

Examples of similar operational fuel cell installations in New York, Connecticut, and throughout the United States are included in **Exhibit B**.

As concluded in the enclosed letter from Dr. Mehdi Ganji, an expert in microgrid energy and community resilience planning, the Project will achieve the goals of shelter-in-place action during significant flooding events using the proposed fuel cell system. See Exhibit A. The Project's sustainable building will be equipped to provide continuous power to residents during a Village power outage event, which will keep occupants safe and reduce the demand on emergency responders for evacuation assistance.

The existing 2-family home on the Premises is not resilient to flooding and had 14 residents occupying the Premises prior to the Hurricane Ida. Distinguishably, the proposed new building will not put additional strain on the Village's emergency response system beyond existing conditions. Indeed, the Project enables the shelter-in-place action recommended by FEMA and the U.S. Departments of Homeland Security and Energy. With uninterrupted power, residents of the new building can safely remain inside the building without the need for immediate rescue. This alleviates pressure on Village emergency responders so they can focus on rescuing vulnerable people in immediate life-threatening flooding situations. The microgrid technology, along with the height of the building almost 8 feet above base flood elevation (at elevation 33, which is approximately 12 feet above the existing grade), enable occupants to wait until the flood waters recede to leave the building.

Further, the Applicant prepared a draft Flood Emergency Management Plan that provides a framework of the procedures for the building to ensure a coordinated, prompt and appropriate response to flooding emergency.

For the reasons set forth above, as well as in the Applicant's prior submissions, the Project is consistent with the policies outlined in the Village's Local Waterfront Revitalization Program ("LWRP"). The proposed building is designed with a resilient and reliable microgrid power source to minimize the endangerment of human lives caused by flooding and allow for shelter-in-place action during significant flooding events. The Applicant intends for the Project to serve as a model for future multi-family buildings in the Village to positively influence resilient redevelopment within the floodplain.

I. Materials Enclosed

In further support of this application, and for ease of reference to previously filed materials, enclosed please find two (2) sets of the following materials:

Exhibit A: April 3, 2023 Letter from Mehdi Ganji, Ph.D and credentials;
Exhibit B: Aris Energy Solutions Microgrid Analysis; and



April 5, 2023
Page 5

Exhibit C: Index of publications, bulletins, reports, articles and guidance documents on microgrid technology and shelter-in-place actions.

We look forward to appearing again before the HCZMC on April 19, 2023, to continue the consistency review of this Application. If you have any further questions or comments in the interim, please do not hesitate to contact me. Thank you in advance for consideration of the enclosed.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Kristen Motel', is written over a light blue horizontal line.

Kristen Motel

Enclosures

cc: Brittanie O'Neill, Land Use Board Secretary
Ashley Ley, AKRF, Village Planning Consultant
Sullivan Architecture, P.C.
Hudson Engineering & Consulting P.C.
Aris Energy Solutions
Anthony B. Gioffre III, Esq.
Client