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Small. Like, Really Small.

Washington Gets Its First Two Micro-Unit Apartment Buildings

by Ronald O'Rourke



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The Drake's use of yellow brick alludes to the similar masonry in nearby mid-20th-century structures, such as the Bay State Apartments in the left foreground, while horizontal precast concrete elements continue the key lines of the Air Line Pilots Association building at right.

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Projects: The Drake and The Harper, Washington, DC

Architects/Interior Architects: **Eric Colbert & Associates** Structural Engineers: **Ehlert Bryan** MEP Engineers: **CFR Engineering** Civil Engineers: **CAS Engineering** General Contractor: **Grunley Construction Company**



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Rapidly developing neighborhoods aren't the only parts of Washington where new apartment and condominium buildings are being built. They're also going up in established parts of the city, when occasional infill opportunities present themselves. In both types of neighborhoods, space can sometimes be limited, and per-square-foot property values can be high, which can encourage smaller living units.

It's not too surprising, therefore, that the booming 14th Street corridor and the well-established Dupont Circle neighborhood are the locations of Washington's first two micro-unit apartment buildings—the Harper, at 1919 14th Street, NW, and the Drake, at 1355 17th Street, NW. Both buildings were designed by **Eric Colbert & Associates** (ECA).

Micro-units are like efficiency apartments, but even smaller. Among developers and city planners, they are seen as the next big thing in urban multi-family housing—a new approach for responding to the growth in singleperson households, the desire of many (particularly young adults) to live in city centers, and the financial challenges of owning or renting larger living units in fashionable but expensive neighborhoods. Micro-units can be viewed as the downtown, multi-family cousins of the small individual residences that are being built under the Tiny Houses movement, such as the Minim House that was featured in the Winter 2013 issue of *ARCHITECTUREDC*.



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Photo courtesy of Eric Colbert & Associates

The design, regulatory, and social aspects of micro-units and other new approaches to housing were explored in 2013 in *Making Room: New Models for Housing New Yorkers*, an exhibition at the Museum of the City of New York that included a full-scale, fully furnished micro-unit measuring 325 square feet. One of the exhibition's information panels listed 17 U.S. cities with high percentages of single-person households. New York was number 17, with 32%. At the top of the list, with the highest percentage of all, was Washington, with 44%. Issues relating to micro-units were further explored in 2014 in a day-long conference at the District Architecture Center (DAC)—an event that attracted a standing-room-only audience.

With all the excitement (and debate) about micro-units, you'd think there would be a standard definition of the term, but that's not the case.

"There's no specific industry definition," said **Steven K. Dickens, AIA, LEED AP,** the project architect for the Drake (and a regular contributor to this magazine). "The larger of the standard units at the Drake and the Harper, at 420 square feet, wouldn't fit some peoples' definition. There are also regional differences based



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on expectations. New York has a lot of very small apartments, so there's a logic that a New York micro-unit is extremely small. In DC we don't have many very small apartments, so our [local] definition is a little broader and more flexible."

"I think what it boils down to," he added, "is that a micro-unit is a purposely small apartment, designed with care to function as effectively—to 'live as large'—as reasonably possible. In contrast, a very small apartment which just kind of ended up that way, or doesn't make much effort to function well, is just a very small apartment, not a micro-unit."

Although ECA has a lot of experience in the design of apartment and condominium buildings, the Drake and the Harper broke new ground for the firm.

"We had previously done some projects with very small apartment units, but they were gut renovations of small existing buildings," Dickens said. "The Drake and the Harper are the first sizable new-construction buildings that we've done with microunits—the first for which the term micro-unit was consciously part of the concept."

"We looked at various small-apartment designs," he added, "but most proved inapplicable. In New York, for example, they're doing a micro-unit building with loft beds. That's possible [for them] because they can have 11-foot ceilings, which is essentially a non-starter in DC due to the local height limit. If the Drake had 11-foot ceilings, it would be seven stories tall instead of nine."

To refine its design for a micro-unit, ECA employed an extraordinary measure in this day of computer-aided design—a full-size mockup.

"We designed a prototype micro-unit on paper, but our client for the two buildings, Keener-Squire Properties, felt it would be prudent to be sure that the small spaces worked before building more than 300 of them," Dickens said. "So we refined the design somewhat, and Keener's construction group then built a full-scale mockup inside a warehouse space in Manassas." The mockup "had almost everything that a completed apartment unit would have, including light fixtures, appliances, full-size furniture, even art on the walls and dishes in the cabinets," Dickens explained.



The Harper.

"We reviewed the mockup with Keener-Squire's staff and made small adjustments, shifting walls by a matter of inches, for example, to maximize functionality and efficiency," Dickens said. "The mockup was shown to the development finance and management teams, partly to prove that the apartments were livable, and partly to seek their input. Keener's leasing agents, for example, nixed the two-burner cooktop (which we thought would be acceptable for a micro unit) in favor of a 24-inch range."

In terms of space-saving design strategies, "I wish I could tell you of multiple ingenious designs that slide in and out or stow away, but there really aren't any," Dickens said. "In fact, there aren't even Murphy beds or a modern equivalent." Instead, "spaces are carefully sized at minimums for their function, based on tinkering with the mockup. For example, the bed areas are the size of a queensize bed plus 20 inches at either side and three feet at the foot."

As might be expected, the units make maximum use of potential storage space. "The kitchen cabinets are custom sizes, so there's no waste or no filler strips," Dickens said. "Bathrooms have fullheight linen cabinets in addition to vanities and medicine cabinets, and closets have a modular, customizable system." The units are equipped with numerous built-in light fixtures, reducing the need for freestanding lamps. The fixtures are mostly recessed so that they take up less space visually.

The Drake is a nine-story building with 218 units, about 70% of which are variations on ECA's micro-unit model. The Harper is a seven-story building with 146 units, about 85% of which are variations of the model. Both buildings include an additional penthouse level with shared amenity spaces, and the Harper has three street-level commercial storefronts. The project architect

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for the Harper was **J.B. Lallement. Eric Colbert, AIA**, was the principal for both projects.

Micro-unit buildings have some internal differences from standard apartment or condominium buildings. For one thing, "With such small units, the communal amenity spaces gain heightened importance," Dickens said. "If a tenant wishes to host a Thanksgiving dinner, it wouldn't really fit in their apartment, but they can reserve the private dining room, which has a full-size kitchen stocked with dishes and utensils and a table that seats 12. They can also use the lounge to host a sizable party or simply watch a TV much larger than the one that would fit in their apartment. There are also roof decks, a meeting room, and a business center."

Since each floor has more units than would be the case in a standard apartment building, the Drake and Harper incorporate a high level of acoustic separation in the floors, ceilings, and partitions between units. The floor slabs, Dickens said, "are like Swiss cheese, because there are so many penetrations for piping and conduit." In addition, "the units are at minimums for handicap accessibility requirements. As a result, the construction tolerance was about 1/16th of an inch, which is much more precise than standard construction. Concrete columns had to be located precisely, and be precisely the correct size. Hundreds of sleeves for plumbing and electrical risers likewise had to be located to fall exactly in the middle of walls. The general contractor, Grunley, employed the most modern techniques to ensure precision, including laser location devices and extra quality control engineers."

Both buildings were reviewed and approved by the Historic Preservation Review Board (HPRB). The Drake is built on a site previously used as a parking lot for the adjacent First Baptist



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Church. "The church retains 36 parking spaces in the Drake's new underground garage," Dickens said. "The church still owns the land; the building is on a 99-year ground lease. Income from the lease has stabilized the church."

"A passageway between the church and the Drake is used by the church for pickup and drop-off for services, for daycare, and as a plaza for picnics and other outdoor functions," Dickens said. "The portion of the new building façade along O Street, adjacent to the church, matches the ashlar stone and limestone accents of the church. This was required by the church so that visitors would intrinsically understand that the passageway and plaza belongs to the church. It's an impure solution architecturally, but it feels comfortable."

Elsewhere on the Drake's exterior, "the precedent for the massing and exterior design is, primarily, the Streamline Moderne apartment buildings, of which there are a half-dozen in the area, including the Bay State Apartments and the Massachusetts House Condominium, which are directly across 17th Street from The Drake," Dickens explained. "But we added a two-story base expression pulled directly from the adjacent Air Line Pilots Building, a high-modernist office building, and the Richmond Condominium, a post-modern apartment building." The result, he said, "is obviously a 21st-century building, but with equally obvious contextual cues."

The clients felt that the design "was on the flashy and modern side for their tastes and standards," Dickens said. "Nevertheless, they liked it and were very supportive about doing it right. For example, the brick that we used is on the pricier side, but Keener supported the concept of blending the yellow brick of the nearby Streamline Moderne apartment buildings with the greys and browns from the adjacent church. The windows are by Allan Windows. I selected them because the mullions are deeper than they are wide, with the glazing in the middle, which creates wider sightlines and stronger shadow lines."

The palette for the Harper's façade, Dickens said, "is drawn from the adjacent historic building, which was originally a bowling hall and is now a Matchbox restaurant. The massing steps back to relate to the scale of adjacent row houses on Wallach Place, the Matchbox building, and a historic building across Wallach Place."

The two buildings' most notable sustainable-design feature is a Variable Refrigerant Flow HVAC System, which Dickens said "is about 40% more efficient than the split-system HVAC commonly used in apartment buildings. I believe the Drake and the Harper are the first two buildings in DC to use it." Although its installation costs are considerably higher, "it reduces electrical loads so much that Pepco actually questioned our new service application! Our electrical engineer had to provide the calculations and specifications to prove to Pepco that a new building of this size could have such a small service."

"For most people, small-scale living is a sacrifice that requires balance," Dickens said. "They therefore require good location, space to 'live big,' stylish and high-quality finishes, and amenity spaces that can host functions that the unit itself cannot. They want hidden quality, too. For example, they focus on the value of the high acoustic separation between units."

The two buildings, he said, "are successful projects. The Harper was the first to finish, in March 2014, and its 146 units were leased in about five months, at an average rate of almost one per day. The Drake finished in October 2014, and its 218 units were 80% leased as of early May. Both of these figures are exceptional by industry standards. It's clear that, done correctly and in the right locations, there's a strong market for micro-units like these."