Alternative/Niche Developments
Of the Future (2030)
Senior Living and Medical Concepts

KGD Architecture

Meyer

Ware Malcomb
To successfully develop senior living and medical facilities for the future, real estate professionals must embrace three megatrends and create communities that support populations in new ways.

The Silver Tsunami
Just over the horizon, the so-called “silver tsunami” is gathering force. By the year 2030, about one-fifth of the U.S. population will be 65 or older. This burgeoning senior population of 72 million will require age-adapted housing and medical facility options that currently do not exist. In the blunt assessment of KGD Architecture, “the current state of senior housing in the United States is not prepared for the next 20 years of population growth.” Meyer concurs, noting that “there will be a growing need for lower-to-middle-income living communities for the increasing number of seniors [who] will need an affordable place to live.”

The Youth Boom
In the same time frame, a “youth tsunami” is coming, as the number of young people and children in the U.S. swells to an estimated 80 million by 2030. Taken together, by 2030 these two age groups will make up approximately 40 percent of the U.S. population. “The architecture and building industries need to realize this fact and work toward developing building types that will be able to sustain these expanding demographics,” asserts KGD.

Disruptive Technologies
With the working age population making up a smaller portion of the U.S. population by 2030, new approaches will be necessary to accommodate the needs of more dependent populations like seniors and children. To meet at least some of the needs of these two population groups, technology will assume an even larger role in people’s everyday lives. As Ware Malcomb notes, “rapid advances in medicine and technology, global adoption of social media, and increased ‘consumerism’ by the general populace are a few of the trends affecting health care providers now and well into our future.”

Always-on smartphones and other connected devices like heart-monitoring implants, smart refrigerators and fitness monitors will collect and transmit real-time data about an individual’s health to medical professionals via the Internet of Things. Telemedicine will deliver consultative care to people at any location with Internet access, with an emphasis on preventative rather than prescriptive care. In medical offices, ubiquitous 3-D printers will provide a wide variety of customized tools, tissues and molds on demand, reducing the need for storage space. Robots will collect specimens and deliver them to drones for transport to off-site labs. Medical office facilities of the future must be designed to embrace these disruptive technologies.

During the summer of 2015, NAIOP conducted a design competition in which it sought concepts for the Niche Development of the Future. NAIOP invited architects to submit a vision/concept plan in a niche category like “senior living” and “medical office.” An independent panel of judges evaluated the submissions against an objective set of criteria and selected three winners. Each winning firm presented its concept on October 14, 2015, at NAIOP’s Commercial Real Estate Conference 2015 in Toronto, at a session moderated by Dale Dekker, AIA, AICP, founding principal and architect with Dekker/Perich/Sabatini in Albuquerque, New Mexico.

The winning firms are KGD Architecture, Arlington, Virginia; Meyer, Ardmore, Pennsylvania; and Ware Malcomb, Irvine, California. Presentations made by the winners at NAIOP’s Commercial Real Estate Conference 2015 are available at www.naiop.org/CREC15resources.
A majority of seniors say they want to “retire in place,” but an opposite and isolated fate might await them. KGD Architecture’s submission contends that older people who become unable to live safely in their current homes are often “shipped off to a nursing home or elderly care facility. Many of these facilities today are located out in the countryside or in suburban areas in a misguided attempt to give the aged a peaceful location to relax in.”

Seniors living in these facilities are often displaced from their families and friends, in locations far from public transportation, shops, entertainment and health care facilities.

The solution, according to KGD, lies in the creation of deliberate intergenerational communities on smaller infill sites in urban and suburban locations. “Design for an aging population does not mean specific and isolated facilities or initiatives tacked onto existing designs, but rather integrating quality and inclusive design into daily life and the urban fabric that will last over time.”

KGD’s concept for “an affordable elderly housing community that seniors will actually want to live in” comes alive in Aria, an infill project envisioned for Silver Spring, Maryland, a recently revitalized urban area in suburban Washington, D.C., with a thriving business district and an increasing, dense ring of multifamily housing. A pedestrian-friendly neighborhood and access to public transportation meet the needs of seniors with mobility limitations. The location enables seniors to remain in an area with an already diverse population of race, economic status and age. The concept includes three mixed-use residential buildings set around a courtyard.

Family Building Program
An existing multifamily building is redeveloped into a combination of market-rate and affordable housing, above lower floors that serve as an arts and technology haven. Medical offices, a medical lab, a digital media lab and an arts-focused restaurant and dance studio all are open to the public, providing areas where seniors can interact with the broader community.

Senior Building Program
A new multifamily building contains apartments for seniors — Aria’s senior living component — and public wellness areas. The apartments range in size from 730-square-foot one-bedroom units to 980-square-foot two-bedroom units. Each features an efficient, open floor plan as well as universal design elements like wider doorways, nonslip flooring and pull-out shelves. Wearable monitors use technology to track residents’ health in an unobtrusive way that integrates health care services into the home while maintaining seniors’ independence and dignity. The smart building also tracks energy and water usage by residents, appliances and building systems.
On the lower levels, a lobby lounge offers social opportunities for residents. A public wellness center provides on-site access to health services, while a recreational/fitness center includes a series of pools, weight rooms, walking loops and classrooms.

**Millennial Building Program**

A new building offers market-rate and affordable apartments for families of all ages. The ground floor is energized by a variety of uses. Designed to foster intergenerational curiosity, a children’s museum anchors the space and serves as a learning center for young and old. Visitors and residents can also enjoy a ground-floor café with outdoor seating.

**Aria: The Public-use Courtyard**

At the heart of the project, KGD has positioned a one-acre courtyard (the “Aria”) as a large public-use space. The Aria includes active areas like a performance amphitheater and the café’s outdoor patio. Other uses are more contemplative, like quiet gardens with bird and butterfly habitats, shaded seating and chess tables. The concept of the intentional community is apparent in the courtyard, where isolation can be replaced by social interaction among people of all ages.

**Building Sustainable Systems**

Aria is designed to create a healthy environment for residents while also minimizing its impact on natural resources. In the senior living building, a green roof functions as a garden terrace, where residents can cultivate herbs, vegetables and fruits. Exterior and interior green wall systems help to maintain air purity throughout the building, as well as regulate humidity. The net result is less demand on mechanical HVAC systems. Beyond their pleasing natural aesthetic, the lush interior plantings absorb sound, reducing noise levels throughout the building. An on-site treatment plant collects gray water and rainwater to irrigate the green roof, green walls and exterior landscaping.

Energy production systems are also located on the rooftop. Photovoltaic panels and microturbines capture energy from the sun and wind. This offsets the energy used to produce hot water for the community (typically 30 percent of a multifamily complex’s total electrical use). The system also has the capacity to return electricity to the grid, in effect allowing Aria to function as a micro-utility, supplying clean energy to others and contributing to the welfare of the greater community.

**Aria Project Data**

This 1 million-square-foot mixed-use project is comprised of three buildings around a one-acre public courtyard.

**Family Building**
- 296,389 square feet
- 15 stories
- 300 affordable and market-rate apartments
- Medical offices and other facilities on lower floors
- $32 million renovation

**Senior Building**
- 348,174 square feet
- 15 stories
- 277 apartments for independent seniors
- Lobby lounge and public wellness center
- $66 million new construction

**Millenial Building**
- 379,900 square feet
- 20 stories
- 330 affordable and market-rate apartments
- Ground-floor children’s museum, amphitheater, café
- $74 million new construction

A multigenerational, mixed-income development, Aria will provide affordable senior housing, community spaces and both affordable and market-rate apartments for families.
The addition of elevators, active courtyards and community spaces throughout each floor can transform sturdy older garden apartment complexes into affordable housing for seniors.

The apartment market is experiencing strong demand and the most accessible funding it has seen since 1980. However, four- to five-acre development parcels are getting harder to find. This scarcity is driving up the price of land and making it unprofitable to develop projects like new senior living facilities, according to Meyer.

As millennial renters move to newer, more upscale apartments or become homebuyers, Meyer contends that “garden apartments will be the losers, especially older, three-story walk-up garden apartments.” The architecture firm perceives this challenge as an opportunity to develop senior living facilities in these aging apartment complexes, citing a growing need for housing that lower-to-middle-income seniors can afford. Many older garden apartment complexes are comprised of dated but sturdy brick buildings located in what Meyer calls “urban/suburban” locations, near services and infrastructure that seniors need.

Meyer believes these older garden apartment complexes can be transformed into senior living facilities. “In order to keep the aging population in their current neighborhoods, as well as provide a safe, healthy and stimulating place to live, Meyer’s Big Idea is to repurpose these old, three-story garden apartment complexes into Continuing Care Urban Communities,” the firm explains. The complexes could also provide market-rate housing units for younger people and those who work as caregivers to the elderly.

Existing apartment complexes typically do not require land development, zoning or town approvals, which increases their speed to market and helps these projects to pencil out. Utilities are already in place. Giving the buildings a face-lift can achieve “a big impact, for not a lot of cost,” contends Meyer. A rainscreen system reclads the exteriors, improving curb appeal while utilizing the existing core and shell. In some cases, the brick facade can support a new fourth floor. The ability to reuse 60 percent of the existing

Independent living apartments are located close to the Amenity Center, which houses a fitness center, indoor pool, bistro, community room and more.
building and site work represents another large savings.

Meyer recommends renovating the in-place structures in phases, to maintain income from the property. Once renovated, the units will bring in higher rents to cover the costs of care and services that will be provided in other elements of the project.

**The Continuing Care Urban Community**

Meyer demonstrates how the concept would work by using an existing garden apartment complex in Upper Darby, Pennsylvania, outside Philadelphia, as a case study. Built in the 1960s, the complex contains 300 units, with one parking space per unit.

Three of the existing buildings in the redeveloped Continuing Care Urban Community (CCUC) complex contain apartments, including studio, one-bedroom, one-bedroom large, two-bedroom and two-bedroom large units. To meet residents’ needs and allow them to “age in place,” a range of support services are available, from independent living to assisted living to “assisted living plus.” The design concept also sets aside one-third of the CCUC’s units as market-rate apartments, to encourage caregivers to live in the community they serve.

Each apartment building is sited around a different type of courtyard.

In the “Fun” courtyard, residents can engage in activities like golf, bocce and shuffleboard. The “Reflective” courtyard offers a garden experience and the “Relax” courtyard features a fire pit and tiki bar.

**The Life Center**

A four-story building comprises the Life Center, where residents can access a state-of-the-art clinic plus an on-site pharmacy and other medical services. Upper floors contain classrooms, a bistro, lounge and dining area. These amenities are open to the public, to promote social interaction among seniors and the surrounding community. Connected to the Life Center is the Rehab Wing, with units for short-term rehabilitative care, nursing stations and lounges.

**The Amenity Center**

Recreation options abound in the Amenity Center. The first floor comprises a fitness center, a game room and an indoor pool bordered by a winter garden. On the second floor, seniors can enjoy an art studio, computer lab, general activities room and dining area. The third floor houses a theater, spa, beauty salon, lounge and pizza kitchen.

**CCUC Project Data**

- 342,460 square feet, including Life Center and Amenity Center
- 300 affordable and market-rate apartments
- Total estimated design and construction cost (does not include the cost of land and existing buildings): $35,292,000

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To improve curb appeal, existing brick facades are updated using a rainscreen system. Panels of fiber cement siding and metal “hat-channel” attach to the existing core and shell in an attractive, waterproof wall cladding treatment.
Rapid advances in medicine and technology are transforming how and where people maintain their health and, when necessary, receive medical care.

Wearable devices provide real-time data both to wearers and health care providers. Everyday objects like refrigerators and chairs with network connectivity will create an Internet of Things that can track a person’s choices and preferences — and interpret them to create preventative and prescriptive care programs. Gene therapy can now identify trouble at a molecular level, early on, and devise individualized treatment options.

When diagnosis is required, it might be delivered via telemedicine, with virtual consultations through apps, or at microclinics or kiosks, near where a patient lives or works. Health care services will be diffused throughout the community, not just available at dedicated facilities. “Mobile technology will be built into moveable equipment, not the structure,” predicts Ware Malcomb.

The firm expects these technological and medical advances to change how traditional hospital services are delivered. “Acute care hospitals remain, but shift to treating complex cases of disease or trauma,” explains Ware Malcomb. In place of the traditional hospital, the design firm envisions a new kind of health care facility. Its Mixed-use Medical Campus “is a place that promotes the nourishment of the mind, body and spirit.”

This translates into a facility with spaces for education, medical consultation and treatment, fitness activities and more.

Body Nexus
In the Healing Center, patients receive consultation and treatment in a collaborative environment. This area includes medical offices, clini-
cal support services and a medical procedure unit.

"Remote data collection, along with increased reliance on virtual consultations will reduce the need for space dedicated to examination rooms," explains Ware Malcomb. But "additional space will be required for team collaboration and telemedicine."

In procedure areas, digital transparent screen technology will allow medical information to be shown to the patient as well as shared among medical personnel during remote telepresence meetings.

Technological advances will also affect radiology space needs, as hand-held microimaging devices will reduce the need for large radiology equipment. A wide variety of customized products — ranging from tissues and molds for joints, to sterile case items like stents and tools, to disposable items — will be created as needed using 3-D printers. As a result, storage needs will be reduced.

**Mind Nexus**

The Education Center houses the education, behavioral health and administration components of the Mixed-use Medical Campus. It features individual and group therapy rooms as well as classrooms and a larger community hall, which can be used for meetings and special events as well as educational activities like demonstrations of nutritious cooking.

**Health Nexus**

With an emphasis on maintaining health, the Wellness Center contains a fitness facility in spa-like surroundings. Visitors can take advantage of a rock-climbing wall and access both indoor workout areas and outdoor space for activities like yoga and tai chi. Health-related retail space is located on the ground floor.

**Spirit Nexus**

Connected to the rest of the campus by a skywalk, the Spirit Nexus comprises the “sanctuary component.” On the upper level, a juice and herbal tea bar with a canopy deck offers refreshments and anchors the open-air observation prow. One level down, a meditation deck provides a quiet space overlooking a water garden and reflecting pool, as well as additional meditation areas.

The four elements of the Mixed-use Medical Campus can be constructed in a phased manner and are designed so that each component can operate autonomously. Says Ware Malcomb, “This allows for flexibility to incorporate components as budget and context permits.”

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**Mixed-use Medical Campus Project Data**

- Mind Nexus: 42,325 square feet
- Heart Nexus: 16,825 square feet
- Body Nexus: 53,575 square feet
- Spirit Nexus: 1,175 square feet
- Total estimated cost: $45,880,000

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