



Borough of Madison
Hartley Dodge Memorial
50 Kings Road
Madison, NJ 07940

April 7, 2021

To: Frances Boardman

From: Claire Whitcomb, Madison Environmental Commission Chair

Overview of our comments on 120 Madison Ave:

The applicant is proposing a well considered plan that, on the whole, does not increase the environmental impact of the existing structure. However it does not demonstrate that, aside from reducing impervious coverage, that is replacing an antiquated building with one that reflects Madison's goals of being an environmental leader.

Toward that end, the MEC offers the following recommendations:

EV Charging/Parking

It is excellent to see that the proposed parking areas will be paving blocks in sand, mitigating impervious coverage. Can the parking lot be futureproofed to include EV charging stations and/or conduit for future installation of charging stations? NJ has an aggressive goal of 330,000 electric vehicles by 2025.

- All new construction should be "EV ready" so NJ residents can make the switch from gasoline-powered vehicles.

Energy/Lighting/Utilities

We are interested to know more about the energy efficiency of this building and whether the applicant has taken measures to reduce its impact. Since 66% of Madison's carbon footprint comes from the built environment, the MEC recommends:

- Windows, insulation, roof color and other building materials be reviewed to see where energy savings can occur. These elements should be built into the design specifications, including the energy efficiency rating of AC units.
- Electric heat pumps and a light colored or reflective roof are advised.
- Design plans should demonstrate that the building is solar ready and photovoltaic panels can successfully be installed either now or in the future.
- Design plans should include the necessary wiring and infrastructure so the building can be powered with 100% electricity for heating, cooling, appliances etc.
- This infrastructure will "future proof" the building and eliminate the need for expensive retrofits as New Jersey passes clean energy electrification (see NJ Energy Master Plan notes below).
- Indoor and outdoor plans should include energy conservation features such as energy-efficient appliances, smart thermostats, motion sensor lights, dimmers and timers.
- Outdoor bulbs should be yellow toned, not white/blue for both human health and wildlife protection).

Water usage and aquifer protection

To mitigate the long term effect of the built environment on Madison's natural resources, we recommend:

- water reducing toilets and sinks, waterless urinals in the retail area, water saving dishwashers and other devices
- drip irrigation be installed for landscaping.
- timers be used for irrigation systems
- formulating an Integrated Pest Management plan and compliance with Madison's fertilizer ordinance <https://www.rosenet.org/ArchiveCenter/ViewFile/Item/1402>.

Stormwater Management

The applicant indicates that "the stormwater drainage and grading for the proposed site has been designed to maintain existing runoff patterns." The roof leader system discharges into the stormwater conveyance system located within Vinal Place. This means that there will be no increased flooding, as well as no increased discharge to the aquifer. The plan replicates a stormwater system which was established decades ago, before climate change became a threat to our water supply.

- Can the plan be rethought to include green infrastructure--bioswales, rain gardens, etc?
- Could the proposed triangular garden be formulated as a rain garden to accept some of the runoff from the roof at that corner instead of directing it solely into the stormwater collection system. Or an area of the side yard facing Vinal Place?
- The EIA identifies soils as Riverhead and Urban-Haledon--these may be good for rain gardens.
- The EIA indicates that soils within the eastern portion of the site are not conducive to groundwater discharge. Can this be improved with green infrastructure?
- How is the amount of groundwater recharge under proposed conditions and how is it anticipated to remain consistent with existing conditions?

Native Plants

We are pleased that the applicant is proposing to landscape with native plants, however the plant list does not support that goal. Please see the attached comments indicating which species are invasive and non-native.

Bike racks

Two bike racks are proposed. How many bikes do "two bike racks" accommodate? Is this the right amount given a university setting?

Recycling Historic Elements

Are there any architectural details such as mantels, paneling or other elements that could be removed in advance of demolition? Many Madison buildings of this era were built with now rare materials such as chestnut wood.

- Volunteers would be happy to work with preservation of designated materials.

Madison’s Master Plan

The above recommendations from the MEC will help make Madison “a model for energy efficiency, sustainability, and resiliency” and meet the Master Plan’s goal of “reducing the Borough’s environmental footprint and carbon emissions.”

New Jersey’s Energy Master Plan

All new construction in Madison should be designed with these NJ Energy Master Plan goals in mind:

- 100% clean energy by 2050
- Solar on new construction
- Eliminate fossil-fuel powered vehicles
- 330,000 electric vehicles by 2025
- 90% building electrification by 2050
- Phase out gas boilers and water heaters.
- Net zero carbon goals for new construction
 - “Modern air- and ground-sourced electric heat pumps have similar operating costs to natural gas furnaces and are approximately twice as efficient as electric baseboard heating.”
 - “While building electrification increases electricity use, it reduces total energy needs because heat pumps are much more efficient than direct combustion of fossil fuels for heat.”
 - “If gas use in buildings is retained, further emissions reductions require either substituting natural gas with much more expensive carbon-neutral, bio- or synthetic gases, or transitioning buildings to electrification by retrofitting gas appliances with heat pumps before their useful life is over.” (https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf)
 - Natural gas leaks methane at all stages of its lifecycle; methane is 86x more potent as a greenhouse gas than CO2.
 - Natural gas in NJ is 67% fracked gas, according to empowernewjersey.com.

The MEC extends its thank Kathleen Caccavale, chair of Sustainable Madison Advisory Committee, for her invaluable help in preparing these comments.