HONORABLE MENTION
MOST COST-EFFECTIVE DESIGN

Rowhouse Revisited
re-imagining the Baltimore rowhouse for greater economy, higher efficiency and reduced environmental impact.

Phone: 410.235.1043
Email: jay@arqarchitects.com
Website: www.arqarchitects.com
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Rowhouses in Baltimore, as in many east coast American cities, are the primary building blocks of the urban residential landscape. Codified as a distinct building type in the 19th century, the rowhouse continues to provide an opportunity for single-family homeownership at a density that supports city living and culture. The adaptability and availability of traditional rowhouses ensures that the existing stock of houses will remain attractive options for renovation and reuse.

However attractive traditional rowhouses are for rehabilitation and reuse, they do not present an ideal paradigm for new construction. Due to a lack of thermal insulation and viable air barriers, older rowhouses are energy intensive to operate and less comfortable during peak heating and cooling seasons. Solid masonry construction also makes them difficult to retrofit. The traditional materials, brick in particular, that make historic homes so beautiful also make them labor and energy intensive, as well as costly, to build. Finally, the conventional subdivision of interior spaces does not always readily support changing lifestyles and the patterns of use associated with contemporary urban living.

This design proposes a model for maintaining the positive urban attributes of the traditional rowhouse, while providing an updated platform that can support modern patterns of use within the broader context of our current cultural and environmental reality. By building new rowhouses less expensively, using contemporary materials and construction practices, the project looks to revitalize this traditional typology.

If the contemporary rowhouse can be made more energy efficient and less costly to own and operate, with proportional reductions in the lifecycle costs associated with its materials and methods of construction, these buildings can continue to provide a vision for urban living that is as compelling in the 21st century as it was in the 19th.

Above: image of rowhouses in the 1500 block of Broadway from the APA Carbon Challenge submission materials

Below: image of three-story facades offer definition to the street edge and continuity with the historic rowhouses

The individual carports are not included in the base project and would require variances to allow the single space to meet the on-site parking requirements and exceed the 65% limitation on impermeable surfaces.

PROJECT CONCEPT
SCALE: Not To Scale

MINIMIZE THE FOOTPRINT
Restricting the footprint of the rowhouse to the minimum dimensions permitted by code and the terms of the competition reduce the environmental impacts associated with the foundation and insulation. A crawlspace instead of a slab-on-grade reduces the use of concrete.

STACK THE FLOORS
Locating the living spaces on the first floor allows separation from the three bedrooms on the second and third. Having three floors also gives more definition to the space of the streets.

SIMPLIFY THE MASSING
The stacked, impact-resisting above creates large exterior exposures and complicated air sealing and insulating details. Sloping the line of the roof minimizes exterior exposure and detailing while creating more dynamic interior spaces.

COMBINE THE STAIRS AND HALLWAYS
Combining the vertical and horizontal circulation in one space minimizes the need for interior partition walls while maximizing the usable living space for the residents.

USE ADVANCED WALL AND FLOOR FRAMING
The vertical party wall and horizontal floors joists align at 24” o.c. allowing for greater efficiency in framing and reductions in material use.

USE ADVANCED WALL AND ROOF FRAMING
The vertical exterior double-stud walls and horizontal roof rafters align at 24” o.c. allowing for greater efficiency in framing and reductions in material use. Longer roof spans require deeper TJIs leaving more space for cavity insulation.

SIZE WINDOWS FOR EFFICIENCY
The majority of the windows on the project are fixed and sized to fit within the 24” structural bays of the framing. Larger openings with operable windows occur only where desirable for ventilation or required for egress.

The sloped roof allows more light to the back yard while channeling roof runoff to the permeable surfaces to be absorbed on site.
PATIO + GARDEN
optional build-out

CAR PORT
optional build-out

ROWHOUSE
primary project

ALLEY

site plan includes new 9 unit rowhouse block with two existing interior blocks and shared street

street tree planters with continuous root tunnels and subsurface irrigation

roof water cistern

permeable paver patio with subsurface storage

permeable paver trench with subsurface storage

permeable gravel subsurface water storage with underground injection chamber (UIC) to capture runoff from street

street tree planters

site plan includes nine (9) rowhouses total with the illustrated interior block shown hatched

future rowhouse build-out across North Bethel Street

one way alley traffic

vehicle turn-in / back-out

SITE DRAWINGS

SCALE: 1/8" = 1'-0"
The project is located in a region that often experiences high winds and requires the use of stucco or another form of exterior wall finish. The exterior walls are constructed with 2x6 stud framing and R-19 insulation to meet energy code requirements. The roof is a modified bitumen system with R-40 insulation and a 1-hour firestop at the roof-to-wall connection.

The building utilizes a rainscreen system for the exterior cladding, providing a gap between the cladding and the sheathing to help with moisture and air movement. The roof cladding consists of a PVC membrane with simulated standing seams that align with the underlying rafters. The exterior roof and wall systems are designed to maximize energy efficiency and minimize air infiltration.