

FIFTH YEAR FINAL PROJECT DESIGN RESEARCH - 1983

BUILDING DESIGN AS A CONTRIBUTOR TO URBAN SPACE

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## DEFINITION OF PROJECT

Joseph Lluís Sert, at the 1981 A.I.A. Convention, said "I have been an optimist, a believer in the positive sides of life, nature and beauty, a constructor. That is why I joined this profession and have continued my practice against great odds, in the midst of wars and revolutions."

"I would not have done this if I did not have faith and hope that humanity will discover new ways to build not only better structures and buildings, which it has partly done, but to find methods of integrating them as parts of improved, more balanced and enjoyable environments, enriching the quality of community living."

He continued saying that "The architectural vocabulary today is more than ever before tied to the urban condition, to an urban vocabulary, to urban design."

Sert's comments seem appropriate for the thesis project that I have chosen to pursue. Previously titled Generation of Urban Space Through Building Form, it now has been thought through much more clearly and I feel that the title should be Building Design As A Contributor To Urban Space. After doing some research I became concerned that building form was probably an incorrect term. Much the same that the phrase generator of urban space gave me similar problems. Looking typically at the Inner Harbor, I do not believe that any one building or building form was capable of generating that urban environment. Each

building was capable of making a major contribution. The project that I have chosen, the design of a major library for the Central Business District of Raleigh, is a proposal to try to give a heart to an existing urban environment. The Fayetteville Street Mall area as it stands now is a long pedestrian walkway that stretches for four blocks from the Capitol to the Civic Center. A pedestrian mall of this nature is quite conducive toward a market place setting. The kind of urban place such as Faneuil Hall of Boston is such an example. There are the long pedestrian avenues that people so enjoyably make use of, but this type of urban space is created by a different set of rules. Here we deal with the market place, a natural attraction for people. Fayetteville Street Mall lacks such a space. Being the central business district that it is, both sides of the mall are lined with major banks, office buildings, and department stores that try to dominate the eye. Where there might be the occasion that an open space occur between buildings it obviously need be filled with either a parking lot or a tree and a flag pole. These buildings all sit there with one of their feet sticking out into the pedestrian sidewalk searching for their own identity. If one were to close his eyes, be placed somewhere along the mall, say 100 block, or the 200 block or maybe the 300 block, it makes no difference, every block looks the same except for the name hanging from the tip of the shoe. The idea of fountains, benches and trees is a respectable attempt to try and create an urban public space. The thesis that I hope to prove is that a building design set into

the context of an already existing urban environment can create a sense of center for this public mall. The people who are on the mall are usually there because it is where they work. The state government, the big banks, the law offices, the county courthouse, all of these activities consist of people with an above average level of intelligence. The mall often is location for music festivals, noontime concerts and other cultural activities. The idea of a Public Library creating this heart that I speak of comes naturally. At the heart of nearly every campus in America sets its library fronted by a public plaza or open space. The New York or Boston Libraries sit in similar situations, in that they tend to control the activities that surround. Such a library set in the context of Fayetteville Street Mall could become a focal point for the on going activities of the mall. Giving the mall a center begins to scale down the long linear street of trees that now exist. Chloethiel Woodard Smith speaking at the International Conference of the Commission on Town Planning, in 1970 stated "If we were to talk together for many days, we could not begin to describe all of the many scales of city places that we have seen ( ) thought about. Ceremonial spaces and market places, great formal squares defined by great institutional buildings, small squares where neighbors meet beneath the trees and watch the fountains play, promenades where tree lined spaces define special places for lovers to walk - great avenues where bands march and dancing horses delight the crowds along the route." I intend to propose a solution that will create a sense of place, a

sense of scale and as in the words of Sert " --- find methods of intergrating them (buildings) as parts of improved, more balanced and enjoyable environments, enriching the quality of community living."

## PROJECT REFERENCES

Creating a program for an urban space is not as easy as the square footages for a building would be. The major goal of such a design project would be to create a solution that people could enjoy spontaneously, without thought, and yet sense a feeling of community. I think that goals can be stated in the beginning with respect to recognition of accomplishments of other successful urban spaces.

In looking at other urban spaces that work well, places such as the Inner Harbor, and Faneuil Hall (already mentioned) stand out as planned designs that satisfy the requirements of urban space. Once again quoting C. W. Smith, "Today we must design places of all scales and in all places in the city - for all people to enjoy. We must design not just the great squares that are defined by powerful structures defining power - not just the plaza before the great cathedral, not just the avenue leading to a capitol dome, but all kinds of special everyday places - entered every day or passed by each morning, near the closed places where we live, or work, or go to school, or shop. I wonder if we are well-trained in the design of every day urban spaces." In the case of Baltimore and Boston so many of the every day urban spaces are meticulously thought out. Interior urban spaces, such as the lower levels of the CitiCorp building in New York, the Gallery Mall in Philadelphia, or White Marsh Mall in Maryland are all urban spaces that through planned design work very well.

In looking at the urban situation it is useful to study existing projects, but also useful are some award winning proposed projects. Looking at how, in this time of urban revitalization and emphasis on urban design planning, others have handled their projects helps tremendously to open ones mind to the range of possibilities to deal with the urban context. S.O.M.'s proposal for the Capitol Center in Providence, Rhode Island is a good example of how good urban planning can organize a scramble of buildings begin to give a sense of center to the downtown area once again. Such examples of other projects will be of the utmost importance for me in order to create a viable solution.

## SITE SELECTION ISSUES

The choosing of a site will be determined by looking at several different possibilities. The first phase of my design process will be to take a look at the different sites through schematic design solutions. In looking at the different blocks, three sites tend to stand out as possibilities. The major criteria in looking at each site involved, proximity to pedestrian mall, parking problems (existing and new), existing building that will have to be reused or torn down, and proximity to the rest of the city.

In the 100 block of Fayetteville Street Mall on the east side between the Justice Building and the now being renovated Alexander Building sits a hodge podge of Mid 50's stucco renovated retail stores. This site as in all the sites chosen for study could allow for expansion across Wilmington Street. It is not as centrally located as the other two but still merits study.

In the 200 block of Fayetteville Street Mall on the east side, the corner adjacent to Hargett Street offers the problem of the corner at two major vehicular streets, Wilmington Street and Hargett Street. Here again expansion across Wilmington Street could be made possible. Existing buildings once again are in a run down state and could be removed without hurting downtown Raleigh's historical heritage.

In the 300 block of Fayetteville Street, once again on the east side,

across from the courthouse, presently exist a huge department store, a bank and a small retail store. Removal of any would here again not destroy Raleigh's downtown heritage. The municipality of this site is the greatest of all with the County Courthouse and the Post Office on the west side of Fayetteville Street Mall. Here again this site could be expanded east across Wilmington Street if necessary.

Creation of an urban space in all three cases will deal directly with the process of entry through open space or plaza and continuing the sense of place into the library itself which contain public functions other than the strict functions of the library. The library also should in my opinion present the plaza with the image of monumental building. The building should stand both dependent and interdependent with the other buildings that are to remain and make up the context.

## LIBRARY PROGRAM

The building program for this library is a consolidation of programming material previously gathered by architectural firms and studio projects held here at the School of Design. Programming data has been researched to meet up to date requirements and presented to Val Lovette, Assistant Director of Wake County Public Libraries. On the day that this research report was due Mrs. Lovette had not had time to confirm all of the included data.

### GENERAL PROGRAM REQUIREMENTS:

<u>Activity</u>	<u>Proposed Square Footage</u>
Administration	825
Branch Services	1,650
Reference Services	3,390
Reading & Circulation Services	4,250
Children Services	2,550
Audio Visual	1,250
General Staff	1,080
User Requirements	10,380
Stacks	38,900
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	SUB-TOTAL
	64,275
Mechanical, Circulation, Restrooms (15%)	9,640
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	TOTAL
	73,915

ADMINISTRATIVE SPACE REQUIREMENTS:

<u>Activity</u>	<u>Proposed Square Footage</u>
Director	200
Assistant Director	175
Secretary/Reception	250
Conference	200
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TOTAL	825

BRANCH SERVICES SPACE REQUIREMENTS:

<u>Activity</u>	
Cataloger Librarian	175
Cataloger/Acquisitionist	175
Typist/Accessioner	200
Shipping/Receiving Clerk/ Office, Work Area, Storage	800
Processor	150
Order Clerk	150
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TOTAL	1,650

REFERENCE SERVICES SPACE REQUIREMENTS:

<u>Activity</u>	<u>Proposed Square Footage</u>
Head Reference	175
I & R Reference	175
Local History Librarian	150
Reference Librarians (2)	240
Library Technical Assistance Clerks (2)	150
Reference Circulation Desk/Check-out	300
Reference Reading Area	2,000
Card Catalog	200
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TOTAL	3,390

READING & CIRCULATION SERVICES SPACE REQUIREMENTS:

<u>Activity</u>	
Librarians (2)	300
Library Technical Assistant	150
Clerks/Pages/Circulation Desk/Check-out	400
Card Catalog Terminal	400
Reading Area	3,000
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TOTAL	4,250

**CHILDRENS SERVICES SPACE REQUIREMENTS:**

<u>Activity</u>	<u>Proposed Square Footage</u>
Librarians (2)	300
Library Technical Assistant	150
Clerk/Circulation Desk/Check-out	400
Reading Area	1,500
Card Catalog Terminal	200
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TOTAL	2,550

**AUDIO VISUAL SERVICES SPACE REQUIREMENTS:**

<u>Activity</u>	
Librarian	150
Library Technical Assistant	300
Clerk/Circulation Desk/Check-out	200
Photography & Darkroom	200
Printing Room	400
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TOTAL	1,250

**GENERAL STAFF SPACE REQUIREMENTS:**

<u>Activity</u>	
Kitchen/Lounge	800
Vault	80
Mail Room	200
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TOTAL	1,080

**USER SPACE REQUIREMENTS:**

<u>Activity</u>	<u>Proposed Square Footage</u>
Entrance/Exhibition	1,000
Periodical Reading	1,500
Seminar Rooms	750
Typing Rooms	200
Acoustically Isolated Carrels	200
Micro Film Reading Area	500
Photocopy	80 per floor
Social Lounge	400
Information	150
Book Sale	500
Auditorium	4,000
Projection Room	100
Auditor/Lobby/Reception	1,000
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<b>TOTAL</b>	<b>10,380</b>

**STACK SPACE REQUIREMENTS:****Proposed Square Footage****Stacks**

Open Stacks 20,000

Closed Stacks (Reference) 8,000

**Journals**

Open Stacks 1,000

Closed Stacks 1,000

**Periodicals**

Open Stacks Included in Reading Area

Closed Stacks 2,500

**Newspaper**

Open Stacks Included in Reading Area

Closed Stacks 1,000

**Government Documents**

Open Stacks 1,000

Closed Stacks 2,000

**Rare Books**

Closed Stacks 1,000

**Slides/Films**

Closed Stacks 1,000

**Music and Recording**

Open Stacks 1,000

**Patterns**

Open Stacks 400

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**TOTAL 38,900**

## SECTION 404—ASSEMBLY OCCUPANCY—(A)

### 404.1—SCOPE

(a) Assembly (A) occupancy is the use of a building or structure, or any portion thereof, for the gathering together of persons for purposes such as civic, social or religious functions or for recreation, or for food or drink consumption or awaiting transportation.

(b) Assembly (A) occupancy shall include, among others, the following:

Amusement Park Buildings	Motion Picture Theaters
Auditoriums	Museums
Churches	Passenger Depots
Dance Halls	Public Assembly Halls
Gymnasiums	Recreation Halls
Restaurants (large) (restaurants that accommodate 100 or more people, or that have a stage or that provide dancing; otherwise, see Section 410).	Stadiums and Grandstands
	Tents (Assembly)
	Theaters for Stage Production

(c) All buildings of Assembly occupancy shall front directly upon at least one public street or public place not less than thirty (30) feet wide, in which front shall be located the main entrance and exit of such building.

### 404.2—SUB-CLASSIFICATIONS

Assembly occupancies shall be divided into two sub-classifications as set forth in this section, both of which shall comply with the requirements for Assembly Occupancy unless otherwise specified.

(a) Large Assembly—shall include theaters and places of assembly having a working stage (see definition) and having a capacity of seven hundred (700) or more persons; also, Large Assembly shall include theaters or places of assembly having a non-working stage but having a capacity of one thousand (1,000) or more persons.

(b) Small Assembly—shall include theaters and places of public assembly with or without a working stage having a capacity of one hundred (100) or more persons but having a capacity less than designated for Large Assembly.

### 404.5—SPECIAL CONSTRUCTION REQUIREMENTS

(a) Buildings of Large Assembly with a working stage shall be of Type I or II Construction.

(b) Buildings of Large Assembly without a working stage shall conform to the limitations of use prescribed in Table 400.

(c) Buildings of Small Assembly shall conform to the limitations of use prescribed in Table 400 as modified.

(d) Gymnasiums and similar occupancies may have running tracks constructed of wood or unprotected metal.

(e) All walls and partitions for enclosing stairs, passageways or corridors (except foyers or waiting spaces) which are used for exits, or enclosing rooms used for exit purposes in Assembly occupancies, shall be of not less than two (2) hour fire resistance construction. Refer to Section 702 for other requirements.

**SECTION 1103—ARRANGEMENT AND NUMBER OF EXITS**

**1103.1—ARRANGEMENTS (DISTANCE TO EXITS)**

(a) Exits shall be so located that the distance from the most remote point in the floor area, room, or space served by them to the nearest exit, (in office buildings, hotels and apartments where floor areas are sub-divided into small spaces or rooms, the distance of travel to an exit shall be measured from the corridor entrance to such rooms or spaces) measured along the line of travel, shall be not more than specified in Table 1103, except that where sprinklers are installed throughout a building, maximum distance of travel to an exit may be fifty (50) percent greater than these tabular values:

**TABLE 1103**

Occupancy	Dead End Limits**	Maximum Distance of Travel to an Exit (Lin. Ft.)
Group R, Residential	35	100
Group B, Business, Offices	50	150
Group M, Mercantile	50	100
Group E, Educational	20	150
Group I, Institutional	30	100
Group A, Assembly	0	150
Group S, Storage	0	150
Group F, Industrial/Factory	50	150
Group H, Hazardous	0	75

\*\*A dead end occurs when a hallway or other space is so arranged that a person therein is able to travel in one direction only in order to reach any of the exits. Although relatively short dead ends are permitted by this Code, it is better practice to eliminate them as far as possible as they increase the danger of persons being trapped in case of fire. Compliance with the dead-end limits does not necessarily mean that the requirements for remoteness of exits have been met. This is particularly true in small buildings or buildings with short public hallways. Adequate remoteness can be obtained in such cases by further reducing the length of dead ends.

**SECTION 1105—MEANS OF EGRESS CAPACITY REQUIREMENTS**

**1105.1—OCCUPANT CONTENT**

(a) For determining the exits required, the minimum number of persons or the occupant content of any floor area shall in no case be taken less than specified below:

Occupancy	Minimum Occupant Content Floor Area per Person*
<b>ASSEMBLY</b>	
Concentrated Use (without fixed seats) Includes among others: Auditoriums, Churches, Dance Floors, Lodge Rooms, Reviewing Stands, Stadiums	7 sq. ft. Net
Less Concentrated Use Includes among others: Restaurants (over 100 persons), Conference and Dining Rooms, Drinking Establishments, Exhibit Rooms, Gymnasiums, Lounges, Skating Rinks	15 sq. ft. Net
Fixed seats	Count the seats
Standing	3 sq. ft. Net
<b>BUSINESS</b>	
Office Buildings, Banks, Undertaking Parlors and other business occupancies.	100 sq. ft. Gross
Bowling Alleys—6 persons for each alley (to include 15 feet of runway)	7 sq. ft. Net
Viewing Areas (without fixed seats)	50 sq. ft. Net
Libraries (Other than School)	100 sq. ft. Gross
Reading Room	50 sq. ft. Net
Stack Areas	100 sq. ft. Gross
<b>EDUCATIONAL</b>	
Schools—Classrooms and Recreation	20 sq. ft. Net
Laboratories, Museums, Libraries, Shops	50 sq. ft. Net
Vocational and similar occupancies	15 sq. ft. Net
Gymnasiums	100 sq. ft. Gross
<b>HAZARDOUS</b>	
	100 sq. ft. Gross
<b>INDUSTRIAL</b>	
	100 sq. ft. Gross
<b>INSTITUTIONAL</b>	
Sleeping Area	120 sq. ft. Gross
In-Patient Area	240 sq. ft. Gross
Treatment and Out-Patient Area	100 sq. ft. Gross
<b>MERCANTILE</b>	
Stores—Street floor and sales basement	30 sq. ft. Gross
Stories—Upper sales floor	60 sq. ft. Gross
Restaurants (Less than 100 persons — without stage — no entertainment or dancing)	15 sq. ft. Net

**TABLE 12 A (Continued)**  
**MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS**

OCCUPANCY OR USE	LIVE LOAD (Lbs. Per Sq. Ft.)
<b>Hospitals:</b>	
Operating rooms, laboratories	60
Private rooms	40
Wards	40
Corridors, above first floor	80
<b>Hotels, (see Residential)</b>	
Laboratories, scientific	100
Laundries and Bakeries	150***
<b>Libraries:</b>	
Reading rooms	60
Stack rooms (books & shelving at 65 pcf) but not less than	150
Corridors, above first floor	80
<b>Manufacturing:</b>	
Heavy	150
Light	100
Marquees	75
Morgue	125
<b>Office Buildings:</b>	
Business machine equipment	100***
Offices	50
Offices	100
Lobbies	50
Corridors, above first floor	80
File and computer rooms require heavier loads based upon anticipated occupancy	
<b>Penal institutions:</b>	
Cell blocks	40
Corridors	100
<b>Printing plants:</b>	
Composing rooms	100
Linotype rooms	100
Paper storage (50 pcf per foot of storage height)	
Press rooms	150***
Public rooms	100
<b>Residential:</b>	
Multifamily houses:	
Private apartments	40
Public rooms	100
Corridors	80
Dwellings:	
First floor	40
Second floor and habitable attics	30
Uninhabitable attics	20
<b>Hotels:</b>	
Guest rooms	40
Public rooms	100
Corridors serving public rooms	100
Corridors	80
Rest rooms	60
Reviewing stands, bleachers and stadiums	100**