Light and the Urban Form

Eisenhower Metro Center

by

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Abstract

Americans are going through a radical change in how they build cities. Urban areas across the nation are growing with multiple cores called "Edge Cities." These new centers do not look like our old city downtowns where buildings stood side by side, but rather their low broad outlines dot the landscape like cattle along a forged trail.

These office towers, frequently guarded by trees and moats of asphalt peer at each other from respectful distances through reflected bands of glass. On the fringe of the modern city, these displaced spores sprout without relationship to any existing organization, other than the serpentine ribbon of looping, sprawling highways.

The formation of spaces rather than the formation of objects is a strategy I explore in the "Eisenhower Metro Center" to combat today's urban sprawl. Architect Steven Holl suggests, "The expanded boundary of the contemporary city calls for the synthesis of new spatial compositions. An intensified urban realm could be a coherent mediator between the extremes of the metropolis and the agrarian plain."

Within the scope of my thesis project I hope to define a new synthesis of urban life and urban form. Program, quality of light, and movement will become form generators of this new "Urban Edge."
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Location

Alexandria is on the southern tip of the 10 square mile diamond plot of land that traces the territory Pierre L'Enfant planned for our Nations Capital.

The King Street/Eisenhower Avenue Area is located in the southern section of Alexandria. The area is bounded generally by Bluestone Road on the west, Interstate 95 (Capital Beltway) on the south and West Street and Hooff's Run on the east. The northern boundary is composed of the RF&P Railroad tracks, Callahan Drive and Cameron Street.

The King Street/Eisenhower Avenue Area is composed of two major potential development areas, each containing a transit station.

Eisenhower Avenue Sub-area

The Eisenhower Avenue Metro Station precinct is located south of Duke street and is bound by West Street to the east, the Capitol Beltway to the south and Bluestone Road to the west. The Eisenhower Avenue sub-area contains 316 acres excluding streets and is therefore eight times larger that the King Street area.

For most of its recent history, the Eisenhower Avenue area was in the Cameron Run flood plain and therefore subject to periodic flooding. Through the 1960's and the 1970's the marsh areas were used as a landfill bringing the elevations up to 15 to 20 feet above sea level.

With the Cameron Run flood control and channelization project completed during the late 1960's and early 1970's, the area became suitable for commercial development. The Hoffman Center, consisting of 1 million square feet of office space, was built between 1968 and 1972. Other commercial development was to follow during the late 1970's and 1980's.

Public agencies have also found the Eisenhower Avenue area suitable for development. The city chose to locate a Metro station on Eisenhower Avenue next to the Hoffman Complex and built its Public Safety Complex along Mill Road. The Washington Metropolitan Area Transit Authority built a metrorail service and inspection yard and a facility for its revenue collection operations south of S. Quaker Lane and east of Bluestone Road.

Proximity and exposure to the Beltway, the availability of large vacant sites, buildings with ample parking and less expensive rents compared to downtown Alexandria locations, are all factors which have attracted tentatively medium density, "back office" space, flex space, Government office users and warehousing to the Eisenhower Avenue area.

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What has not as yet been attracted to the area, however, is a mix of uses. There are no residential or retail uses near the station and few, if any "high end" office buildings. In fact, thus far the Metro Station has generated little if any development which takes advantage of the Eisenhower Avenue Station.

Changing conditions, however, will reduce Eisenhower Avenue's isolation from nearby developed areas and create opportunities for metro-related, mixed use and higher quality development.

**Planned Development**

The Oliver T. Carr Company, a large Washington developer which has been actively involved in the King Street Metro Station area, has formed a joint venture with the Norfolk Southern Corporation to develop a 76.5 acre site located between the King Street and Eisenhower metro stations and containing the Alexandria scrapyard and Norfolk Southern's railroad trackage and yard.

The CNS proposal, is located on 75 acres of land and their plan envisions 4.2 million square feet of office space, 1.8 million square feet of residential space, 300,000 square feet of hotel space, 375,000 square feet of retail and 4,500 square feet of day care. It is projected that the project will be built over the next twenty years.

The Hoffman Center is a 40 acre site located between the Beltway, Telegraph Road and Mill Road. The Department of Planning and Community Development, City of Alexandria, Virginia has accepted a proposal for 3.5 million square feet of office space, an 800 room expansion to an already existing 200 room hotel, 150,000 square feet of retail plus 750 residential units. This program was the embryo of the Eisenhower Metro Center.
Site

Eisenhower Metro Center is located within the Eisenhower corridor in Alexandria, Virginia. The site is in the northeast corner of Telegraph Road and the I-295 interchange on the Capitol Beltway that encompasses Washington, D.C.

Project

For these are not as they might seem to be, the ruins of our civilization, but are the temporary encampments and outposts of civilization that we - you shall build.

John Cheever 1978

City centers are deteriorating and on the path to abandonment as a result of "suburban flight". Urban designers have been preserving these dead centers by respectful, often historical insertions. After breathing new life into downtowns, one may ask if this shouldn't be a starting point rather than an end result? Designers begin cultivating the latest frontier, "Edge Cities."

But...how can man withdraw himself from the fields? Where will he go, since the earth is one huge unbound field? Quite simple: he will mark off a proportion of this field by means of walls, which set up an enclosed finite space over against amorphous, limitless space...For in truth the most accurate definition of the urbs and the polis is very like the comic definition of a cannon. You take a hole, wrap some steel wire tightly around it, and that's your cannon. So the urbs or polis starts by being empty space...and all the rest is just a means of fixing that empty space, of limiting its outlines...the square... This lesser rebellious field which secedes from the limitless one, and keeps to itself, is a space sui generis of the most novel kind in which man frees himself from the community of the plant and the animal...and creates an enclosure apart which is purely human, a civil space.

Jose Ortega Y Gasset
"Make no little plans; they have no magic to stir men's blood."

Daniel Hudson Burnham 1902

The Eisenhower Metro Center creates an "urban room" as a refuge for pedestrians within a dense urban fabric: a medieval precedent. An investigation of proposals for the Eisenhower Corridor revealed a lack of any significant civic space for the thousands of people who will gather here to spend the better part of their lives.

A series of office buildings create a protective wall separating the public room from the Capitol Beltway while allowing sunlight to penetrate to a series of shared interior courtyards. The north edge consists of three forty-five story residential towers creating apertures for light to illuminate the urban fabric. Each tower is divided into vertical neighborhoods that open onto a shared four story communal atria.

These towers are linked together by a series of bridges which consist of distinct functions: entertainment, fitness and information. The "information bridge" creates a portal which frames the Masonic Temple (a city landmark to the north) and the entry of the metro line. The metro line is engaged by a grand stair composed of retail terraces linking galleries horizontally to both sides. The office tower, a node from which other buildings may link, would create an infrastructure which the urban fabric below is confined. This landmark signifies the nucleus of a new city center.
Light

Light physically links architecture to the heavens and the cosmos. It is the element that embodies the notion of architecture as an entity standing between the earth and the heavens.

Mario Botta

A preoccupation of mine is with space, but not scaleless space, but space whose order and definition are related to light. Light is the generator of space. Working with surface and volume, forms are manipulated in light, changes of scale and view, movement and equilibrium.
Movement

Consider the city as it might appear in a series of cinematic images... Notions of space, shifting ground plane, plan, section and expansion are bound up in passage through the city. Each change of position reframes a new spatial field... Premonitions of unknown means of communication and passage suggest a variety of new urban spaces.

Steven Holl writes in Edge of a City, Pamphlet Architecture 13.

office worker / consumer

Multitudes of travelers cross into a new civic center on the elevated Metro rail where the passengers disperse at the metaphoric center of the "urban room".

A "gate house" tower marks the entrance of the metro and the only penetration of vehicular traffic into the pedestrian realm. Buses, autos and taxis circle the office tower, dropping their passengers in a safe haven from the daunting urban fabric outside.

A grand hall within the Galleria links the office tower below grade and the Metro, which passes by two stories above.

Commuting individuals may park their autos in parking decks on the periphery of the "urban room". An outer road leading west off the Beltway services terraced parking structures with rooftop gardens and parking that serves as a plinth for the four towers. The parking structures along this arterial road buffers the noise created by the multitude of vehicles on the Beltway.

From the parking terraces, one will either ascend to the grand atrium of the office tower which opens onto a shared courtyard resembling a village green, or proceed horizontally towards a light well surrounding the structure of the tower above, announcing an entry to the Galleria.

Centered in the Galleria is a "retail stair" which not only serves as the vertical circulation to the Metro and outdoor market, but also provides horizontal circulation through the Galleria and to the parking to the north.

The commuting worker, entering the office space on the north edge, elevates to a 3-story lobby that serves the vertical circulation of the office bar. A free standing elevator core bridges the various levels of the sun-filled atrium, reminiscent of Frank Loyd Wright's Larkin Building.
the resident

Residents and commuters will exit from Eisenhower Avenue east-bound to underground parking. Light courts bring fresh air and remind the passengers of the environment of which they are part. Moving from their autos, the residents take elevators to the lobby at the base of the residential towers. Escalating to a second level, residents then ascend to their own vertical neighborhood.

These ground level entries and lobbies are integrated with two levels of retail and participate in the "colonnade" of towers. Passengers dropped off on Eisenhower Avenue will pass through this colonnade to the open market, a small segment of the Civic Center's interior.

visitor / patron

Hotel residents and theater patrons will convene in a pre-function lobby, near the west end of the office bar at grade, and mount a glass elevator to take them to the theater and hotel ballrooms.

People going to the upper functions of the northern wall will arrive in sky-lobbies open to the city below.

These sky-lobbies appear at each intersection of tower and bridge. A structural truss provides horizontal circulation to distinct public functions: entertainment, concession, fitness and information. Each function is presented with a grand entry.

A theater seating 900 people is entered by moving underneath the curve of the seating bowl towards the sky. Support for this convention hall surrounds a 14-story atrium.

The "fitness bridge", has a pool, a climbing wall attached to the vertical circulation, and is exposed to both the southern light and sky, and various court games. The fitness center is discovered by escalating through a slot in the floor reaching to a shaft of light.

A large reading room, entered from the bridge below, suggests the function of this link. This "information bridge" is a new container of knowledge based on multi-media. Learning centers and reading rooms are open to the outside environment. A ramp system along the southern exposure provides the circulation. Smaller conference rooms are accessible from the office tower which this bridge links.
Workplace

In the New Office, architects and designers are facing these global issues: the technological evolution of office-building design, the effect office towers have on our fragile urban and nonurban environment, the growing concern for white-collar worker productivity and happiness, and the value of group contact within a building.

The challenge for architects is "to balance the efficiency and prestige of a tall building with technical solutions that set new resource-conservation standards and provide workers a more attractive and sustainable environment."

The American postwar office tower with enormous floor plates, and hermetically sealed windows is becoming obsolete, replaced by more user friendly structures that save money, promote productivity, conserve natural resources, and allow employees some control over their environment.

Kevin Roche and John Dinkeloo designed the Ford Foundation's 1965 New York Headquarters which rethought the light court as airconditioned atrium and plant filled garden of reprose. This precedent became the beginning of the office environment studied in the Eisenhower Metro Center.

The office towers along the Capitol Beltway are designed as equilateral triangles that create a strong edge to the south but allow light to penetrate into courtyards. The office tower floor plate wraps around a central atrium. These atria face onto and become part of a shared courtyard, an oasis of green.

All employees will have perimeter office space either on an exterior wall or internally within this centralized atrium. This shared interior space would encourage social interaction lowering the barriers of communication.
The top of each atrium is capped with a light scoop which allows natural light to penetrate the building onto the courtyard in the morning and late afternoon depending on the office tower's orientation.

Similar ideas are used in the design of other office spaces within this project, which promote an interactive workplace. The sixty-five story office tower is made of two structural tubes linked to the north by service and to the south by a series of office bars made of eight story connectors. This allows a variation in floor plate and atrium.

The tower is packaged into four parts each having its own service systems. The atrium created by the proximity of the vertical tubes captures sunlight from the south.

At the tower base a light scoop penetrates the building facade gesturing to the entry of the Metro, also creating communicable volumes within. In the middle sections, floor plates vary in size from 10,000 to 20,000 square feet. The upper floors share a public glass capped atrium.

The east and west facades are animated by vertical and horizontal louvers eliminating the glare from daylighting in the workplace.

**Dwelling**

Residential units can only function together satisfactorily if the street on which they are situated functions properly as a living-street, and that in turn depends largely on how all residential units manifest themselves outwardly—whether they are open enough to let some of the domesticity out into the street and some of the street into the home... It is always a question of finding the right balance to enable the residents to withdraw into privacy when they want to, but also need contact with others. Of crucial importance in this respect is the space around the front door, the place where the house ends and the living street begins.
It is what the dwelling and the living street have to offer each other that determines how well or how badly they will both be able to function.


dwellings

Demographics shaped the number and size of dwellings within a vertical neighborhood. Flats ranging from 800 sq. ft. studio apartments to two story 2400 sq. ft. three bedroom apartments create a variety of neighborhood configurations. The variations on floor plates create diverse elevations giving each flat a separate identity.

Neighborhoods are made from 12 to 14 apartments that share a four story atrium courtyard, their semi-public realm. Residents use vertical circulation to arrive at their neighborhood. A series of devices mediates the semi-public realm to transform circulation route into a living-street and open up dwelling units so that residents partake both as spectators and spectacle in the drama of street life.

Arranging balconies within the atrium overlooking the courtyard allows some privacy, but also gives a degree of overlooking and awareness of other residents. Space is fluid, the public realm flows into the private and the private realm spills over into the public. Columns and walls, stairs and balconies, porches and doorways and other definitions of threshold are devices that not only mediate between public and private but also prompt, almost urge, the public realm into being.
Epilogue

Cities today only begin to explore the possibilities of the built form. The Eisenhower Metro Center begins to respond to the recent changes in our culture. This metro center is idealistic but not utopian in respect that it is site specific. This proposal attempts to defy the prevailing homogeneity of the city of Alexandria and the coinciding sprawling periphery. As an invention rather than a solution the Eisenhower Metro Center attempts to make the city more habitable, perhaps more extraordinary, and motivate change.

Continuing investigations:

Light as the generator of space.

How can the environment of the workplace become more productive?

What would be the social ramifications from living in the vertical city?

What infrastructure can be derived from this type of city nucleus and for the Eisenhower Corridor?

Could this project type, a Metro stop, become self-sustaining?

As a precedent, what would become of the remaining parcels to be developed?