A Tool for Urban Design: An Analysis of a Physical/Conceptual Framework as a Basis for the Design of the Roxbury Community College

by

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INTRODUCTION
ABSTRACT

The purpose of this thesis is to test the viability of using a simplistic design framework in the initial organization of a large-scale urban design program. The exploration will show how this basic organizational framework can be adapted within the context of a set of specific program requirements and site conditions to ascertain the suitability of the original point of departure. A schematic design investigation of the Student Center of the proposed Roxbury Community College (Southwest Corridor site) in Boston, Massachusetts will serve as a mechanism to test the rudimentary conceptual framework utilized to organize the overall Roxbury Community College site plan developed for Environmental Design Studio Level II (Fall 1976).
"First, the taking in of scattered particulars under one Idea, so that everyone understands what is being talked about... Second, the separation of the Idea into parts, by dividing it at the joints, as nature directs, not breaking any limb in half as a bad carver might."

Plato, Phaedrus, 2650

This thesis is an attempt to analyze and document the initial phase of a specific design process. Christopher Alexander defines the design process as "the process of inventing physical things which display new physical order, organization, form, in response to function." [1] Because the majority of urban design problems involve many complex issues, the establishment of a basic design structure during the initial stages of the design process is imperative. The physical and psychological elements which constitute the many aspects of the design program, including design structure, can be generated from specific administrative or organizational structure, specific user requirements or a specific site, but most importantly, from the designer's attitude toward the problem. The manipulation of the design structure elements may be intuitive, arbitrary and simplistic or rationalized and deliberate -- but in any case, the designer must grab on to some tool with which to lay the foundation for the basic design structure.

This thesis investigation is an exercise to sharpen my skills in tackling this "initial design phase." Since the success and/or marketability of my skills as an urban designer will depend greatly on my capacity to understand and attempt to solve a variety of problems... I'll surely have to have some idea of when and how to start the design process. I contend that there must be some basic and inherent elements in most urban design problems that the designer can use to begin the process. It may also be logical to look for a tool (or structure) that one can use throughout the complete process even through design implementation. It is im-
important to know, however, when the chosen design tool has lost its applicability. Therefore, it is necessary to, at some point, test or check the structure for its continued functional significance and use. It is important therefore to know when to put down the wrench and pick up the hammer.

I decided that one approach would be to analyze and refine a conceptual framework that was carried to the point of physical implementation. During my participation in the Environmental Design Studio II at MIT, I became intrigued with an explorative process to find a logical and appropriate single element on which to base a generic conceptual framework for the urban design of a new Roxbury Community College facility proposed for the Southwest Corridor site in Boston, Mass. It is this conceptual framework that the thesis will analyze and refine and from which I will hopefully learn more about the initial stages of the urban design process. It is not my intention to redesign or improve the site plan, program or a specific building. I have accepted the program and previously designed site plan as givens (for better or worse) for the purposes of this investigation.
METHODOLOGY
I began the thesis investigation by revisiting the site and reviewing the design process used in the Environmental Design Studio II (Fall, 1976) and by re-evaluating the program for the RCC. I retraced the design issues and generators as they related to the program and gained a clear understanding of how I arrived at the conceptual framework and its application in the site plan.

In doing so, I defined the primary factors which established the three major elements from which the initial conceptual framework was developed. I continued to scrutinize the three framework elements in terms of their individual characteristics, as well as how they were interrelated. With this as a beginning, I analyzed the basic conceptual framework that I used and found that several other major

METHOD FLOW CHART

Environmental Design Studio II (RCC)
- Information about site context & educational concept
- Site Analysis
- Program
- Issues
- Major Design Generators
- Conceptual Framework
- Site Plan

Analyze & Refine Conceptual Framework
- Analyze and Refine Major Framework Elements
  - character
  - limits
  - inter-relationships

Test Framework

Evaluate Framework
- as method perse
- specific RCC framework
  for initial phase validity

Conclusions and Recommendations
- Next Steps
framework elements evolved. I then set out to refine and make more explicit the important framework elements to the point where I was ready to test the refined framework for its usefulness in terms of specific design application. Before setting up the actual test I began to generate questions or criteria which would help me evaluate at a later stage the specific framework applied to the RCC site design and also criteria to evaluate the use of this type of framework or a framework in general to begin the urban design process.

In order to do so I set up a hypothetical situation in which I assumed that I was the campus architect or project coordinator whose task was to set up the conceptual framework, identify and set limitations as to the use of the major framework elements. I therefore had to decide which aspects (as campus architect) I would need to control from a design and organizational standpoint. The individual RCC buildings would be designed by others.

I devised basic rules for the implementation of the framework and its elements and set forth the attitude that the client would want to project throughout the design.

To test the application of the framework to the site I then assumed that I was one of the architects under the guidance of the project coordinator and attempted a schematic design of one of the building components within the RCC program. I chose the RCC student center program and using the framework set forth by the campus coordinator I began schematic design. Student center spatial functions and adjacencies were studied and criteria for evaluating what a good student center would encompass and how it would work were established. After making several passes at a schematic design, I then used the criteria to determine if the center worked, and if so, was the physical/conceptual framework instrumental in providing a good basis for its design. This was the first step in eval-
uating the RCC framework. I evaluated the framework using the criteria questions that were previously developed and began to generate conclusions based on my findings as to the usefulness of the framework, its validity as a point of departure in the RCC urban design. Recommendations for improving the RCC framework were made as well as conclusions concerning the validity of the conceptual framework method in general as a starting point in urban design.
The proposed site for the RCC is located within the southwest region of Boston adjacent to the Highland Park Community in Roxbury, Massachusetts. It is bounded on the west by Columbia Avenue and by Center Street on the east. The linear site runs from Roxbury Crossing to Jackson Square on the north and from John J. Conolly playground on the south.

Neighborhoods within the southwest region of Boston include the South End, Roxbury, Jamaica Plain, Dorchester, Mattapan, Hyde Park, Roslindale and West Roxbury. The outer neighborhoods -- Hyde Park, Roslindale and West Roxbury -- are low density residential communities, suburban in nature. The middle neighborhoods -- Mattapan, Dorchester and Jamaica Plain -- are comprised of more dense and varied residential building types and major open space resources such as Franklin Park, Arnold Arboretum, Jamaica Pond, and the Jamaica Way. The inner neighborhoods of Roxbury and the South End are older sections of the City, densely built but characterized by a richly varied population, numerous buildings of historical merit and institutions of regional importance such as the Museum of Fine Arts, Northeastern University and the Harvard Medical School. [2]

During the last twenty years, the Southwest Corridor (so-called due to the association with Southwest Corridor Transportation Project) has been affected by many of the problems that are common to most larger cities in the United States. Due to the implementation of highway and urban renewal projects, extensive tracts of land have been cleared and many residents have migrated to other
Boston neighborhoods. In the case of the Southwest Corridor, the planned highway construction was aborted in 1970 because of community protests and consequently the land remains vacant. The change in the city-wide employment profile (from a manufacturing base to a professional and clerical base) has in turn contributed to the increase in unemployment trends while further stifling upward job mobility. In 1972, with the appointment of a Development Coordinator, the 108 acre site was slated for the development of a new metropolitan transit and commuter access. Resulting was the rerouting of the Orange line rapid transit system and Amtrak Rail through the Corridor, in addition to plans to link the area's resources via a network of bicycle trails and landscaped pedestrian paths.

As summarized in "The RCC 6WC Site Evaluation Report," the racial composition of the Southwest region has undergone significant change since 1960, with increases of Black and Hispanic-speaking families. The Mission Hill community immediately west of the proposed College site remains a richly varied neighborhood with a substantial working class white population. Through the years this area has served as a "zone of emergence" for lower middle income families of all ethnic backgrounds. Over 90% of the non-white population of Boston lives in the Southwest region. In 1970, 16% of the total city population was Black, while 27% of the population of the Southwest communities was Black. These statistics, based on U.S. Census information, underscore the geographic centrality of the Corridor area to many of the City's racial and ethnic groups. [3]
Historical -- The RCC site is located in Roxbury, Mass. and more specifically in the Highland Park neighborhood. Once utilized as farmland and known as the Roxbury Highlands, Highland Park was not suitable for industrial use due to its steep contours and as a result was gradually transformed into an area of suburban estates and country homes owned by Boston's wealthy residents. It was a sig-
VIEW OF SOUTHWEST CORRIDOR SITE FROM COLUMBUS AVENUE LOOKING EAST
significant period in terms of the rich architectural quality of the neighborhood and several structures remain and are currently registered as National Historic Buildings. Throughout the years, residential transition took its toll on Highland Park as the level and degree of wealth and economic status diminished.

Columbus Avenue and the proposed rail and transit facilities separate the site and the Highland Park neighborhood from the Mission Hill neighborhood. At the end of the 19th century, lower-middle-class immigrant families occupying 3-deckers and tenements settled in Mission Hill, as it was also the location of factories and other industrial use. At present, the Mission Hill remains residential in character, although it faces the continuing expansion of the Fenway Medical Complex.

- Economic -- The economic factors in the immediate site neighborhood that warrant consideration characterize it as one where unemployment and inadequate income rates are significantly higher than that of the City as a whole. According to the 1970 U.S. Census, a medium family income in the Highland Park neighborhood averages out to $6,415 per year as compared to $9,133 in the City of Boston as a whole. The number of families below the poverty level in Highland Park and Mission Hill combined averages out at nearly 23%. In terms of source of income, the figures show the distribution as follows:
  - 79% wages or salary
  - 30% public welfare
  - 3.3% self-employment

The majority of residents find employment in low-skilled jobs such as operatives, service workers, or laborers, while only 12.9% are employed in professional, managerial, or technical capacities.

- Land Use -- The prevailing land use in the area immediately adjacent to the College site is resi-
idential in character. The site, in fact, forms the western terminus of the Highland Park residential community. Several houses included in the site that face Center Street comprise the eastern border of the site. These buildings, like the majority of houses in Highland Park, are mainly multi-story with up to 6 units per structure. Located approximately 2 1/2 miles from downtown Boston, Highland Park's residential community is characterized by narrow streets, hills and picturesque views of the City. The topography of the neighborhood is distinguished by rock outcroppings, plateaus and lowlands with most of the housing sited on slopes ranging 15-5% and the streets following the contours.

The concentration of commercial facilities are located one block east of the College site in John Eliot Square. A land use survey conducted by the Roxbury Action Program in 1974 concluded that only 3% of Highland Park was in commercial use.

The Dudley Station transit stop also serves as a commercial focus for Roxbury, Mission Hill and North Dorchester.

The land use character of Mission Hill is also mainly high density residential, although a significant concentration of industries are located within the neighborhood. A number of commercial and institutions uses line Tremont Street from Roxbury Crossing to Brigham Circle, which is only a ten minute walk from the College site. In addition to the newly constructed Mission Park multi-family housing development, two large public housing developments -- Bromley-Heath and Mission Hill -- are located in Mission Hill.

The land use character of the College site is again primarily residential. The partially-completed Campus High School/O.R.C. (Occupational Resource Center) borders the site to the north.

Pedestrian and Vehicular Access -- With the relocated Orange line passing directly by the site,
the stations planned at Jackson Square and Roxbury Crossing both provide excellent pedestrian access at either end of the College site. A combined transit and commuter rail station planned at Ruggles Street and Northeastern University will provide direct access to the entire Boston Metropolitan area by public mass transit. In addition to rapid transit, bus services run on Columbus Avenue, Center Street, Heath Street, Washington Street and Tremont Street, which makes possible lateral connections to the Red, Orange, and Green lines.

The recently constructed New Dudley Street and the reconstruction and realignment of Columbus Avenue (with direct access to the Southeast Expressway) in addition to Centre, New Heath and Lamartine Streets, will provide convenient and smooth vehicular access to the College site.

A considerable percentage of the potential student population could be drawn to the College campus from within a 10 to 15 minute walk due to the high density residential patterns in the immediate neighborhoods. Primary pedestrian movement will generate east of the site on Roxbury Street from John Eliot Square and from Highland, Marcella and Cedar Streets, which intersect Centre Street. Extreme grade changes and the portion of the railway tracks limits pedestrians from access from the west to entrances at either end of the site from Centre Street, Jackson Square and from Tremont Street near Roxbury Crossing.

Community Facilities and Open Space -- A wealth of community facilities which primarily serve Highland Park and Mission Hill are within close proximity to the site. Public facilities are concentrated in the Fenway area and on Huntington Avenue. The Museum of Fine Arts, Northeastern University, Children's Hospital, the Boston Hospital for Women, Boston English and Boston Latin High Schools are within a one-mile radius of the site.

The Roxbury Courthouse and Library Complex
Existing Public Transportation System

LEGEND

- Bus Routes
- Rapid Transit
- Rail

0' 700' 1400' 2100'

north
Proposed Transportation System

LEGEND
1. Bus Routes
2. Rapid Transit
3. Rail
near Dudley Station, the Dimock Community Health Center on Columbus Avenue, the Roxbury YMCA and Boy's Club situated a mile to the west are facilities which serve the local community.

Regional open space resources include the Back Bay Fens and Franklin Park. A stadium and zoo are located in Franklin Park while the Fenway includes Jamaica Pond and the Arnold Arboretum.

Notable open spaces within walking distances of the site are the Parker Hill, the High Fort, the Campus High School Sports Fields, John J. Connolly Field and Washington Park. The Shelborne Recreation Center in Washington Park includes a pool, a hockey rink, tennis courts and gym facilities. The proposed bicycle trail and pedestrian path linking open spaces, public facilities and historic landmarks will parallel the RCC site.

[5]

*The Community -- A refreshing situation in the Southwest Corridor area is the general public aware-
Established in 1970 as a neighborhood-based institution, the Roxbury Community College at present offers a two-year program to approximately 1000 students. In order to respond to the obvious need for a community-oriented educational facility in the Southwest region of the Boston metropolitan area and due to extensive overcrowding of the existing temporary facilities, the Massachusetts Board of Regional Community Colleges sanctioned the proposed Roxbury Community College to be located in the Southwest Corridor. The RCC would undoubtedly take on the obvious image of a highly respected institution whose primary objective would be to provide equal educational opportunities for everyone who entered. Its existence would not only provide an invaluable supportive service, but also add a sense of permanence within the community.

The physical design of the Roxbury Community College must respond to administrative and educational concepts established by the RCC President and the Regional Board of Community Colleges. The educational concepts and goals are as follows:

- To serve primarily the educational, occupational, and cultural needs of the Greater Roxbury community by providing high quality educational opportunities at low cost for all high school graduates or those with comparable educational backgrounds of all ages.

- To prepare and equip students who plan to transfer to four-year colleges, or professional training institutions, such as medical school, law school, nursing school, with a strong foundation in the liberal arts and sciences, as prescribed and established by respective educational institutions.

- To prepare all students for their respective programs -- career, transfer, general education, continuing education -- by providing them comprehensive services in academic and personal counseling, occupational guidance, and job placement.

- To provide all students with the opportunity for the development of social maturity through a well-balanced program of student activities, including
music, drama, athletics, as well as the particular
skills needed in the individual's specialized ca-
reer.

- To provide socio-economically disadvantaged stu-
dents with financial aid within the federal, state
and local boundaries and guidelines as prescribed
by law.

- To ultimately and adequately meet the special
educational needs, interests, and capabilities of
the adult community-at-large, particularly our sen-
ior citizens, by developing programs designed to
assist them in making meaningful contributions to
society.

In order to transform its philosophy into an
"action-oriented" one, the RCC proposes to:

- provide higher education to those citizens who
may not have been able to attend college for vari-
ous reasons;

- offer educational opportunities often take for
granted in many communities, but denied in this
community in past years;

- implement an open-door policy which carries with
it certain individual responsibilities; and,

- work with its multi-ethnic, multi-national commun-
ity and student population in promoting better
human relationships among and between the insti-
tution's feeder constituency.

As a result of the aforementioned attitude
and approach, the priorities and programs of the
RCC differ in many respects from most colleges
in that:

- Competitive sports were established early as
medium through which prospective students could
be attracted.

- The General Education Development Program (GED)
was designed as a vehicle through which the dis-
proportionate number of community high school
dropouts could attain secondary educational cer-
tificates or diplomas and become gainfully em-
ployed or pursue college training.

- The Evening and Weekend Colleges serve the needs
of working students.

- A comprehensive bilingual program is expanding
to serve the ever-increasing numbers of students
for whom English is a second language.

Program -- The RCC Program consists of a Central
Administrative facility, a Learning Resource Center,
a College Center, a Physical Education facility,
five sub-colleges, and Campus Services. The five
sub-colleges include Business Administration, Sci-
ence and Math, Humanities, Social Sciences, and
Occupational. The following space requirement
chart indicates that 412,521 gross square feet
would be adequate for a 3,000 student enrollment
(Phase I) with an additional 119,602 gross square feet for a tentative 2,000 student enrollment expansion (Phase II). Also the site must accommodate 500 parking spaces and College athletic fields.

For detailed program see Appendix.

### Summary of Space Requirements

<table>
<thead>
<tr>
<th>Use</th>
<th>Phase I (3000 Students)</th>
<th>Phase II (5000 Students)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Administration</strong></td>
<td>18642 G.S.F.</td>
<td>18642 G.S.F.</td>
</tr>
<tr>
<td><strong>Learning Center</strong></td>
<td>55309</td>
<td>55309</td>
</tr>
<tr>
<td><strong>Student Center</strong></td>
<td>71217</td>
<td>71217</td>
</tr>
<tr>
<td><strong>Physical Education</strong></td>
<td>67853</td>
<td>67853</td>
</tr>
<tr>
<td><strong>Sub-Colleges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Business Administration</td>
<td>15705</td>
<td>24641</td>
</tr>
<tr>
<td>- Science &amp; Math</td>
<td>34325</td>
<td>50232</td>
</tr>
<tr>
<td>- Humanities</td>
<td>17443</td>
<td>57726</td>
</tr>
<tr>
<td>- Social Science</td>
<td>51181</td>
<td>27105</td>
</tr>
<tr>
<td>- Occupational</td>
<td>19877</td>
<td>19897</td>
</tr>
<tr>
<td><strong>Campus Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Gross Square Feet</td>
<td>412521 G.S.F.</td>
<td>532123 G.S.F.</td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td>500 Cars</td>
<td>500 Cars</td>
</tr>
</tbody>
</table>
The RCC site is linear in nature, stretching approximately 2,500 feet from Ritchie Street to New Dudley. At the mid-point near Cedar Street, the site is 300 feet wide and the grade slopes approximately 40 feet from Centre Street west to Columbus Avenue.

The topography of the College site is basically level along Columbus Avenue from north to south. Along the east-west axis the site slopes at its greatest portion (mid-point rises 55 feet in 350 feet, creating a slope of 25%). South of Cedar Street, where Centre Street intersects with Columbus Avenue, the slope drops 48 feet in 2,000 feet (2%) and contains 8 to 13 available acres of land. The portion of the site bounded by Highland Street, Ritchie Street and Columbus Avenue rises 30 feet from Columbus Avenue is 88 feet (4% slope) containing 11 acres of available land.

Other significant site analysis information such as vegetation, views, climate and noise level are summarized on the site analysis map.
Site Cross Sections
DEVELOPMENT OF THE INITIAL FRAMEWORK
After reviewing the metropolitan and neighborhood context, I retraced the design process of the E.D. Studio II in order to get a clear understanding of the development of the initial physical/conceptual framework which served as a basis for the solution to the RCC site organization problem. With the establishment of the neighborhood program and site context and after summarizing the major issues, the design studio was asked to develop several different concept diagrams. Students were then instructed to choose one of the concept diagrams using one or two organizational elements (whether physical or theoretical). "Sketchy" site plans were generated around each of the concept diagrams on which to base their site plan designs. It was during this time that the client, Dr. Walter
Smith, President of RCC, came to review the interim plans. His visit was instrumental in increasing our understanding and application of the program. A detailed site massing model along with a site plan and sections were required for the final review.

**SITE ISSUES**

During the studio exercise, I looked for the critical site design issues as they related to the three "communities" that would utilize the RCC facility. The method that I used included substantial consideration of the user orientation that would surface from the student or neighborhood and metropolitan communities. User orientation can be defined here in terms of the attitudes and images that these user groups would have toward the RCC facility as an institution as well as how the three groups' attitudes about one another were interrelated. Each user group's orientation to the college could also be reflected in the types of use and access to the College. The user groups should be described in terms of distance, i.e., those within a short walk or drive vis a vis those whose "home" communities are elsewhere. The following flow chart shows how I organized my thoughts around the critical site issues.

In general, the primary issues were:

**Regional**
- The site should be accessible via regional transport network systems.

**Neighborhood**
- The relationship of the college site to the immediate residential area.
ISSUE FLOW CHART

- 3 Communities
  - Metropolitan
  - Highland Park and Southwest Corridor
  - Non-Student Residents
  - RCC Students

Responding to:

- RCC visual image and existence in Southwest Corridor and Highland Park

"3 Communities take attitude relative to RCC"

- About themselves as individual students
- About the RCC role in the community

EDUCATIONAL EXPERIENCE
- Pedestrian and vehicular access to the site.
- The potential for RCC to serve the immediate neighborhood.

Site Analysis (as related to Program)
- The effects of the linear and sloping site on the physical arrangement of the college.
- The anticipated building mass and open space allocation as related to the College's space program, outdoor activities, parking and expansion potential.
- The visual, building mass and access implications for the Highland Park residents along Centre Street.

Equally salient were my conjectures about the image the college would take within the Highland Park community. Regionally and locally the SWC would have a facility that would cater to the needs of its constituents. The mere existence of the RCC would promote the community's exposure to an academic setting and environment. The college would have great potential in involving the community in its curriculum and special programs that were directly related to their needs as students as well as a community-at-large. By this I mean that the College could also serve as a forum through which the community could manifest its social and political aspirations. The existence of the RCC would also represent a physical permanence and tradition in a community whose people for so long have been denied the dignity of a sense of belonging.

I also considered the types of students who would attend the RCC in relation to their different needs and lifestyles. I developed several scenarios in terms of how different students would
use the College facility. In the scenarios, I described students in terms of full-time, part-time, day-time or night-time students; at what point or period in their lives (as related to age and career development) they would use the facility. For example, I tried to imagine how female students who had careers as mothers and homemakers, secretaries, waitresses, etc. and also how teenagers, middle-aged or the elderly would use the college facility during the course of a day (or night). I then looked for the common needs and issues that were evident in the scenarios.

With these issues in mind, the following planning principles generated the initial organizational framework:

- The College design should inhibit the formation of any "gap" between residents and students.
- The physical form and organization of the RCC should contribute to the maximization of the potential benefits of the educational experience. (Peer association, teacher/student interaction, intellectual intensity, both formal and informal, etc.)
- The College should have a high visual impact, solidifying its identity and image within Boston and the neighborhood, yet not intimidating or overwhelming within the local context.
- The College should be readily accessible from the proposed MBTA Orange line stops at Roxbury Crossing and Jackson Square.
- The building mass should reflect the scale of the residential community along Centre Street.
- Vehicular access and parking for the College should not generate adverse traffic impacts within the residential community of Highland Park.
- The design of the College should respond to dissimilar edge conditions on Centre Street and Columbus Avenue. Specifically, the Columbus Avenue edge relates more to the metropolitan area, while the Centre Street side is much more local and residential.
- The massing of the College should utilize the natural sloping topography of the site.
- For purposes of convenience and maximum use, the College design should provide the students and the community with a clear physical and visual orientation internally and externally.
- The placement of the individual program components (i.e., central administration, sub-colleges, physical ed.) should reflect the College's educational philosophy in terms of optimum functional interrelationships.
- In light of the need for each student to identify with a specific academic faction within RCC as a
whole, the location and design of the sub-colleges should reflect an individual character while clearly remaining integrated with the larger College community.

- The design should provide for the efficient operation of maintenance services and security.

- The plan should accommodate the implications of future expansion and phasing provisions.

- The allocation of and access to buildings and open space should not only respond to the needs of the College community but also to the needs of the local community (i.e. Highland Park and Mission Hill).
THE LAYERING EFFECT

Refers to the layering or stratifying of program space functions on levels according to the degree (active/passive) and type (formal/informal or community-oriented) of activity. The character of the levels would be determined from the relative adjacency with the particular community interface. For example, the character of Centre Street became

- Edge Condition Character
  - Centre Street (passive, informal)
  - Columbus Avenue (active, formal)
- Orientation and Access
  - Required
  - Variations and Prototypes
- Sloping Site
- Placement of Component Space Functions

**INITIAL FRAMEWORK ELEMENTS**
the generator of a passive-neighborhood layer, whereas Columbus Avenue indicated the focus of a highly active/regional community oriented layer. Therefore, those spaces that specify more quiet, distant activity (such as study lounges) could be oriented toward Centre Street on the upper layer of the framework and perhaps eventually on the upper layers of the built form. Spaces that would be heavily utilized by the community, such as the theatre and cinema, would be oriented off of Columbus Avenue. The bulk of classrooms would be oriented on the middle level or "student level."
INTERNAL PEDESTRIAN STREET

A central interior pedestrian connector (or link between college components was seen as an essential element in the framework in order to efficiently orient and carry the major flow of students to all parts of the college. In order to provide for the efficient movement of student flow, to help clarify internal organization and also to give or-

* INTERNAL PEDESTRIAN STREET
  - To Provide Clarity of Internal Organization
  - To Provide Focus for Student Movement Flow

+ Orientation & Access
  - To whole college and individual building components

- Visual Contact
  - With potentially accessible spatial activities
  - To Centre St. & Columbus Ave.

- Focus of RCC student activity and interaction

- (Primary) Efficient Movement Flow

- Linear Nature of the Site
order to and integrate the individual building components, a student street would run linearly and centrally through the college. Visual contact with activities in spaces along the route would be provided so as to force students and others to become aware of activities with which they otherwise would have ignored or avoided. The major street would be located in the middle layer of the framework and would thus be the focus of student activity and interaction. The building component nodes would intersect with the student street.
"Student Pedestrian Street"

Legend:
- Student Interior Street
- Student Exterior Street

Facilities:
- Educational Classroom
- General Purpose
- Student Center
- Student Speciality
- Business Administration
- Student Center

Areas:
- Student Cyclery
- Humanitiies
- Central Administration
- General Science
- Central Science
- Central Business

Notes:
- "RCC" Scale 1:100
- "PLAZA"
- "Student Center"
In order to clarify the organization of the college layout to those unfamiliar with its layout and to provide convenience and efficiency of movement for the students and staff, "activity nodes" were planned for each building component. The activity nodes would also reinforce and make more distinct sub-college identity. Individual

* COMPONENT NODES

- Activity Nodes Based on Program Components and Administrative Organization

- Vertical Access and Orientation
  - Individual Component Identity and Orientation
    - RCC Context
    - Regional/Metro Context
  - Component Functional Focus
open spaces associated with each node would also be identified with each building component. Vertical circulation, general support (telephones, toilets, water fountains, etc.) and sub-college departmental offices would be located in or near the component activity.
When combined, the elements generated the basic organizational framework or concept diagram.

In my mind, the development of the concept diagram represents the first state in the structuring of the design framework, relatively independent of site, and is thusly termed "pure diagram."

The next stage involved the application of the pure diagram to the site and program. I did a schematic design involving the placement on the student oriented level of classrooms and other spaces off the student pedestrian street.
**Initial Concept Diagram** *(Environmental Design Studio II)*

- Formal, Hard, Public
- Semi-Public, Active, Informal
- Informal, Private, Passive, Soft

Columbus Avenue

Centre Street

John Eliot Sq.
"SKETCHY SITE PLAN"

KEY:
- Major Pedestrian Access
- Existing Bldgs → Rehab
- RCC Building Mass

SCALE 1" = 400'
PHYSICAL/CONCEPTUAL FRAMEWORK

KEY:
- CIRCULATION
- NODE
- SPATIAL DISTRIBUTION
- ENTRANCES

Circus Street

Quiet & Formal

Informal

Student

Active & Parking

Service

Columbus Ave.
As previously stated, for the purposes of the thesis, I assumed the initial site plan that was submitted for the final review in ED Studio II as a given and have not altered it in any way. The initial framework denoted a linear arrangement of the College building components; some of the advantages are: (1) actual or implied central focus; (2) clarity of internal organization; (3) a min-
imum number of internal spaces lacking the qualities of natural light and ventilation; and (4) minimal exterior wall space.

(1) I perceived the easternmost portion of the site bordered by New Dudley Street, Roxbury Street, Columbus Avenue and Elnwood Street as the primary formal entrance to the College. It is positioned at the major intersection of the aforementioned vehicular routes and is directly across from the proposed Roxbury Crossing transit stop. The majority of motorists and pedestrians will more than likely be drawn into the College at this point. John Eliot Square is also within close proximity to this formal entrance. I see the plaza that I have designed for this area as a very active one at all times of the year. It is a place where people can passively watch children and others play in the fountain and pool during the summer months or ice skate during the winter. I envision colorful lights being integrated with the fountains to attract attention to the College, as it should reinforce the College's "respectful" position in the community.
(2) Direct two-way access to underground parking from Elmwood Street.

(3) Central Administration -- The purpose of the Administration area is to serve the students and faculty and to conduct the daily business and operations of the College. It should be centrally located providing easy access to all. This area will house the principal administrative offices plus appropriate spaces for businesses, admissions, registration, student, personnel and continuing education functions.

Layout and other characteristics must consider the public image creating factor of this area. Provision must be made for subsequent reorganization of
sub-spaces.

In my view, Central Administration should be the formal focus of the RCC scheme rather than the central focus. I located central administration next to the formal entrance plaza to accommodate and direct regional visitors who are unfamiliar with the College organization. Students coming from the Roxbury Crossing can conveniently come into the central administration and take care of administrative errands at the registrar's, financial aid, etc. on the first level or go directly to the internal student street on the second level for quick access to the other college building components. The formal administrative staff office (president, vice-president, etc.) are located on the more quiet third level of the Central Administration.

(4) I have incorporated this row of existing buildings on the site as "community row." They would accommodate community groups and services such as RAP, the LRCC health clinic, legal services, etc. I retained other existing buildings on the site which were in fair condition for use as student offices and clubs, a faculty club, a radio station, or rented for commercial purposes that would bring revenue to the College.

(5) Science and Math Sub-College (see Appendix for detailed RCC programs) -- The Sub-College concept is intended to make less formidable the bridge into higher learning. It will encourage "Team Teaching" attitudes within instructional disciplines. The overall College services required to support its sub colleges is intended to reach both site and regional community instructional units.

Sub Colleges must have individually distinct characteristics while clearly belonging to the larger College community.

Intra-sub-college competition for excellence can
be expected.

Internally, the following characteristics and relationships are desired:

- Central public area focus.
- Easy student access to faculty offices.
- Faculty adjacency to conference and seminar spaces
- Passive gathering area.

As students pass through the sci/math sub-college, via student street, they can have visual contact with the labs and animal rooms. The department node is directly adjacent to an exterior and (6) the greenhouse.

(7) Humanities Sub-Colleges -- Students should have visual access to art displays, art classes and labs. A small sculpture court is adjacent to the department node.
(8) Student (or College) Center -- These facilities should be easily accessible to the total College community, especially visitors.

The following areas should be placed in direct proximity to major circulation.

- Ticket Booth
- Concession
- Information
- Public Telephones
- Rec. Rooms

- Lounges
- Theatre/Cinema
- Bookstore
- Dining Areas

The student center is the central focus of the RCC as I feel that it most clearly relates to the notion that the students and their concerns are the most important factor in the RCC educational philosophy. A two-story artium welcomes visitors and students.
into the College and is seen as an informal and active space. A bus stop (9) is directly in front of the Center. An informal student plaza (10) is located to the rear of the Center and can also function as an amphitheatre with its terraced layout. The neighborhood can have direct access to the student center from Centre Street and through the plaza. Primarily an active space, passive observation and study areas are provided on the green upper slopes of the site near Centre Street.

(11) The Learning Resource Center -- Faculty members are one key to successful and meaningful use of a Learning Resource Center. If located where convenient to the faculty, they are more likely to use it extensively and to make reading assignments more forcefully. If the RCC provides special facilities and services to the faculty, the rapport is strengthened even more. The Learning Resource Center is seen as an academic focus of RCC. It is located in the center of the College layout to provide convenient access from all the sub-colleges.

(12) The Social Sciences and (13) BA sub-colleges are located near the LRC and (14) Occupational sub-college so that computer facilities could be easily shared. The upper level of the Occupational sub-college contains child care labs and classrooms which are visually accessible from the student street. Parents from the neighborhood can conveniently drop children off, using the cul-de-sac (15) created by closing Cedar Street. The existing building (16) near the child drop-offs is also a child care center. A play lot is provided near the departmental node. The mechanical technology laboratories (with a hard surface lot to accommodate automobiles) (17) are adjacent to the main occupational sub-college facility.
(18) **Campus Services and Maintenance** -- All grounds and physical facilities will be serviced and maintained from this component. Hard surface walks and roadways should extend from campus services to all College areas.

(19) **Road leading to underground parking and to mechanical lot.**

(20) A passive heavily planted recreation and picnic area with tennis and basketball courts which can be used by the community. The existing **Dudley mansion** could be the home of the College President or faculty club. I perceive this area as the focus of future College expansion.

(21) **Physical Education Facility and athletic field** with surface parking provided to accommodate visitors to college sports events. The first goal of this facility is physical fitness and competitive sports. The secondary goal is instructional and general activity including a resource for the adjacent neighborhood community.

Additionally, the large span spaces may serve auditorium purposes for up to 4000 persons, including dances, music concerts, drama presentations, exhibitions, etc.

This facility will require illumination levels adequate for color television. Provisions for closed circuit television and video taping should be made. Adequate acoustical planning is necessary. A complete telephone intercom system as well as public address system will be needed for the Center's teaching stations, service areas, and offices.

The underground parking bays could be reached via vertical circulation which was concentrated in each of the building components.
THE PHYSICAL/CONCEPTUAL FRAMEWORK REFINED
In order to analyze and refine the initial design framework, I set myself up as the campus architect or coordinator. Utilizing the framework I had to decide which aspects and elements of the program I would need to control from a design and organizational standpoint. And which elements should be standard throughout the College in relation to form, size and function.

As John Portman put it, "If a building is to meet the needs of all the people, the architect must look for some common ground of understanding and experience....In architecture space is the thing and architects must be careful not to over-emphasize elements that should be subordinate to space....But space has no essence except as it is defined, and order is a necessary element of spatial definition. Inately, human beings, because they are capable of reason, require order to things. Order creates a sense of comfort and well-being. But the mind craves variety at the same time it requires order. What is needed is an order strong enough to permit variety and informality without losing the integrity that creates a harmonious environment: order and variety simultaneously achieved." [6]

Assuming that my initial framework was valid, I defined the following elements as those that were vital to providing a recognizable and efficient pattern of order:

- Circulation
- Nodes
- Space function distribution as related to Community Interface
- Open Space
- Structure
- Service and Parking

I also assumed that analysis and more detailed understanding of how each element worked in itself was a logical way to understand and refine the complete framework.
COMMUNITY INTERFACE AND SPACE FUNCTION DISTRIBUTION
(i.e. LAYERING EFFECT)

After analyzing the problem context, I concluded that the college should be designed to accommodate the needs of "three communities" -- the regional/metropolitan community, the adjacent neighborhood community and the student community. The characteristics of Columbus Avenue, Centre Street and the student interior street coincide with the needs of the communities in relation to their access and orientation to the College.

• Columbus Avenue Character
  -- major regional vehicular artery
  -- regional community connector
  -- location of two major regional transit stops
  -- slated for state realignment and reconstruction on a regional level
  -- runs parallel to commuter rail service
  -- direct access to Southeast Expressway

• Regional Community Need
  -- formal orientation to RCC
  -- direct vehicular and pedestrian access
  -- regional educational focus

Therefore, the functions oriented toward and image of the College on Columbus Avenue should reflect the regional/formal/active nature of this edge.

• Center Street Character
  -- major Highland Park neighborhood pedestrian and vehicular artery
  -- quiet residential
  -- feeder to important neighborhood pedestrian and vehicular artery
  -- resources (Eliot Sq., Fort Hill, RAP, Dudley Station, etc.)
  -- major element in Highland Park
  -- major neighborhood bus route

• Neighborhood Community Need
  -- informal, unintimidating orientation to RCC
  -- convenient vehicular and pedestrian access to RCC
  -- strength and pride in location of major educational facility within neighborhood

The spatial functions and image of RCC orient-
ted toward Centre Street should reflect the neighborhood/informal/passive nature of this edge.

• **Student Street Character**

-- linearly direct access and orientation through college but varied and interesting experience in transition from space to space
-- visually distinct from other circulation routes
-- major source of natural lighting
-- link for sub-college nodes
-- "window-shopping" into academic and social activities

• **Student Community Need**

-- focus for academic, social and support spaces used by the majority of students
-- efficient and convenient connector to these spaces
-- integral connector of building components
-- visual orientation to Centre Street and Columbus Avenue
-- focus (nodes) for sub-college identity
-- vehicle for student exposure to unfamiliar activities
-- simple, direct route to move quickly from one end of the College to another

Because the RCC philosophy centers on student needs, the location of the student street should reflect that philosophy and be physically within the College.

The emergence of the differences in image and context character of the three communities suggest the stratification in the college design of the program elements according to how their use needs and spatial characteristics coincide with those of the "communities." After taking a detailed look at each program space, I categorized them according to the similarity of their characteristics and use as related to one of the three communities. In other words, although some spaces could be categorized in more than one layer, the majority would fall into three of the seven categories:

* regional
* student
* neighborhood
* passive
* informal
* active
* formal

In addition to space function stratification, the understanding of the community interface character helped determine the nature of the building facade image and height.

From the exterior view, the form should also reflect the interior organization of the building
with identification emphasis on:

-- vertical circulation
-- interior student street
-- component nodes
-- primary entrances
-- distinguishing RCC building components
  (especially sub-colleges)
CIRCULATION

The basis of the framework lies in the circulation system. "The degree to which design solutions give promise of a valid strategy can best be evaluated by examining their basic plan organization, the role of the movement system plays as a social generator and in establishing the image quality of the built form...movement systems become the armature amid which the more flexible use spaces are arranged and in doing so they establish themselves as more permanent elements in the building organization." [7] The student interior street was generated from the linear nature of the site and serves as the major circulation spine in the framework scheme. On the various levels, the "street" accommodates visitors and students as a place for meeting and orientation. It funnels the movement of the students from node to node.

The student "street" should:

-- take on the actual physical character of a street via the type of material used
-- size: min of 10' and max of 20' wide
-- respond to the amount of student movement flow on a student level
-- provide clarity of internal organization (hor. and vert.)
-- provide clear orientation for those unfamiliar with the basic college organization
-- provide orientation to major vehicle routes (Centre St. and Columbus Avenue)
-- force people to experience activities in each building component (visually and physically)
-- serve as a parallel basis for corresponding circulation routes on upper and lower levels
-- be integrated with natural lighting wherever possible by way of clerestories or skylights ("The identification of such route with a view of the sky and an awareness of time and weather establishes the movement systems as a link with the world outside."[8])
"When people move through a building their journey should be orchestrated. Architects should articulate the journey into a sequence of spaces, ranging from tight enclosures to large volumes. There should also be places that produce a neutral emotional effect, in the same way that a piece of bread cleanses the palate between two wines. What I call 'people scoops' are designed to be such places of transition, from outdoors to indoors or from one kind of space to another."

The component nodes accommodate the need for both an ordering and linking device. They were situated at the intersections of primary entrance points and the major circulation route (vertical and horizontal).

I studied the position of the nodes as they related to entrances and how the combinations would be determined by the locational needs of each building component.

The main purpose of the node was to provide a distinct, individual focal point for each of the College building components, especially in the case of the sub-colleges. The functional uses in the nodes on the different levels of each building would depend on the relationship of the space function with regard to its proximity with the community interface.

After reviewing the open space element, I concluded that the placement of three major open
**Common**
- Vertical circulation
- Nodal distinguishing element
- Component interface
- Bathrooms
- Telephones
- View & natural lighting
- Open space
- Lounges & special display

**Quiet Node**
- Study, seating & dept. periodicals
- Vending machines
- Communication related, informal (e.g., children's area)
- Faculty offices
- Seminar & conference that need discreet area

**Student Node**
- Classrooms, labs, display
- Student services
- Lounges & recreation

**Formal Node**
- Dept. chairman & staff
- Community related formal
- Performance related
spaces coincided with the location of the three nodes that provided vertical circulation via elevator or escalator (plus stairwells). The characteristics of the three major nodes were similar to the philosophical character of the three major entrances: the formal/regional entrance at Central Administration, the student/community entrance in the Student Center and the community entrance off of Centre Street in the Occupational sub-college.

-- Exterior pass-throughs providing pedestrian access between Centre Street and Columbus Avenue would intersect the three major nodal points. From inside each node (on each level) there would be visual access to Columbus Avenue and to Centre Street.

-- The minimum square footage requirement for each node would be 600.

-- The vertical circulation in each node provided direct access to the underground parking. In fact, each building component would extend down into the nodes in the parking level to provide a clear orientation from the parking bays to each building.
"PCC Building Component Node Uses - Ground Level"

Sub-Colleges: Dept. Secretarial Staff
Dept. Chairm. & Dept. News

IBC: Information
Directors Office
Circulation Desk & Controls

Student Ctr: Information
Tickets
Concession
Check Room
Lobby

Central Adm: Reception & Lobby

Common Staff: Vertical Circulation
Laboratories
Waiting
Special Display
Info on Dept. & Community Programs
View & Natural Lighting
Open Space

KEY:
- Exterior pass thru (not at all bldg interfaces)
- Primary interior circulation
- See thru connecting gateway that can remain open at all times in summer
- and climate controlled in winter
- Main entrance
Node Used & Common Stuff

STUDENT LEVEL

SUB-COLLEGES:
- INFORMAL MTG
- DEPT. NEWS
- LOUNDES

LAC:
- CHECKOUT
- INFORMATION
- CONTROL
- CARPETS

STUDENT CTR:
- EXIT TO PLAZA
- VISUAL ACCESS TO RECREATION
- AND DINING

CENTRAL ADC:
- EXIT TO EXTERIOR PLAZA
- FORMAL RECEPTION AREA

more variation and scaling down of facade

view out to Cenbe

*student pedestrian street
*interior garden area

view out to Columbus Ave.
Node Uses & Common Stuff

**UPPER LEVEL**

**SUB-COLEGES:** Study Lounges, Vending, Faculty Staff Information (especially community related, i.e. childcare)

**LOC:** Carrel Control Center
- Lounge
- Coordinator & Staff
- Reception
- Vending

**STUDENT CTR:** Staff and Reception

**CENTRAL ADM:** Administration Staff and Reception
- Waiting Lounge
In analyzing the initial framework I noticed that the layout for the open space element had been determined. By virtue of the need for

-- an individual and distinct space identified with each building component and sub-college.
-- need for open spaces associated with the three types of communities -- regional, neighborhood and student -- and could be designed to accommodate one of a combination of the three.

The number and character of community type uses and building components needs could aid the determination of the size, surface nature, and activity use of the open spaces.

+ size -- min for 1, max for 3
+ surface nature -- hard, soft
+ activity use level -- active, passive

-- The open spaces would be associated and directly adjacent to nodes. They would also be physically or visually accessible from nodes. On the major student street the node could be composed of a heavily planted open space.

-- The external pedestrian pass throughs could be located at the three major open spaces.

-- The large open spaces that provide recreation and athletic events (or future expansion) are primarily so-called "recreational open spaces" and are the third type of open space.
**Open Space**

- Main Student Plaza
- Passive activity leading up toward Centre St.
- Entrance to Centre Street
- Centre St. entrance to daycare
- Pick-up area
- Play area for kids
- Physical education field
- Separation from neighborhood interface is critical

**Key:**
- Major Open Space
- Minor Open Space
- Major Outdoor Pedestrian

**Important Factors:**
- Activities in one major open space should not distract or draw interest from another.
- Major open space and different activities should be connected to each other.
- Interior open spaces at building component interfaces should be varied in size according to use.
- Can be integrated with interior space (physically or visually)

- To visually orient to primary interior circulation (horizontal & vertical)
- Could be related to pedestrian pass-thru

---

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The parking and vehicular service element of the framework basically runs completely underground and is parallel to the framework layout of the levels above ground.

There are two entrances off of New Heath and Elmwood Streets with one exit at Elmwood Street. Service vehicles are routed only on the southern vehicular artery (oriented toward Centre Street) and loading docks will be provided at the three major nodes as well as at the LRC.

Keeping with the basic framework, the three major nodes (with elevators) will extend into the parking level as will the minor nodes (retaining similar square footage although the parking nodes will be somewhat smaller).

The underground pedestrian street will run parallel with that of the student street on the middle level and will link the nodes as well as the parking bays. The character of the street will be like that of a pedestrian sidewalk and will be naturally "fenestrated" and ventilated wherever possible. Color and graphics (resembling that of the upper levels) will help orient students and visitors to vertical circulation and to the various building components. (These and other devices, including photos, slides, natural light wells and other lighting techniques can be used as vehicles to minimize the sense of being underground. Two-story spaces might work too.)
KEY:

- Pedestrian Paths
- NODE (Level -1)
- MINOR NODE (Stairway only)
- MAJOR NODE (Stairway + Elevator) & Service Loading
- Cars & Service Vehicles
- Cars Only
- Parking Bays

 //// Loading

Columbus Ave.

Critie St.

**Cars Only
**SERVICE & CARS
STRUCTURE

The structure of the college should be designed to accommodate:

-- environmental quality
-- future building expansion
-- the mechanical system
-- variation of spatial shape and size:
  -- for general use in teaching flexibility
  -- for specific use in large/particular spaces and smaller miscellaneous spaces
-- circulation for flexibility:
  -- in access

-- for variation of movement flow experience
-- in vertical access
-- in integration of exterior and interior pathways
-- facade image
-- integration of underground parking and service facilities

In thinking about structure, I generated two concepts of application. After charting the different building components of the RCC program according to the number of spaces falling into various ranges of square footage requirements (see chart), I decided that a 40' by 40' bay size could accommodate both the dimensions of standard structural materials and the dimensions of the spatial square footage requirements. One concept involves integrating the bays with a standard dimension of the student pedestrian street where the layout of the bays would follow the change in direction of the primary horizontal connector. The position of
the bay columns could be arranged in an off-set manner to give flexibility to the location and size of spaces as well as to the form.

The second concept involves a set of placement of the bay system within the boundaries of the location of the building components on the site. A 4' by 4' module would set the pattern for a negative grid wherein the positive size and placement of the spaces and circulation system would be determined by consolidating the number of modules needed to fulfill the spatial requirements.

The construction of the walls, posts and partitions would be accommodated through the use of reinforced masonry block and poured concrete forms and planking.
# OF SPACES ACCORDING TO SQUARE FOOTAGE

(For Determination of Structural Bay Sizes)

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"BAH SYSTEM ALTERNATNES"

"FLEXIBILITY AND ORDER."

*gen purpose classroom (?)

*4 x 4 module (10' - 2' for walls)

*node

*labs (?), childcare, etc

student pedestrian street

40'

40'

view out

view out

40'

40'

accommodate large & small spaces

w/common & particular uses
THE REFINED FRAMEWORK

KEY:
- Spatial Distribution
- Circulation
- Nodes
- Open Space
- Structure
- Mechanical
THE Refined FRAMeWORK

CENTRE STREET

COLUMBUS AVENUE

KEY: "Framework Elements"

NODES OPEN SPACE ENTRANCE

MAJOR

MINOR

STRUCTURE

MECHANICAL
THE FRAMEWORK TEST
Because one of the main purposes of the organizing tool was to facilitate the design of several building components into a total integrated form simultaneously providing order and variety, it seemed apropos to apply the framework to a specific building component. As campus architect I felt it necessary to find out if the conceptual framework worked for individual building design and form generation before finalizing it for application to the overall campus plan.

Due to its importance within the RCC philosophical scheme implying student life as the focus of the college purpose, a design investigation of the RCC student center was specifically chosen as a mechanism to test the framework and its specific elements. In choosing the student center, I also considered the high level and variety of activity that resulted from the overlap of use by the metropolitan, neighborhood and student communities. Not seeking a total architectural solution, through a schematic arrangement of the student center spaces I hoped to address: accessibility, adjacencies, service requirements, interface relationships of outdoor/indoor space and spatial distribution as prescribed in the refined conceptual framework. I also wanted to respond to the function of the college center within the context of college life and neighborhood accessibility and use.

The college center is "the community center of the college, providing for the services, conveniences and amenities of the members of the college family need in their daily life on the campus. It has the responsibility of supplementing the formal academic instruction of the school with a broad.
lively, and attractive program of enrichment and experiences in the arts, in political debate, and in social intercourse. 

The student center is not regarded as inclusively a student preserve, but as a link between the academic and local communities (Boston Metro and Highland Park). In linking student, faculty and administrative factions of the college, the center should be a place that promotes the easy and informal mixing of these groups with the idea of carrying over into a fruitful, relaxed atmosphere, the more formal discussions of the classroom.
The following drawing summarizes site analysis information such as existing vegetation, views, climate, slope and existing structure and RCC building component adjacencies.
The location of the student center within the RCC scheme was determined from:

-- the need for main entrance points as related to access from major transit stops

-- the consideration of the precepts as indicated in the RCC academic philosophy as well as the attitudes of the residents of the Highland Park and SW Corridor communities;

-- accessibility of the support spaces for convenience of the students
The following is a summary of the RCC student center as set forth by the college administration. In addition to the summary, definitions of each spatial function and spatial relationship/adjacencies are given.

### 3. COLLEGE CENTER

<table>
<thead>
<tr>
<th>KEY USE</th>
<th>NO.</th>
<th>CAPACITY</th>
<th>NSF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0 STUDENT ACTIVITIES</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1.1 Ticket Facility</td>
<td>1</td>
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<tr>
<td>1.2 Concession</td>
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<tr>
<td>1.3 Coordinator's Office</td>
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<td>1.4 Coordinator's Admin. Asst.</td>
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<td>1.5 Information Center</td>
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<td>1.6 Publications Room</td>
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<td>1.15 Body Development</td>
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<td><strong>2.0 AUXILIARY SERVICE</strong></td>
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<td>2.4 Bookstore Asst. Mgr's Off.</td>
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<td>2.5 Bookkeeper</td>
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<td>2.6 Dining Room--large</td>
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<td>2.7 Dining Room--medium</td>
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<td>2.8 Dining Room--small</td>
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<td>2.9 Kitchen</td>
<td>1</td>
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<tr>
<td>2.10 Theatre/Cinema</td>
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</table>
1.1 TICKETS

1. **Space Function**: To optimize the ability of students, faculty, staff, and the community to have access to tickets for R.C.C. and Community events. The service could also accommodate the payment of monthly utility bills, accessibility of Ticketron for events in the Greater New England Area, and sale of State Lottery games and food stamps.

2. **Relationship of Space to Other Spaces**:

   ![Diagram](image)

3. **General Characteristics**:

   ![Diagram](image)
1.2 CONCESSION

1. **Space Function**: To allow for quick food sales in a free and easy atmosphere. The facility could accommodate both sit-down and take-out business. Vending machines may also be provided.

2. **Relationship of Space to Other Spaces**:

3. **General Characteristics**:

1.3 COORDINATOR'S OFFICE

1. **Space Function**: To accommodate the functions of the center's coordinator and assist in relating his supervisory role to the activities of administrative and student assistants.

2. **Relationship of Space to Other Spaces**:

3. **General Characteristics**:

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1.4 COORDINATOR'S ADMINISTRATIVE ASST'S OFFICE

1. Space Function: To accommodate the support services and administrative functions of the office of the coordinator and to provide receptionist service for the office complex.

1.5 INFORMATION CENTER

1. Space Function: To present the general public as well as members of the campus community a central source of information for direction, campus activities and services housed in the center, and general notices regarding the center and the community.
1.6 PUBLICATION ROOM

1. **Space Function:** A multi-function space to provide the office complex a full range of reproduction and duplication and small scale offset printing services.

2. **Relationship of Space to Other Spaces:**

3. **General Characteristics:**

   ![Diagram of space relationships and characteristics](image-url)
1.7 ALUMNI OFFICE

1. Space Function: To allow for full range of administrative capabilities for the alumni and the alumni association of R.C.C.

2. Relationship of Space to Other Spaces:

```
  ALUMNI OFFICE  ADMINISTRATIVE ASSISTANT  LOUNGE AREA
                  VISUAL CONTACT WITH CAMPUS
                    PUBLICATIONS ROOM
```

3. General Characteristics:

```
  ALUMNI OFFICE  LIGHT STORAGE  DECK AND FILE SPACE
```

1.8 CHECK ROOM

1. Space Function: To allow for a multi-function space to be used for coat-checking services during activities in the multi-purpose rooms or in the formal and informal dining rooms. Can be used for a variety of storage needs or mini-lounge if coat racks are programmed to be portable.

2. Relationship of Space to Other Spaces:

```
  CHECK ROOM  MULTI-PURP: ROOM  LOBBY
                  DINING
                    PHONES
```
1.9 COMMUNICATIONS

1. **Space Function:** To allow space for technical equipment necessary for telephones and public address systems, and operators for each.

2. **Relationship of Space to Other Spaces:**

3. **General Characteristics:**

   - **Check Room**
   - **Flexibility for Function Change**
   - **Capable of Light Storage**

   - **Communications**
   - **Information Center**

   - **Communications**
   - **Adequate Machine Space**
1.10 STUDENT WORK AREA

1. **Space Function**: To accommodate a group of modular components to provide for the study needs of the student body. To allow for the program's maximization, the quality of natural light and air must be held in high priority.

2. **Relationship of Space to Other Spaces**:

3. **General Characteristics**:

1.11 PUBLIC TELEPHONE

1. **Space Function**: Major grouping of phones could correspond to high density areas within the facility. Phones could be built within the wall for privacy and avoidance of circulation problems. Single or double phones could be interspersed throughout the center, in addition to those placed in target areas.

2. **Relationship of Space to Other Spaces**:

3. **General Characteristics**:
1.12 RECREATION ROOM

1. **Space Function:** To allow for student recreation in a penny arcade and game room setting. The facility could include electronic games, bowling, pin ball, pool and billiard tables, a small lounge area and a small group of tables. A mini concession or grille could also service the area.

2. **Relationship of Space to Other Spaces:**

3. **General Characteristics:**
1.14 LOUNGES

1. Space Function: Lounges could be assigned two categories: open lounge space and closed lounge space. Open space lounges would be lounges incorporated with major or minor circulation paths. There should be seating units arranged for easy circulation of a semi-permanent nature. Closed lounge areas could be multi-purpose areas that could be segregated from other areas and could serve for meetings, seminars, reading, etc.

1.15 BODY DEVELOPMENT

1. Space Function: To allow for a multi-purpose space for dance exercises and martial arts. The space could provide for a small dressing room and water fountain. Exercise space could contain program aids such as dance mirrors, wall bars and movable exercise mats.

2. Relationship of Space to Other Spaces:

3. General Characteristics:

2. Relationship of Space to Other Spaces:
2.1 BOOKSTORE

1. Space Function: To allow the student body, faculty and staff a full service of textbooks and reading material along with a full line of school accessories. The bookstore could maintain regular business hours and evening shopping on scheduled days.

3. General Characteristics:

   ![Diagram](image1)

2. Relationship of Space to Other Spaces:

   ![Diagram](image2)

3. General Characteristics:

   ![Diagram](image3)
2.2 BOOKSTORE WORK ROOM

1. **Space Function:** To provide for the staff of the bookstore light storage, work benches for shipping, packing and unpacking. Must be near loading dock and large storage area.

2. **Relationship of Space to Other Spaces:**

3. **General Characteristics:**

2.3 BOOKSTORE MANAGER'S OFFICE

1. **Space Function:** Space to maintain contact with the sales area of the bookstore as well as the workroom. The office could serve the administrative functions of the manager as well as a small conference area for bookstore official business transactions.

2. **Relationship of Space to Other Spaces:**

3. **General Characteristics:**
2.4 BOOKSTORE ASSISTANT MANAGER'S OFFICE

1. Space Function: To serve the administrative duties as well as work room assignments of the assistant manager. Contact with the manager's office and the workroom is a necessity.

2. Relationship of Space to Other Spaces:

3. General Characteristics:
2.5 BOOKKEEPER

1. **Space Functions:** Space to be used for bookkeeper to keep records of bookstore's business. Desk and plenty of file space is necessary.

2. **Relationship of Space to Other Spaces:**

   ![Diagram of Bookkeeper's relationship to other spaces]

3. **General Characteristics:**

   ![Diagram of general characteristics]

2.6 DINING ROOM--LARGE

1. **Space Function:** To provide the campus community with a dining facility with a seating area that could be multi-purpose in function. The space could be situated near small dining rooms and the main circulation route.

2. **Relationship of Space to Other Spaces:**

   ![Diagram of Dining Room's relationship to other spaces]

   ![Diagram of general characteristics]
2.7 **DINING ROOM--MEDIUM**

1. **Space Function**: Space to allow for special uses on formal and informal basis. The dining room could be used for faculty dining or luncheon meetings by college administration or student organizations.

2. **Relationship of Space to Other Spaces**:

3. **General Characteristics**:

   ![Diagram of dining room relationships](image)
2.8 DINING ROOM--SMALL

1. Space Function: To provide a small, more formal, dining area for intimate and closer type meals, i.e., kitchen staff, board of directors, guests of the college.

2. Relationship of Space to Other Spaces:

3. General Characteristics:

2.9 KITCHEN

1. Space Function: To allow for the preparation of hot food for all dining situations, formal and informal. Should be adjacent to locker facilities for kitchen staff.

2. Relationship of Space to Other Spaces:
2.10 THEATRE/CINEMA

1. Space Function: To provide a large multi-purpose room for theatrical and cinema activities for the R.C.C. and neighboring communities. The space could allow for the erection of collapsible stage, setting of movable chairs and must be near large storage areas.

2. Relationship of Space to Other Spaces:

3. General Characteristics:
2.11 DINING ROOM MANAGER'S OFFICE

1. **Space Function:** To provide the dining room manager with an area for administrative functions in the operation of the dining room. Also provided is desk and filing space. Space should be close to the dining room as well as storage areas and freezer.

2. **Relationship of Space to Other Spaces:**

3. **General Characteristics:**

3.1 STORAGE AREAS

1. **Space Function:** To provide storage for a variety of functions in adjacent areas to these program activities. Storage should not be concentrated in one area. Storage could be dispersed throughout building where necessary. Large storage areas, where large bulk storage is required; small storage areas
where small bulk storage is required.

3.2 LAVATORY

1. Space Function: Lavatories for both men and women are located in or adjacent to key program areas (i.e., kitchen and dining rooms).

2. Relationship of Space to Other Spaces:

3. General Characteristics:
3.3 CUSTODIAL STORAGE

1. **Space Function:** To allow for small sink closets to occur on every level of the center. On one level with ground level adjacency large cleaning equipment along with ground keeping material could be kept.

2. **Relationship of Space to Other Spaces:**

   ![Diagram of Custodial Storage]

3. **General Characteristics:**

   ![Diagram of General Characteristics]

---

3.4 LOBBY

1. **Space Function:** To provide free and easy access to the interior of the center. The lobby should orient visitors and the R.C.C. community to the layout of the center. The lobby could be an open space with activities located on its perimeter to allow for easy circulation through and around the main lobby lounge.

2. **Relationship of Space to Other Spaces:**

   ![Diagram of Lobby]

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3. General Characteristics:

- Lobby
- Light and Air
- Main Circulation Route
- Service Elevator (if applicable)
In translating the philosophy concerning, and various attitudes toward the student center into spatial terms, the following qualitative criteria were established: The student center should:

--be the social-cultural-recreational heart serving the campus and not a catch-all for functions that don't have a home. One should be careful not to create large costly one-purpose spaces (ballrooms) that are only used a few times a year. In addition, there should not be too many clubrooms for individual organizations which serve only to divide the student body or with lounges specifically designed for faculty use.

--be a place for informal meeting, conversation, browsing, and sitting, housed in such places as small and large lounges, patios, terraces, outdoor courtyards, and amphitheatres.

--provide a variety of types of food service, ranging from formal waitress-served dining rooms to cafeterias, coffee shops, snack bars, and faculty dining rooms.

--in its capacity as a social and recreational center, must accommodate a wide variety of organized social activities and indoor recreation.

--for convenience, might accommodate facilities ranging from bookstore to post office, barber shop, vending and info kiosks, shoeshine facilities, travel bureau or cooperative store.

--house student government and other organizations, and provide premises for such student enterprises as newspaper and other publications, radio and TV station, photography and hobby clubs, also rooms suitable for meetings of a variety of clubs.
include spaces which allow for the cultural, political and civic development of the student as educational function. Spaces allowing for these functions would include: art display area, theatres, concert halls, debate chambers, periodical rooms, small seminar and meeting rooms, and conference areas.

include space for the center's administrative staff and also for other university functions closely related to student extracurricular life such as alumnae and career offices.

-- as related to visibility and form image reflect the attitudes and philosophies of the student center as a separate entity but part of the college and neighborhood communities, it should emphasize the symbolic images that these attitudes emit.

-- provide service functions that are located to insure efficiency and minimize the visibility of messy or unsightly activities.

In terms of environmental quality the following criteria were considered:

Light: Natural lighting is necessary and desirable (comfortable and energy wise) in all study areas, dining areas, and academic spaces.

-- natural light (climate controlled) as much as possible along the student pedestrian street

-- natural light (substantial) to orient people to open space around component nodes.

-- facade fenestration should reflect image and function (i.e., formal facade on Columbus Avenue; indication of st ped street via windows, clearly visible from Columbus Avenue; smaller building massing on Centre St.)

-- fenestration should reflect use of passive solar energy.

Height: Student center should have a special significance within R.C.C., which could be indicated
by height and symmetry.

--should not overpower on Centre Street edge
(i.e., student center height: maximum 45')
with clear visual access from view of existing
housing on Centre Street to Columbus Avenue.

--interior height of ceiling should indicate
importance and function of place (i.e., in
the atrium).

--height of dining area should be articulated
to accommodate intimate as well as vast
spaces and should be comfortable in both
situations; use skylights to indicate more
height while lower ceiling makes it remain
intimate enough or comfortable; indicate
vertical circulation.

Open Space: There is a need for some substan-
tial open space in summer and winter that is within
or near student center to be used as main student
gathering place.

--different uses and levels should be included
in or placed adjacent to this area so one
can have the choice of participation or as
lookers-on.

--entrance into open space should be clearly
indicated.

--interior open space should indicate nodes
and exits to larger, exterior open spaces.

--should be usable space (for recreation, study,
active planned functions, display)

--should be well-maintained and reflect R.C.C.
commitment to students and community as an
institution of permanence and tradition and
support.

--should be designated open space that communi-
ity could use.

--need for form suitable to accommodate out-
doors (and indoor) bazaars, theatre, display.

Circulation: Lobbies and corridors should
"guide" movement and access to various functions in
student center.
--should be easy to understand by those who are unfamiliar with the layout of the student center.
--should discourage congestion at any point.

Location and Accessibility:
--The student center should be centrally located not geometrically so much as related to the crossing of people's paths (classroom to the LRC, from the bus stop to central administration, etc.).
--Students come to the student center at will more than because they have to, so it is best when it is in a position so most students can walk through it rather than around it.
--Visitors and students should have a direct link from parking to the student center.
--Major access points from regional transit stops (bus stop and transit stations).
--Major entrances used by Highland Park and SWC communities.
--Control and placement of student center entrances should respond to after class hours and use of other buildings.
--The long-term and short-term accessibility to the student center should be addressed according to campus expansion therefore the location of future campus buildings must be taken into account.

Views:
--There should be dramatic views out to Columbus Avenue, Centre Street and to the plaza from the student center node with the lounges and dining providing visual orientation to the outside.
--Interior views from the various levels will also help orient users to various activities and spaces.

Before I began the schematic design of the student center, I analyzed various alternatives of
placing the college building components in a linear pattern. In doing so I considered how the spatial functions in each building related to each other, the position of the support facilities (LRC, student center, central administration), the relationship to Centre Street and Columbus Avenue in terms of access, and need for open spaces at a variety of intervals.

The following specific design criteria were set forth before the schematic design was started. It was intended that the criteria be used as a gauging device during schematic design and an evaluation mechanism after the schematic design process.

**The ticket facility should be easily accessible to community and students with ample space provided for office activities.**
--Congestion should be kept to a minimum so as not to disturb or hamper other functions.
--Tickets be sold in two or more windows.

**Concession should be visible and accessible yet not in the way of other spatial functions or interrupted by them.**
--It should include an informal seating area.
--There should be comfortable working area for employees.
--It should be near theatre entrance.

**Coordinator's office** should have quiet greeting and waiting area.

**Information center** should be clearly visible and accessible.
--A system to dispense information when office is closed should be provided.
--It has an efficient system of dispensing handouts.

**Publications room** should be organized so that student and staff users do not interfere with usual functions.

**Alumnae office** should have ample waiting area and area for dispensing info to students.
**Check room must accommodate storage for coats as well as boxes or shelves for bags, hats, umbrellas, etc.
--It should be placed near a dining room (small and large) to accommodate formal dinners and school dances, etc., as well as near cinema.

**Communication Center should be along the student pedestrian street so activities can be seen by passing students.

**Student work area has office space divided with related storage.

**Recreation room should have access to exterior space and be divided to accommodate small seating areas as well as those used for small games and tables, TV, and a small snack store.

**Body development activities should be seen via student pedestrian street.
--It should have natural light and storage and dressing area with access to an exterior space for exercising.

**Bookstore should be on the middle or lower level so easily accessible; the circular route should relate to its necessary control points.
--It should have small souvenir and goods shop.

**There should be some outdoor dining visible to Columbus Avenue and Centre Street.
--The large and medium dining areas should be divided in some way to make it more intimate.
--The small dining room should be intimate and formal with nice view (especially for evening) and access to an exterior space.
--There should be partitioned smoking/dining.
--There should be natural lighting all over from skylights.
--A little cafe should be provided for inter-
mittent snacking for breakfast and coffee.
**Kitchen** should have an efficient system for delivery of food to the dining rooms.
--There should be a small service kitchen in the small dining room.
--There should be nice eating area and lounge for employees.
**The Theatre/Cinema** should accommodate small and large groups with one especially to accommodate classroom films.
--There should be a controlled entrance and easily accessible by community.
--It should be placed and designed to anticipate congestion with adequate exits.
The ensuing description of the student center schematic design centers mainly on the application of the framework within the context of the program requirements and how the framework helped or hindered the schematic design process.

In order to present the design, the application of the framework elements as related to the various levels of the student center will be discussed.

Spatial Distribution—in interpreting this element, I followed the distribution of spaces that were stratified in the spatial distribution chart (see Chapter 5, "Framework Refined").

Level I (Active, Formal Regional)

*Theatre/Cinema -- oriented to Columbus Avenue, the SW regional community, the bus stop and transit stops.
  -- the direction of the pathways into the center and relationship with the geometry of the theatre/cinema from invites and leads students and visitors into the atrium.
  -- the formal garden reinforces the formal traditional image of R.C.C.
  -- placed so as to take advantage of slope direction.
  -- storage area shared with Humanities drama department, which are immediately adjacent.

*Community Relations Room -- This space was added to the program and allocated to the first level near Columbus Avenue to relate to the regional and neighboring community.
  -- It was placed near the entrance to the LRC to reflect the desire of the RCC for the com-...
LEVEL-1

scale 1:20 "PARKING AND SERVICE"

Cars and Service

Service area

Loading

Bookstore

Workroom

Kitchen

Cars only
Section ③—⑩  Student Ctr. Schematic Design
Scale 1" = 40'

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munity to participate in the academic program.
-- Placing the LRC entrance in the atrium of the student center would take advantage of the opportunities to control the access to the LRC (especially at night).

*Bookstore -- Located on the first level to conveniently serve the regional and local communities.
-- immediately off of student street for student convenience.
-- should include a small newsstand and souvenir/card shop.

*Ticket Facility/Check Room -- placed near theatre/cinema adjacent to a single open space to prevent congestion via que line.

*Information -- placed in direct visible line looking from main entrance and near primary vertical circulation.

*Concession -- situated at interface between entrance of theatre/cinema and outdoor plaza to accommodate audiences but also summer cafe.

Level 2 (Active, Student)
*Recreation Rooms -- located on student level and directly off of student street to provide maximum access.
-- extends outside onto deck with landscaped seating area.

*Lounge -- highly active seating and socializing area related to recreation rooms.

*Dining areas -- conveniently located off of student street with direct access to plaza for summer outdoor eating.
-- loft created to break up space and separation of medium and small dining rooms and also to generate a variety of views.

Level I-I (Service)
*Kitchen -- located on underground level to accommodate service with food transported to second

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level via dumbwaiter
-- shares main entrance with bookstore, workroom.
-- space allocated for lounge and dining area for kitchen staff.
*Dining Manager's Office -- located in kitchen.
*Bookstore workroom -- situated on service level to accommodate supply deliveries transported to bookstore via dumbwaiter.
*Bookstore Manager's Office -- located in bookstore work room.

Level 3 (Quiet, Informal, Neighborhood)
*Body Development -- placed directly off of student street for convenience and direct access to vertical circulation.
-- vertically accessible from recreation/lounge area via stairway for convenience.
-- directly adjacent to outdoor deck which can accommodate exercise during warm weather.
-- includes shower (small) and dressing area.
*Lounge -- mainly related to third floor node with area allocated for periodical seating area and use by office staff.
*Student Coordinator and Assistant
*Alumnae Office
*Bookkeeper -- located off node for easy orientation with ample fenestration.
*Publication Room
*Communication Room -- easy access from student street with plenty of storage space.
*Student Work Area -- located on quiet level to accommodate studying and directly off of student street for convenience.

Student Street -- the student street should reflect the activity levels (quiet, active; formal, informal) like the spatial distribution elements, as related to the community interface location as well
as provide efficient movement flow. The physical image of the street will resemble that of a real street reinforced by planting, color, photos, and other graphics. Runs through student center node on each level.

Level 1
*Here the street should be very active catering to the access needs of the regional community in addition to students. Direct visual and physical access to plaza.

Level 2
*Passing through on this most active level of the street will be a variety of views into the dining area, atrium, plaza and recreation rooms. Walking up from Level 1 one can step down into the main dining facility or up 1/4 level onto the loft or the deck. A small cafe situated near the lounge will serve coffee and small snacks. A reading area related to the LRC will be accessible from this level with a view into the atrium.

Level 1-1
*Still maintaining the character of a real street, the street will primarily connect the service node to the parking bays. Safety for pedestrian movement will be emphasized as will natural lighting related to the position of the street.

Level 3
*From this less active level one will have visual access into body development and down into the second level cafe, the atrium and dining. Direct access to and from the node into the street will be provided.

Nodes
With nodal space function and stratification related to that of the community interface charac-
ter, as well as acting as the student center link off the student street, each node contains the following common functions:

-- vertical circulation
-- bathrooms
-- telephones
-- display and information
-- lounges

**Level 1**
*The active three-string atrium provides the focus for this active, formal node from which one has maximum visual access to the door plaza, Centre St. and Columbus Ave. A small lounge near the community room will accommodate its functions as well as for theatre audiences and visitors. A level change accommodates the need for separation of the spatial functions off of this node.

**Level 1-1**
*Primarily accommodating vertical access from parking to the upper levels, this major node should be well-lit with the use of colorful graphics to aid in orientation. It serves as a focus for those who park in the immediate vicinity.

**Level 2**
The views into the dining from plaza atrium and the cafe provide the functional focus for this active node.

**Level 3**
*Characteristically quiet, the third level node views into the second level node, the atrium and the plaza in addition to the informal lounge which also has small contemplative indoor garden.
Open Space

While on most levels the nodes act as indoor open space (the atrium being the major interior open space), the plaza not only serves as the major outdoor space for the student center but is one of the three major open spaces in the framework scheme. The plaza is directly visible from the Columbus Avenue entrance and from Centre Street. Its activities should be oriented toward uses by the student and local communities. The informal plaza should accommodate passive and active uses so that one may have the choice of participating actively or from a distance. Approaching the plaza from inside the atrium one passes the concession stand and a small cafe. An amphitheatre stage is created where the plaza begins to gradually step up toward Centre Street. Between the passive green area, one can sit on walls (3 1/2 feet high) which step up and view down, into the court. Particular attention should be paid to landscaping and the incorporation of natural elements to provide an enjoyable experience while in the plaza. A wide pathway leads directly to Centre Street inviting Highland Park residents into the Student Center. The two existing buildings on either side of this pathway will house RCC guests and perhaps a small inn and restaurant managed by students to be primarily used by the community and RCC guests and faculty.

As previously stated, the open space off Columbus Avenue at the Student Center entrance will reinforce the formal image of the college. Keeping with the informal character of the plaza and the formal character of the garden, the respective building facades on either side of the student center should reflect these images. The size and quality of fenestration on the Columbus Avenue side will take advantage of the SW sun exposure with the plaza facade providing ample views utilizing smaller proportioned windows to
cut down on the NW winter wind infiltration.

Parking and Vehicular Service
See discussions of elements in preceding paragraphs as related to Level-1.
FRAMEWORK
EVALUATION
AND
CONCLUSIONS
Utilizing the conceptual framework as a basis to approach the initial stages of the urban design process was advantageous in developing the site plan and organization of the RCC. Organizing each phase of framework development was the key in the success of its application. The schematic design of the student center was successful in giving the campus architect a view of what elements in the framework lacked definition or were no longer useful. From the schematic design test, the first indications of the Next Steps or phases in design development were revealed. The design easily fulfilled the prescribed criteria because the framework helped in addressing many specified issues that were present. The following paragraphs evaluate the value of each aspect of the development phases.

**THE ISSUES**

Summarizing the issues in a structured way was very helpful in zooming in on one or two elements on which to base the initial concept diagram. This is a critical point in beginning stages of the design process because the elements should be capable of application throughout the initial design process. Therefore, it is important that these elements be carefully chosen.

**THE FIRST TOOLS**

The framework elements should be capable of translation into alternative concept diagrams and quick sketch plans. Special attention should be paid to the deterioration or non-applicability of the element with the next step being a new choice of tools. A set of criteria could be developed to
check the progress of framework application in terms of what information and level of organization the developer expects to achieve at this point in the process.

INITIAL DEVELOPMENT

When applied to the site and program, the elements are translated into the basic conceptual framework. The elements should remain in their most simple and instinctive stage. This factor helped in creating an easy transition of the site plan form the conceptual framework. Understanding the psychological orientation of the various communities (and the relationships therein) was a major plus in the success of the framework application. The community attitude as assumed by the designer became an invaluable element and resource in itself. The considerations concerning image/attitude should serve to generate the residents' feelings of continuity and tradition of place as well as instill a sense of personal confidence and upward mobility in each individual man and woman. In other words, one discovers how germane the framework is to the beginning design phase. For it is at this naive and intuitive stage in the urban design process that the quality of the design is directly related to the quality of human life. The site plan was instrumental in understanding the framework elements in greater detail which used to further refinement.

REFINEMENT

Approaching the framework refinework and analysis with a specific point of view (i.e. the role as campus coordinator) aided in structuring the method for study as well as in the process perse. A structured format for organizing the element analysis and refinement is helpful in simplifying the information for maximum use.

The design needs as prescribed in the issues
were for the most part addressed by the interpretation of the framework into physical terms. A specific framework criteria question concerned the extent to which the framework could or should be translated into physical form. Synthesis of the framework deficiencies revealed a common denominator of physical structure. From the first analyzation/refinement phase of the process, I concluded that a structural system of some standard dimension should be one of the major elements. The structural dimension would be determined from extracting the common relationships between the program's spatial functions. I had difficulty in summarizing the structural element of the framework, and have since concluded that it was not necessarily an appropriate point to be concerned with the level of detail of the structural element. I do believe however, that the structural element would have been a valid tool in itself to use as a basis for the initial framework development.

Other framework deficiencies that related to structure were the issue of future college expansion and the integration of use and structure between the existing buildings on the site and the new college facility. These factors in addition to the structural dimensions and other questionable issues established a basis for my thoughts concerning what the NEXT STEP would be in the application of the process. In doing so, I have learned that it is highly possible and advantageous to develop a simple ordering device that can be carried through to actual building form design in the later stages of the process.
A revised site plan would be in order before attempting the second phase of the framework development. Because the second phase would involve a more physical application, a revised site plan would provide a basis for establishing an additional layer of elements.

In the cases of both the applications of the specific RCC framework and the conceptual framework method as a valid point of departure in the decision process, a second phase of framework analysis and refinement is appropriate as a next step. In summarizing the various stages in the first analytic phase of the design process in terms of sharpness of concept, one could intuitively arrive at a basis to structure the second analytical/refinement state (or layer) of the conceptual framework. The framework at this point in the process, becomes more physical in character than that of the first phase. (D. Lee diagram 1)

For instance, the degree of clarity or sharpness of the concept as derived during Environmental Design Studio II (Fall 1976) would be characteristically fuzzy and less-defined. The thesis investigation would represent a sharpening of the concept in itself including the first stage of real physical definition and dimension. (D. Lee, diagram 2.) The second phase of the framework analysis/refinement would more sharply transform into a physical representation of the initial concept. (D. Lee diagram 3.)

The elements that would structure the second layer of the specific RCC framework are as follows: The generation of a basic classroom and support cluster and a nodal (or core) cluster that would
Studio 1

Thesis 2

Next Steps 3

Diagrams by M. David Lee
be more physically designed. From this study, a spatial module (or series of modules) could be developed, thus creating the basis for actual built form. The classroom and support cluster (i.e., faculty offices, prep rooms, storage, wet walls, etc.) would be derived from the minimum and maximum square footage dimensions and requirements of the program spaces; as well as from a basic arrangement of the cluster element adjacency requirements. The nodal core cluster would be composed of common spatial requirements related to vertical and horizontal circulation and basic support spaces such as bathrooms, telephones, storage, departmental information and staff support, etc. To gain a more clear understanding of the spatial integration of these two elements, the administrative organization of each building component as relative to that of the college as a whole should be considered.

It would stand to reason that the spatial cluster and nodal core elements would be related and congruently sized in conjunction with the building structure. A uniform bay system and structural section would be sized according to the spatial needs of the clusters. The structural system should be flexible in accommodating the student street and the other open multi-story spaces like the student center atrium.

The RCC program calls special mechanical treatment in several aspects. The Learning Resource Center, Occupational, Business Administration and Science and Math sub-colleges with their many technological prescriptions requires efficient distribution of a serviceable and simple integrate HVAC, electrical and plumbing system. The mechanical system would be integrally designed with the structural system.
The integration and refinement of these elements with those of the primary framework lecture should evolve into the most physical translation of the framework. Implications generated from the second framework layer with regard to size and image could help in creating a third framework layer that would be even more specifically oriented to form, materials, types, and size of fenestration, landscaping, interior design, etc. At this point the additional element of user participation should be structured, implemented and integrated into the third phase or layer of the framework. In the case of the RCC scheme the user group should be composed of:

-- a cross-section of student users whose lifestyles and academic schedules encompasses a variety of times, situations, and spatial needs
-- faculty and administrative staff
-- maintenance and support staff

-- the regional SW Corridor community
-- the local neighborhoods--Highland Park and Mission Hill
-- representative from the State Regional Board of Community Colleges
The design development of the conceptual framework is an overlapping process of analysis and refinement. In the case of the RCC framework the major phase of development can be summarized in the following manner: (see p.139 - Process Development Diagram.) The points of overlap, signifying framework analysis and refinement, act as links in the design process to get from the initial point of departure to the architectural solution. The conceptual framework does provide a basis for the design process but more importantly it can serve to house the issues and designer's concepts into a final architectural solution.

Although the roles of campus coordinator and individual building architect supplied a basis, the designer's point of view (considering client desires and user needs) in the RCC scheme, other devices for approaching the problem could have been investigated. As one can see, the integration of the designer's point of view, the statement of the problem and issues (as related to program and context), the framework design (in terms of concept, analysis and refinement) and the design implementation evolves into a design process structure in itself. Relative to the designer's point of view, making decisions as the placement of the dividing line between roles is key in the process development. As a tool, it becomes an element used to direct and focus the designer's concept although the fact that the designer can change roles when necessary adds a flexible dimension to its use.

The overlapping areas, although consistently appearing have flexibility in terms of the amount of overlap and the level of analysis and refinement
needed at that point of the framework development.

The overriding factor that surfaces from this analysis of the physical/conceptual framework method is STRUCTURE. The process in itself has a structure. For instance, although I did not fully comprehend the use and position of the statement of the problem and issues with the total process, I inherently struggled at the point of departure to organize them in some fashion. This structuring of the issues was key in contributing to the success of the process as a whole.

As shown in the Process Development Diagram, the thesis investigation is included as a phase in the design process. Assuming that, if in fact, as an urban designer in the "real world" I were to apply the conceptual framework method to a design problem, the first phase of analysis and refinement would be similar to that as established in the thesis. I conclude that the entire process from the initial concept development in Environmental Design Studio II through the possibilities for design implementation would be a valid procedure in solving a complex urban design problem. Toward the end of my thesis process, I discovered a letter by Joe Passonou with which I would like to conclude.

In my last letter I discussed boundary problems. (Big fleas have little fleas, Upon their backs to bite 'em, Little fleas have lesser fleas, And so, ad infinitum.) It is equally a platitude, but no less important because of that, that design is problem solving (whether it is also other things is not important to this discussion.) The following is a version of the standard "problem solving" cycle:

Such simplistic views of "design" are useful to students and teachers, but not to mature architects, who will have operational definitions of design. But even the mature urban designer needs such diagrams because he is the agent of a far more complex and demanding client than is the architect practicing in traditional ways. Even if he arrives at design solutions intuitively
(which he certainly will) and rapidly, he must reconstruct and explain the method by which he arrived at that solution.

In reality, the primary motive in relation to this thesis investigation was to attempt to document my design process. I wanted to organize my thoughts into a structure that could be used again in a real-life situation. In my future professional capacity, I will certainly be able to utilize my thesis as a tool to start picking away at a problem. Through the years, I hope to fine tune the method as stated in this thesis.
Bibliography


Resources


[3] Ibid., p. 3-2.

[4] Ibid., p. 3-4.

[5] Ibid., p. 3-6.


[8] Ibid., p. 108.


ROXBURY COMMUNITY COLLEGE - SURROGATE SPACE PROGRAM

SUMMARY

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### Develop Mats. Lab.

- 3  60  2400

### Development Stor. & Supply

- 1  14  150

### TV Visitors Area

- 1  14  160

### Television Control

- 1  14  170

### Television Studio

- 1  10  1000

### TV Dreg. Rms.

- 2  20  300

### Video Tape & Master Control

- 1  14  280

### TV Storage

- 1  20  600

### Photography Studio

- 1  14  200

### Student Carrels

- 1  40  6250

### GENERAL SERVICE & CIRCULATION

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- 10  60  149

- 10  60  150
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Multiple purpose area providing:
1. Running Track
2. Tennis Courts
3. Basketball Courts
4. Volley Ball
5. General Exercise Area

Steam and Sauna Rooms may be provided at 200 NSF ea.
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11340 NSF

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#### INSTRUCTIONAL SPACES

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