

As we emerge from a tragic pandemic, let's catalyze action among professionals in the fields that shape the physical housing and communities where we live. This series of case studies shares innovations that are advancing a set of **guiding principles** for built environment professionals—from creative ways to redress inequities and engage the public in participatory planning, to unique housing and community models that enable every resident to thrive.



Reproduced courtesy of Ryder Architecture.

Lifelong Housing in the UK: A Living Lab

Future Homes Alliance, Newcastle, UK

By Stephanie Firestone and Esther Greenhouse

Organizations in the UK are knocking down the door of the Future Homes Alliance to learn how they, too, can create values-based, lifelong and multigenerational housing. Frustrated with the dearth of housing that would allow them to age in their community, a group of people in Newcastle, England embarked on a multi-year process to build a housing development that reflects their values. Project catalyst Rose Gilroy expressed her group's impetus for action by saying, "We need to stop and have a bigger conversation about our homes—home as container for human flourishing instead of a capital-building resource." Thus, over a five-year period, the cohort recruited a variety of community and national stakeholders, secured funding, and created a design process that incorporated not only residents' personal preferences but another of the group's priorities: environmental sustainability.

aarp.org/equitybydesign

Needs/Challenges

In the UK—as in the US and many other countries, housing is designed for young, typically abled people; indeed, less than 7 percent of housing stock in the UK and less than 2 percent in the US has basic **Universal Design** features. Housing has also been built the same way for so long that consumers can only envision a narrow range of products. Rose Gilroy, a planning professor at the University of Newcastle and chair of the **City Futures Development Group**, wanted to create housing options for older people to be able to “rightsize” and believed the options created should be informed by people’s needs and desires as they age. The group of residents she assembled had several additional concerns. One was the dramatic increase in “**fuel poverty**,” or households that cannot afford to maintain a reasonable temperature in energy-wasteful residences and often must choose between heating and eating. Yet another was the potential impacts of the growing climate crisis and the increased frequency of extreme weather events, and thus the need to conserve energy and plan for resilience.

Innovations

This grassroots group—which formed a not-for-profit social enterprise in 2018 called **Future Homes Alliance (FHA)**—is initially developing a 66-unit complex. The group is intentionally targeting lower income households by creating rental properties, as opposed to selling the properties, which would favor higher income groups. In order to meet people’s needs across the lifespan, the design of buildings and units prioritizes not only Universal Design but also flexibility and technology use, as well as sustainability. The FHA innovations lie in both the product and the process.

A Lifelong Housing Community

A major driver of the project and FHA’s efforts is the desire to address segregation by age and housing type, by making rightsizing possible. FHA is doing so in two ways. First, it is building a community with a range of housing options. Early in 2022, they plan to start building 66 units, comprised of 54 one- and two-bedroom apartments and 12 houses of two-to-four bedrooms. Second is building housing capable of adaptation, so the unit can actually flex around a person’s situation as their life and needs change (as described below). This flexibility and range of options, enabling people to right

size within their community, considers not only life stages but also the evolving state of multigenerational households and definition of family. A community of various housing types addresses varying needs across the lifespan and makes intergenerational² living possible. Such a community includes shared spaces where people can do things together—for example, green spaces for socializing, play spaces for all ages, and small land allotments for community gardening.

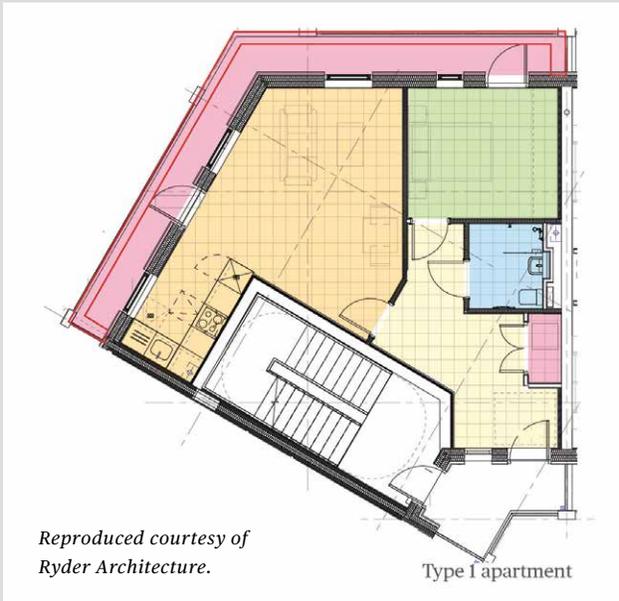
Designed for Now, Adaptable for Later

Through design that prioritizes a good fit between resident and home, FHA homes will be built to enable residents to live their fullest lives. Some Universal Design features are already mandated through building codes in the UK: electrical outlets and light switches must be within reach of a seated person, easing access for people of different heights; approaches to front doors at the same level or gently sloping, removing typical barriers for assistive devices such as wheelchairs or walkers, as well as strollers and bicycles; hallways sufficiently wide to turn using assistive devices or while carrying a laundry basket or a sleeping child. In addition, FHA will provide storage space within easy reach and design units to maximize natural cross ventilation and sunlight.



Reproduced courtesy of Ryder Architecture.





Reproduced courtesy of Ryder Architecture.

Beyond such features, units are being thoughtfully and practically designed for adaptation, so residents will not need to move every time their (or their family’s) needs change. All dwellings will be fitted with bathrooms capable of transitioning from rooms with bathtubs to walk-in showers. Two-bedroom units will have one en-suite room on each floor, allowing a person to live entirely at ground level, and movable internal walls will enable residents to change the size of spaces. **Exterior front and back walls will also be movable, enabling the home’s footprint to expand or contract, and blueprints will facilitate this expansion by strategically leaving extended perimeters free of underground services.** Should a resident’s mobility change, they would not be limited to one floor, since a straight-run and wide enough staircase will allow for the use of a stairlift. Additionally, the option to install a residential elevator will be designed in, by placing closets at the same location on every floor—to enable the creation of a shaft.

If a resident no longer needs a large unit, the association will first determine whether another resident or family needs a home of that particular size, in which case the current renter might move to a smaller unit. If no family is awaiting a larger unit, the property could be remodeled into smaller units. This flexibility is possible at all levels, not just on the ground floor.

The innovative nature of this project has drawn a high level of interest. In 2018, FHA received funding from the Newcastle Building Society to erect an installation at the Great exhibition of the North in Newcastle, which included augmented and virtual reality representations of the planned dwellings.

A Living Laboratory

FHA is designing the buildings and units for energy efficiency. For example, a “fabric-first approach” dictates that materials are selected based on air tightness with a high level of ventilation, so less fuel is wasted. The units will all include technology to monitor things like water and heating use, air quality, humidity, and noise, and to collect a variety of data on building performance to inform changes to the property as well as future models.

The FHA team will create an interactive tool and a print manual to teach residents how their home works and how it can help them to conserve energy. Such a tool might include an interactive drop-down screen in the kitchen or a user-friendly phone app, so residents can monitor their energy usage and make informed choices at home. Residents will also be surveyed at intervals to assess what informational elements they find beneficial and what things don’t work for them, providing additional data for future developments. The surveys are part of FHA’s efforts to avoid oversaturating residents with information, by evaluating what data really needs to be monitored. FHA hopes to secure funding for the technology to monitor energy usage.

Five of the housing units will serve as living laboratories for more enhanced monitoring systems, which industrial partners will install in order to test and receive residents’ feedback on a variety of services and products. For example, FHA is advancing a collaboration with the **John Walton Muscular Dystrophy Research Centre**, a clinician’s group that specializes in working with adults living with Muscular Dystrophy. One of the five units would help identify what fixes can best enable people with a progressive illness to live with ease in their homes—insights that would further the Centre’s interest in thinking beyond pharmacology and the clinic, and considering the home environment as an enabling space. Initially the unit would be redesigned to best meet the current and expected needs of a particular individual. Over time, the resident would provide feedback on their experience and inform substantial and subtle changes that can provide dignity for a person living with Muscular Dystrophy, while also considering others’ needs if the individual does not live alone.

Successes to Date

The Quadruple Helix

The **partnership** undertaking this effort is based on a quadruple innovation helix framework, wherein academia, local government, business and industry, and the community and nonprofit sector engage within a **knowledge economy**. Appropriately, therefore, FHA's first development (66 residential units) will be located in **Newcastle Helix**, a 24-acre mixed-use city quarter that is an innovation hub and collaborative ecosystem for public and private bodies. The 24-acre Helix development prioritizes pedestrians over cars, sustainable development, innovation, and technology—all to improve lives while providing work and lifestyle choices.



Reproduced courtesy of Ryder Architecture.

FHA has recruited a multi-sector group of partners and funders. These include Karbon Homes, a social housing provider that will invest its own capital and has access to public funds through **Homes England (thus also a partner, indirectly)**, a branch of the UK government that supports the development of housing for lower-income groups and seeks innovative models that can be replicated nationwide. Karbon will also pay for ongoing expansion or remodeling that a family needs over time as part of their management and maintenance costs, which are included within the monthly rent. Other partners are Ryder Architecture, Newcastle University, Elders Council Newcastle, Legal & General, Zero Carbon Futures, the Sustainable Communities Initiative, Innovation Super Network, and the Newcastle City Council.

Multistakeholder Input

In order to develop person-centered specifications for housing that meets people's needs and desires, FHA solicited numerous perspectives through 17 design workshops spanning 600 hours of citizen time. The series of activities was facilitated by Ryder Architecture and funded by Newcastle University and Legal & General, a legal and funding partner of the Helix development.

The first in this series of workshops targeted community health professionals including Occupational Therapists at the **Royal College of Occupational Therapists (OTs)**. OTs are usually brought in only at a point when a person and their environment are no longer compatible, and the OTs commented that nobody had ever before asked for their expertise to inform a building project at its inception. FHA also conducted workshops with a variety of professionals who work with: adults with disabilities, families with autistic children, and older people—through the **Elders Council Newcastle**.



Reproduced courtesy of Future Homes Alliance.

FHA developed critical insights from these diverse workshops, such as recognizing that the home is not only a physical space but a sensual one. For example, for people on the autism spectrum, the quality of light can affect the home's ability to serve as a retreat from sensory overload (e.g., colors, noise). Because of the insights generated through engagement with these diverse stakeholders, FHA redoubled its commitment to proactively seek knowledge from these and other end-users to bring to the table and inform the design.

Still to Come

In 2020, FHA received planning permission, went to tender (the bidding process), and selected the contractor for this first development. They have conducted the required archeological survey and narrowed roads where needed, and the Helix partnership will pay for a necessary sewer diversion. FHA is hoping to break ground at the start of 2022, with completion projected to come approximately 70 weeks later, in May 2023.

Replicability

Other towns in the region have approached FHA about utilizing their “future homes” methodology, which is adaptable beyond the region or even the UK. Business consultants in the Northern Accelerator, a network of universities and consultants looking to promote business development and growth in the region, helped FHA to develop a business plan that includes extracting value from their intellectual property. FHA is developing a future homes methodology platform around the processes, such as the continuous iterative monitoring and feedback loops discussed above. They will also create a person-centered guidebook that can be used to develop similar projects in a variety of settings. Gilroy also envisions FHA consulting with developers, local authorities, or housing groups who want to bring in multiple voices beyond the typical stakeholders—all toward creating better options for people to age in their communities and achieving better social, economic, and environmental sustainability.

For more information:
www.futurehomesalliance.com

¹ UN, Department of Economic and Social Affairs, Population Division.

² Intergenerational living refers here to built environments that facilitate engagement across generations, as opposed to multigenerational living, which merely indicates that people of all ages live in a certain place.