Home not Hospice
an integrated community for young and old in Old Town Alexandria, Virginia

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architecture, accessible design, assisted living, housing, mixed-use, urbanism.
The following thesis presents the design for a housing complex. The complex provides homes for two different segments of our population: single families and older or disabled persons and couples.

Located in Old Town Alexandria Virginia, the project sits on the banks of the Potomac River.

The question of integration is central to this thesis. The first design challenge is to integrate the older persons and persons with disabilities into the community. Successfully done, this will prevent the sense of separation and isolation that can often result when people’s physical limitations restrict their access to the world around them. The second design challenge is to integrate the complex itself into an existing, homogenous Old Town Alexandria neighborhood.
Strict zoning laws have kept Old Town Alexandria a densely populated city with a mix of residential and commercial development. The complex’s proposed site is unique to Old Town in that it is an undeveloped segment of the waterfront that is also opposite a large public open space. The relationship between these two spaces became very important to the development of the final design for the housing complex.

The site formerly served as a port where goods were loaded on and off ships from an adjacent railroad. Remnants of the old docks still remain along the water’s edge. Although all of the train tracks have been removed, the old train tunnel that cuts through the hill to the west remains. It is now a pedestrian path.

This location is ideal for individuals with disabilities. It is four blocks south of King Street, which is the major retail/restaurant corridor in the City. The nearest grocery and pharmacy is just three blocks east through the pedestrian tunnel.

Location
Union Street, which passes just to the west of the project site, has traditionally served as the boundary between residential and small scale commercial neighborhoods to the west and industrial development along the water’s edge. The photographs (right) show that even though the industrial tenants have left, their buildings remain and in most cases limit access to the Potomac. Directly to the north and south of the site, large upscale townhouse communities have replaced the older industrial structures, but they have made almost no concessions to relieve the barrier to the water. In fact, many of the few new openings are clearly labeled for “Residents Only.”

The figure ground map (far right), shows that the design’s proposed footprint covers as little of the site as possible. By elevating the apartment wing, a physical and visual link has been maintained between Old Town and the Potomac River. Building only on the edges of the site, the old harbor remains intact.
These schematic studies explore possible arrangements. The final design most closely resembles the fourth scheme but also borrows from the third.

Two drawbacks to the “L” shaped plan were that it blocked access to the water, making it a totally private space, and that it did not allow the building actually to touch the water. From the beginning, the idea of a pier and of a structure physically extending into the water were very compelling. Of course, the pier arrangements also limited public access to the water. They not only extended into the harbor but they also filled it.

Inspiration for a solution came from Le Corbusier and projects like his Unité housing complex on the outskirts of Marseille. As an extension of “le plan libre,” free plan, he elevated his structures on large columns allowing nature to flow underneath. By combining Corbusier’s idea with the “L” shaped plan, it became possible both to preserve the harbor as an open space and to allow public access to it.

Elevating the apartment wing along Union Street allows the creation of a public stairway that goes directly into the water.
In this early design scheme you can see a number of ideas that carried through to the final design.

The central atrium dominates this design, providing room for circulation and a semi-public space for residents. The units open onto both the outside and inside atrium.
The plans of the individual units as well as the units' arrangement along the atrium are similar to the final design. A variety of different spaces that correspond to the different units break the monotony of what would otherwise be a straight and possibly disorienting hallway.

Finally, the elevation reveals the interior articulation of the individual units.
The first plan (top right) shows an attempt to create a more dynamic space under the apartment wing. Circular terraces are cut out to allow for spaces that could be used for public markets or gatherings of various sizes.

The second plan (bottom right) shows the removal of all columns under the apartment wing and spanning the distance with a large truss.

The size and character of the space underneath the apartment wing was not easy to determine. Even though the idea to elevate the wing was inspired by Le Corbusier, I also realized that this aspect of his designs was not always successful. Many poor applications of this idea have resulted in the disruption of public life around a building’s base.

After looking at the height of the space in both sketches and a model (following pages) it became apparent that the higher the space the better. This has the benefit of not only making the immediate environment more hospitable but it also makes it easier for the surrounding community to have a visual link to the water.

The axon also shows how earlier column bases were more like real extrusions of pile caps.
Alternate Axon/Section through Apartment Wing
The elevation of the apartment wing became more conservative as the design evolved.

Early elevations (top left) maximized the free plan by knocking out whole or parts of units. Later, I considered totally freeing the lower space of support (middle left). Finally, something close to the final design emerged (bottom left) but even from here the column arrangement and end conditions needed to be refined.

The axon (right) looks at a possible solution for the joint where the two wings meet. At this early stage you can see how the end is differentiated by relying on thick walls for structure as opposed to a concrete frame.
There are two wings to the complex, the East, which contains 48 assisted living units and their support facilities, and the South, which contains 20 single family apartments, perched on top of 37 foot columns. The elevation of the apartment wing allows for pedestrian access to the Potomac, which will be discussed in more detail later. The two wings meet at a joint that contains shared elements such as the main entrance and lobby, fitness and activity rooms, and a restaurant and roof-top cafe.

The siting and arrangement of the complex allow access to the river from Old Town Alexandria. To the south of the complex is a community garden for both the new complex and existing Old Town residents.
The apartment wing is constructed of sitecast concrete. The ends of the wing are anchored, to the south by a masonry structure that contains the service elevator and fire stairs, and to the north by the joint, which is also masonry and contains public elevators, an additional stair, and access to the shared amenities.

Not only is the idea of elevating the wing borrowed from Le Corbusier but the actual layout of the units is as well. One central hallway provides access to all levels of apartments. Light is brought into the hallway at each end and throughout via small skylights. The units are all two levels. Each has a view to both the east and the west, and a balcony facing the park or the water.

The columns here are classically inspired. They are also hollow to allow the passage of both waste and water from the building into the ground. Utilities run horizontally through a crawl space under the floor of the lower level of the apartments.

The steps into the water can be seen here. Note that the bases of the columns are extrusions of the caps on the pile footings below. Empty bases, the tops of which are at the 100 year flood level, continue into the water. During normal circumstances the water level will be confined to the lower two flights of steps, but it will not be uncommon for all of the steps to be covered during flood conditions.

Like the columns of an ancient temple or agora, the columns and steps in combination are intended to provide a place for people to congregate.

The columns are made of poured concrete. The base and capitals are formed by stamped sheet metal while the tapered shafts are board formed.
On the east elevation you can see that the upper apartments have the balcony. The bedrooms are behind the framed windows on the upper level. There are actually four apartments between each set of columns, two on each level. One solid party wall extends up from the midpoint of the span while a hollow wall extends up above the columns. This chase allows waste and water to be transported into the hollow columns.

The balcony railing and windows for the bedrooms are precast concrete and span one entire apartment.

The plans show how each apartment is arranged. The apartments are entered through the common hallway on the second level. Here, there is a living room closet and half bath. By taking the internal stair a resident will either go up or down one level to the kitchen, dining area, full bathroom, two bedrooms, and large storage closet.
The assisted living wing has three floors of units. On the north side is a central hallway and ramp that goes between all three floors.

This wing relies on masonry walls for structure. Concrete floors span between the walls.

The hallway and ramp are glassed in to form an atrium that allows as much light as possible into the corridor. To bring additional light to the first floor, openings are cut into the third and second floors.

Again the ends are punctuated by masonry structures containing elevators and stairs. The very eastern end of the wing, overlooking the Potomac, has a fully glazed lounge for residents.

There are three different sizes of units: one bedroom with den, one bedroom, and studio. There are 6, 24, and 18 units of each respectively. This mix will allow a range of people with different space and economic needs to live here. The units are of a fixed length but vary in width from 20 to 32 feet. All units have the same size bedroom, bathroom, and storage area. Only the more public spaces vary.

Each unit has windows to both the south (harbor) and the north (hallway). This allows residents to be visually connected to both their immediate community and the large one outside. The interior windows to the atrium also allow for passive cooling and heating.

The entrances into the units are set back from the main hallway. Their widths are also varied depending on the size of the units. This variation combined with niches in the masonry walls and planters provide visual relief to the long hallway. There is also the opportunity to customize the entrances to make them easier to find for residents with dementia.

Looking at the south elevation (left) you can see that the façade has a modular layout. Laminated panels that are either whole or part of a 4’ by 8’ sheet form the solid part. The windows, which are all standardized, complete the façade. The windows are a combination of sliding, hinged, and inoperable. The masonry walls extend through and above the wall, thus articulating the units and providing a fire break.

The north elevation and ramp behind it (following pages) both rely on the masonry walls for structural support. The façade is made up of glass following the same 4’ by 8’ module. At intervals the façade is punctured by balconies that correspond to landings on the ramp behind.
Partial Floorplan of Third Level of Assisted Living Wing

Section through Assisted Living Atrium

Detail of Interior Elevation
Partial North Elevation of Assisted Living Wing
From the beginning of the thesis, I wanted to know how a building designed for a specific use could accommodate that function as well as a wide range of other people and activities. Older people and people who are mobility impaired have very specific needs. These needs, however, often lead to the construction of exclusive, isolated buildings that can compromise the overall quality of their lives.

This complex successfully meets the needs of a wide range of users. The structure houses apartments suitable for both individuals with special physical needs and small families. Amenities are accessible to and shared by all residents. The two wings of apartments frame the rest of the site, which becomes a unique public space for the residents of the complex and Old Town Alexandria alike. Sited on the only public stretch of waterfront on the South Side of Old Town, the project is open to the river providing a place for everyone to enjoy.
Note:
All scanned pages and photos are by the author unless otherwise noted.

References:


EDUCATION

Master of Architecture
Virginia Polytechnic University/Washington Alexandria Architecture Consortium,
Alexandria, VA, 2001

B.S., Landscape Architecture
Cornell University, Ithaca, NY, 1995
Denmark’s International Studies Program (Design), Summer-Fall, 1994

EXPERIENCE

GC/a, Arlington, VA, 2001-present
Intern Architect
Provide assistance with the design, development and implementation of projects for a small firm specializing in residential architecture.

Horticultural Fellow
Participated in an annual program designed to be a hands-on learning experience focused on the importance of selection and maintenance of plant material to the design of formal gardens.

Geographic Information System (GIS) Developer
Applied for and received a grant from the Stanley Smith Horticultural Trust to begin the design and implementation of a garden-wide GIS. The project includes the design and population of databases, digitization of various garden plans, and the creation of components in the ArcView GIS software program. I am also responsible for training the staff in the utilization of the GIS.

Student Intern
Provided support for a variety of architecture and planning projects. Used Photoshop and Pagemaker to produce project brochures and presentation graphics, made redline corrections using AutoCad, and built site models.

The Onyx Group, Alexandria, VA, 1996-1997
Project Manager/Planner
Managed the development and implementation of a $1 million electronic master plan/GIS for a Military Research Base in Orlando, Florida.

Assistant Marketing Coordinator
Prepared answers for RFPs and RFQs, helped coordinate with potential team partners and subcontractors, and prepared various graphic marketing materials.

Landscape Designer
Helped design a few small projects including terraces for a retirement village and entrance/parking for a regional post office.