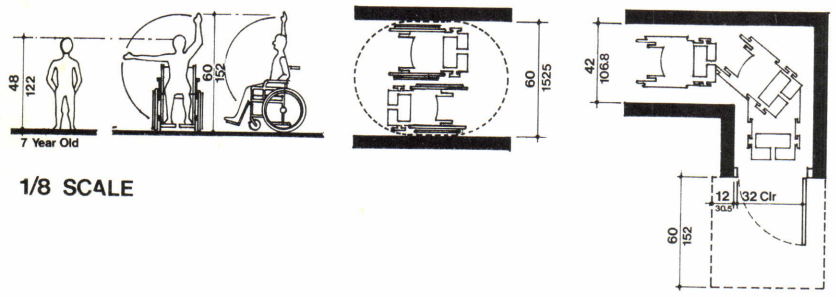
24/5

NC Architect

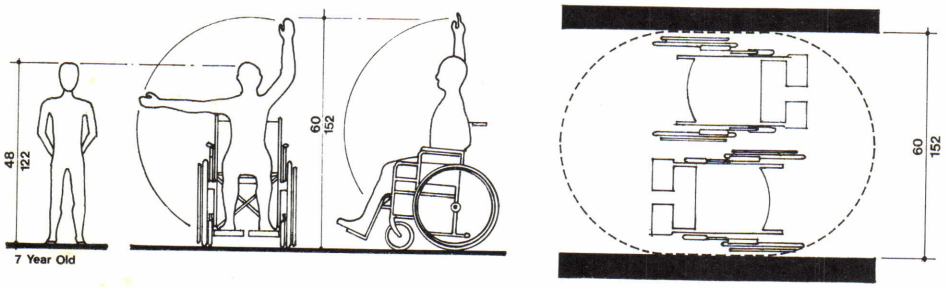
September
October 1977

Published by the
North Carolina Chapter of
The American Institute of Architects

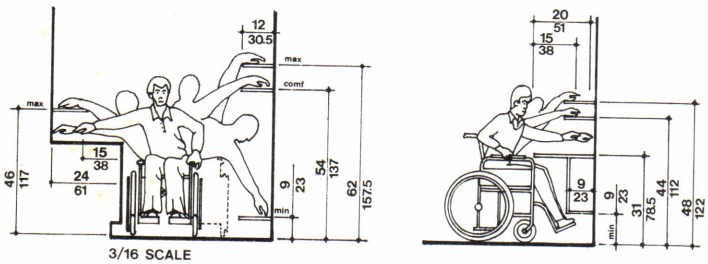
Space Requirements and Reach Dimensions for a Person in a Wheelchair



1/8 SCALE

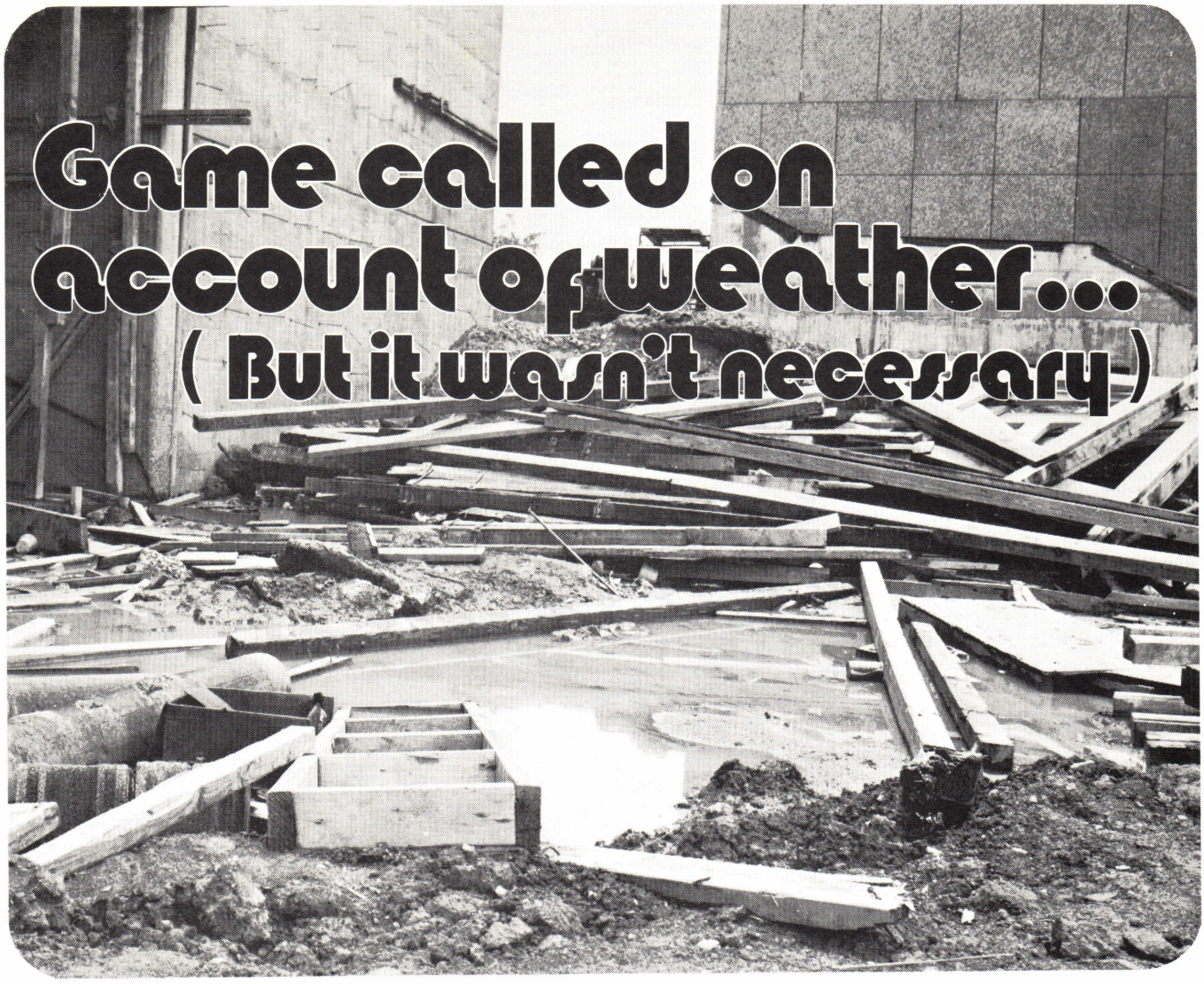


1/4 SCALE



3/16 SCALE

Chair Dimensions · 1/4 SCALE



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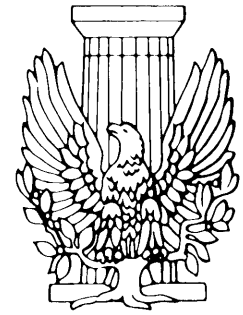

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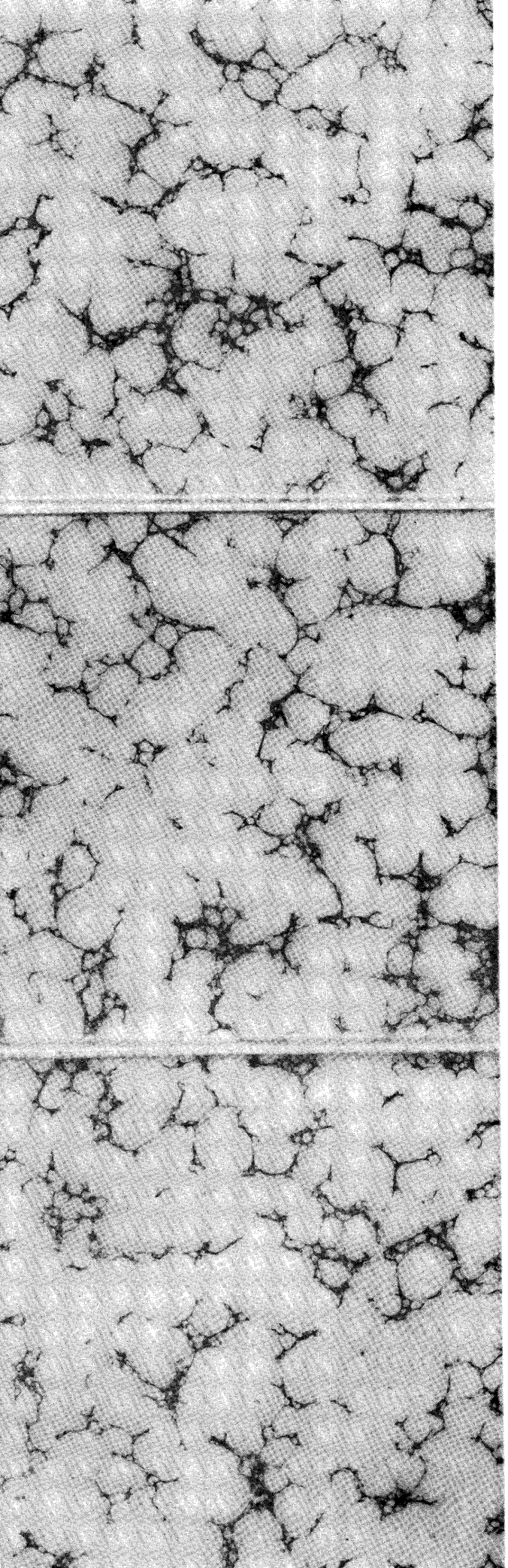

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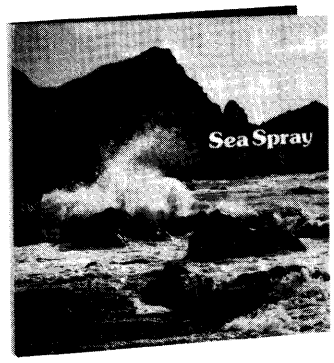

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PREFACE

At an 1886 corner stone-laying ceremony in the State of New York, educator Samuel Gridley Howe proclaimed:

> *"Language is of vast extent, and speech is only one of its powers. By speech and by print, men of our generation hold intercourse with each other. There are, moreover, some sorts of language by which the generations of men hold intercourse with other generations, and by which they converse across centuries and cycles of time. Among the various forms of language between generations, and between the ages, (architectural) monuments hold a high place.*
>
> *As men and women unwittingly, and sometimes unwillingly, reveal their character, and even their secret motives of action, by the sort of language which they use, so the generations unwittingly reveal the prevailing ideas of the men who lived in them, by the works which they leave behind them ...*
>
> *. . . If we study the monuments which a generation built, and the kind of men in whose honor they raise statues, we may learn much of the character of the people themselves."*

If future generations look to 20th Century architecture for their interpretation of the interwoven fabric and ideals characteristic of our society, what will they see? Unlike earlier civilizations who reflected their cultural inequality by adorning their monuments with chained captives walking behind the sculptured conquerors, our works will symbolize an era of cultural equality by their sensitivity to the accessibility of fellow man.

This special edition of the *NC Architect* is devoted entirely to what future civilizations may call the most significant cultural symbol in the history of mankind, i. e., the architecturally accessible environment. Accessible environments may forever mark that point in the evolution of civilization where all men, regardless of physical or mental disability, were first accepted as being equal, and were first invited to assume their rightful place within their society.

The *NC Architect* is a fitting place to address the accessibility issue, for the State of North Carolina and the architects who practice within it are internationally recognized as being both pioneers and continued leaders in this most important human rights movement.

William J. Ripley,
Architectural Consultant
INTERFACE
Raleigh, North Carolina

ENVIRONMENTAL COMMUNICATION AND ORIENTATION:

TWIN BARRIERS FOR THE VISUALLY, MENTALLY AND AURALLY IMPAIRED

BY: William J. Ripley

The Handicapping Environment

Have you ever had the bizarre experience of trying to walk through a "House of Mirrors" at a state fair or large amusement park? If so, you probably have some idea of how frustrating life can be for the more than 31 million Americans who daily face environmental orientation barriers, i.e., those Americans who have a visual, mental, or aural (hearing) impairment.

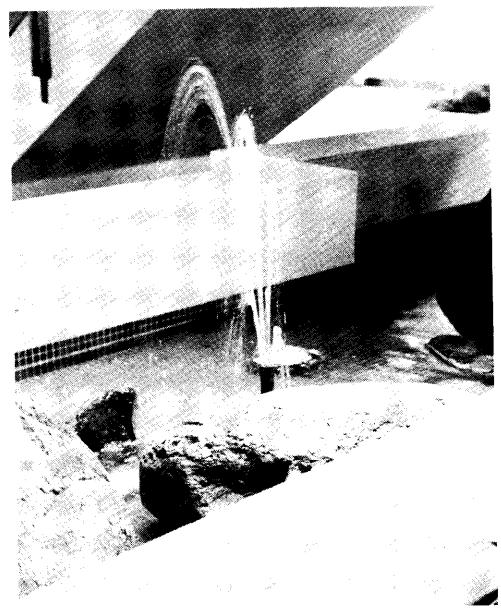
For a moment think back to the "House of Mirrors," and to your first experience within it. The "House" was relatively small, and you had some idea of where you were in relation to where you wanted to be. Yet, as you began your journey and continued to make one irregular turn after the other, you realized there was no way to maintain the *mental* "fix" on your relative position within the "House" itself. As you walked through the highly reflective corridors, you realized that everything looked alike and that there were no *visual* clues to indicate the path for your escape. As you carefully listened for the slightest hint of direction, you realized that the even once familiar *sounds* had become submerged into a frenzied sea of echoing, unintelligible noise. Frustrated and fatigued, you may have realized that your environment had, in fact, *functionally:* deafened, mentally confused, and even blinded you. Turning to the only course left, you probably began to stumble into walls and into dead end corridors until, by trial and by error, you chanced to hit upon the portal for your departure.

The "House of Mirrors" experience reminds us that we do constantly screen for familiar sights, sounds, feelings, tastes, and smells, to establish a composite perspective of our orientation within our environment, i.e., to determine where we are in relation to our environment around us. The example also pays tribute to our remarkable ability to 'compensate' with other senses, when the environment completely fails to communicate with one of our senses or when we lack the ability to use a particular sense. Most significant for our discussion here, however, is that the "House of Mirrors" experience demonstrates how we can actually become disoriented and placed at a disadvantage by an environment that fails to supply our senses with basic orientation information. In other words, this example reveals how we can actually have ability, but yet be "handicapped" by an unsupportive environment.

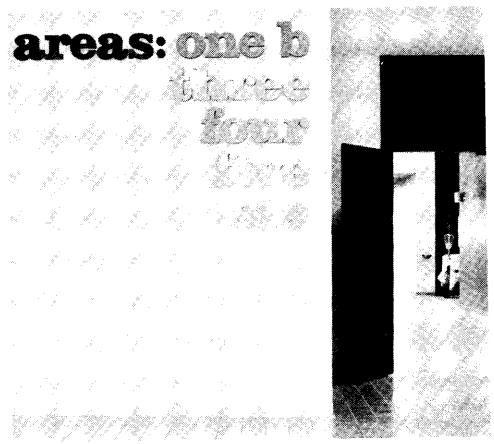
Unfortunately, a majority of the man-made environments unintentionally fail to support the 'compensating' abilities of the 31 million Americans who have a visual, mental, or aural impairment. This results in compounding their disability with an unnecessary man-made environmental "handicap." Yet, when you consider that every human being has some differing degree of sensory and mental ability, you realize that each of us is probably operating under some environmental "handicap" when we too are in these settings. Therefore, by making a conscious effort to design for these 'compensating' abilities, all of us can have environments that are safer, more convenient, and less "handicapping" to use.

Compensating Via Sight

Many people who are deaf or who have a hearing impairment rely heavily on their sense of sight to



This is an example of a good aural, as well as visual, landmark. It especially provides the visually impaired with important orientation information and its sounds are gentle enough so as to not mask out other meaningful environmental communication.



These large and easy to see letters are in a predictable location and within a direct line of sight from the entry door. The change in floor textures, colors, and sound reflecting materials help distinguish primary from secondary routes.

'compensate' for the loss of their aural scanners. Also, many people who have a mental impairment, and many of the people who have impaired vision, *look* to their visual environment to find a sense of order in the sometimes confusing events of day-to-day living. Particularly for these populations, and for all of us as well, a straight-forward environment is useful, if not essential. The following are but a few of the environmental considerations that assist in maximizing *visual* communication with the environment, and therefore provide a clearer orientation within it.

A well designed *visual* environment, unlike a "House of Mirrors," is simple to understand and communicates its intended function to all who use it. Its exterior pathways stand out by color-contrasting, landscaping, visual changes in surface textures, and by various other ways that emphasize major circulation routes. Night lighting overlaps to provide continuous pathway viewing. Lighting levels are generally doubled to emphasize pathway intersections, information displays, telephone booths, and other frequently used items. Lighting highlights vertical elements within the environment for those who, because of inner ear damage, depend upon their visual sense of vertical elements to maintain balance. Strong vertical elements are also used to 'break up' large spaces, thereby providing intermediate landmarks that assist in overall orientation.

Entrances are predictable, centrally located, and clearly identified by the exterior of the building. Entrances are also easily seen from the major pathways and streets. Once inside the entry, the environment communicates the location of the most frequent destinations by providing direct lines of sight to them. Round or curving halls and corridors are avoided because they do not provide direct lines of sight and are therefore highly disorienting.

Major interior circulation paths stand out by the use of color, visually distinct floor materials and textures, and by other visual means that clearly separate primary from secondary routes. Vertical circulation facilities, such as stairs, escalators, and elevators, are in direct lines of sight and incorporate wall or door graphics that quickly communicate their function, direction, and destinations. Stairways with doors have viewing panels to forewarn of traffic and potential danger. They have steps that are visually distinct from each other, and have handrails that are in visual contrast with their mounting walls. Escalators have non-reflective sides, which do not confuse by mirroring the continually moving belt of steps. They have steps that are also visually distinct from each other. Elevators have signal lanterns that anticipate the arrival of each car with a flashing arrow.These lanterns are large enough to adequately attract the attention of the non-hearing person and are placed in direct lines of sight from the point or points where call buttons are located. Elevator cars have emergency telephones that are easy to identify by their shape or by a corresponding symbol. These phones also have a visual signal to indicate to the non-hearing passenger when help is on its way. Arrival at a cafeteria or other special use floor is indicated within the elevator car by both an illuminated floor number and an illuminated symbol or picture.

Other graphic information systems, such as room numbers in hallways, are tactile and are located within easy reach by hand. These numbers or symbols are simple in design, contrast highly against their background, and are of colors most easily distinguished by both the color-seeing and color-blind populations. They are also of large enough size to be seen from many meters away.

Large expanses of glass, that can cause over-illumination and direct or indirect glare, are optically treated, have sun screens, or are positioned to face the less glare-producing northern exposure. This special attention prevents lighting sources from washing out communication detail and from contributing to eye fatigue. Emergency alarm indicators provide flashing directional arrows whose light intensity or frequency will not cause a light-triggered epileptic seizure.

While all sighted people rely on their sense of vision to process specific visual information, the mentally and aurally impaired most often rely on their vision to identify changes in their environment and to screen for potential dangers that may lurk there. Though a slight movement, a change in lighting level, or a split-second reflection attracts the eyes of every sighted person, many of the mentally and aurally impaired have a decreased ability to discriminate between equally competing attractors and to select the most meaningful one. The mentally and aurally impaired also try to concentrate on one particular stimulus long enough to understand the information it provides; but, should their attention be "stolen" by a more powerful stimulus before they have adequately

scanned the first, environmental confusion and disorientation may occur. Therefore, in areas of the built environment, where people are forced to make orientation decisions or where they must come in close contact with danger, extraneous visual information is eliminated. Maximum time is also allowed to receive and process the essential information needed to make a decision.

In summary, the 'compensating' sight abilities of the visually, mentally, and aurally impaired can be greatly supported by the built environment, if attention is given to providing strong visual reinforcement for the environment's most important orientation messages. This increased communication will greatly reduce the *visual* orientation barriers currently found within many of the man-made environments.

Compensating Via Sound

While people who are blind do not depend solely on their sense of hearing to *see* the environment around them, they do generally rely most heavily on this sense to *most* 'compensate' for their lack of sight. Those who have a mental impairment, and those who have an aural impairment but can still hear, also try to maximize their aural sense for enhancing orientation within their environment. The following are a few of the environmental considerations that can assist in maximizing *aural* communication with the environment.

A well designed *aural* environment, unlike a "House of Mirrors," provides distinct sounds that can be easily located, identified, and followed by the human ear. Since non-sighted orientation becomes more difficult as the size of the area increases, large areas are broken down into a succession of smaller and more easily negotiated spaces by using a series of water fountains, escalators, and other continuous sound producing "beacons" that create an overlapping guidance system of non-visual landmarks. Circulation paths stand out because they are lined with elements that *clearly* bounce sounds created by footsteps or a tapping cane back to the ears of the echo perceiving pedestrian. Also, major circulation paths through large areas are made with contrasting echo reflecting materials, e.g., using the mellower sound reflecting qualities of asphalt to "show" the way through a larger sea of harder sound reflecting concrete paving. Consequently, pedestrian traffic over large expanses of grass, plazas, steps, and parking areas, are avoided where at all possible. When such expanses can not be avoided, they are designed to produce audible messages and clear echos for maximizing non-visual orientation.

Additionally, pathways parallel and run perpendicular to streets, to provide an audible source for direction comparison and to allow the non-sighted pedestrian to better judge his distance from the many street dangers. Special attention is given to the "screening" of *noise* sources so that they do not disturb those sounds which are intended to give directional guidance. Air conditioning compressors, for example, are placed as far as possible from main circulation paths, so that their roars do not mask meaningful sounds. Air conditioning units, electrical transformers, service entrances, and other sound sources that can create disorienting noise are often screened by fences, walls, or by other means to shield their adverse effects both visually and acoustically.

This is a good example of a doorway that is easy to locate. Its echo producing recess especially assists the visually impaired, its large easy to see letters and door especially assist the aurally impaired, and its dominant male symbol especially assists the mentally impaired.

Sites are selected for their lack of extraneous noise, and building entries are positioned away from existing noise sources. Entrances are placed centrally or in a close proximity to major circulation paths. Main entrances, for example, are separated from the service entrances and are positioned closer to the main circulation routes. Buildings are identified by a distinct sound producing "beacon" located at their entry. The continuous *hiss* produced by a gas entry lantern or the intermittent *hum* produced by a flashing neon or fluorescent lamp are just two examples of entry location "beacons."

A well designed *aural* environment strives to keep noise that is generated outside from entering, and to keep sound that is generated inside from bouncing around and creating undesirable background *noise.* When outside noise threatens the acoustics of interior spaces, wall mass or density is increased to provide an effective buffer. Because glass is a poor sound barrier to incoming noise, its locations are carefully selected, its size limited, and double-paned "acoustical" glass employed. Interior noise is minimized by using sound absorbing materials such as carpet, upholstered furniture, acoustical ceiling tile, and so forth. Since some degree of sound reverberation is necessary to get a *feel* for a space, techniques that acoustically *kill* a space, such as employing both carpet and acoustical ceiling tile in a moderately used corridor, are avoided. Also, carpet with non-static electricity producing characteristics is selected, as static electricity is greatly amplified by hearing aids and is distracting to the ears of the hearing aid user.

Tactile signs, room numbers, building directories, and the like, are located at predictable and accessible points within buildings. Letters, numbers, and symbols, whose outlines can be traced easily by a finger or hand, are particularly useful since few non-sighted people read braille. Because flush doors provide little surface for echoing sounds as one walks down a corridor, doorways are generally recessed enough to allow aural determination of their locations. Elevator signal lanterns audibly *call out* the words "up" or "down," and each floor is *announced* when the elevator car reaches it. The elevator buttons are not heat or pressure sensitive but offer enough finger resistance to allow the non-sighted passenger to feel for the button he wants.

Circulation within the building is facilitated by following the directional *whispers* of overhead heating and air conditioning vents, the directional *hum* of overhead or wall mounted light bulbs, the *echos* reflected from walls, or the landmark *sounds* from a water fountain, escalator, or other stationary mechanical device. Corridor floors also differ from the general flooring in the remainder of the building, making the corridor easier to find and navigate.

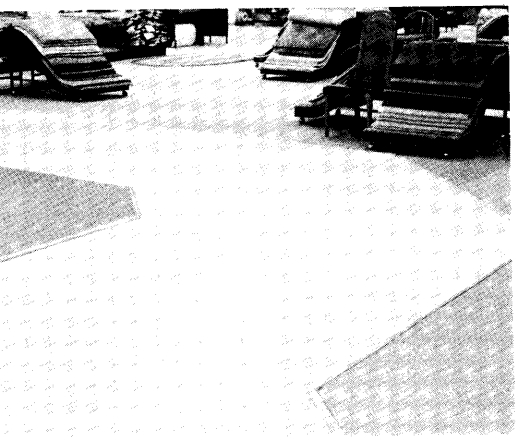
In summary, the 'compensating' hearing abilities of the visually, mentally, and aurally impaired can also be supported by the built environment. By carefully distinguishing between the advantages of directional or informational sound and the disorienting effects of undesirable noise, environmental communication of *relevant* aural messages can be enhanced, and many existing orienting barriers reduced.

Compensating Via Environmental Order

For the visually, mentally, and aurally impaired, a clear and *predictable* environment is particuarly important. Both the blind and partially sighted rely upon environmental order for increasing their ability to remember turns and, therefore, for maintaining a mental "fix" on their relative position in the environment. The mentally impaired, whose disability results in slow learning, also rely on an orderly and somewhat repetitive environment to reduce potential orientation confusion. The aurally impaired, who can not rely totally on their aural scanners, require environmental order to allow an accurate prediction of what is to come and, therefore, of where they should look for their orienting information. The following are but a few of the environmental considerations that can assist in clarifying or ordering environmental communication.

The visually, mental, and aurally impaired *now* best orientate in the right angled, grid-iron order of the urban "block," with its parallel and perpendicular streets, sidewalks, intersections, buildings and corners the easiest elements to grasp. While the audible boundaries, created by echos bouncing off of a building on one side and by the street with its distinct incoming sounds on the other, clearly contrast for the non-sighted pedestrian, the strict physical order and clear visual contrast of these very same elements *visually* assist the mentally and aurally impaired as well.

Pedestrian crossings, for example, are of particular danger to the visually, mentally, and aurally impaired. In the absence of right angled intersections, the visually impaired are



This is a particularly good design solution that communicates well to all of us as it incorporates visual texture and echo reflecting contrasts. This solution illustrates one way to "break down" a larger space, and provides many different clues for negotiating it.

Photos: S. Lee Foster-Crowder

offered few clues to determine the direction of traffic, and the direction in which they are to walk. Non-right angled intersections, like the irregular turns in the "House of Mirrors," tend to confuse all of us but pose particular communication barriers for those who are easily confused because of a mental impairment. Non-right angled intersections create a special barrier to the aurally impaired, who can not rely on their sense of hearing to determine the direction from which an unheard automobile may be coming. However, the relatively simple order of the urban pedestrian crossing alleviates most of these problems, because such crossings are situated at points where traffic runs either parallel or perpendicular to the pedestrian movement. Also, crossings occur at points where the curbs are at right angles to the direction of movement, thereby providing a very important directional message for all users. Orientation is increased by the use of raised crosswalk markings located on the street, and because manually operated crosswalk buttons, if used, are consistently located at each crosswalk.

In summary, the "grid iron" system may be a good standard to apply to environments now being designed or modified, because its pattern stresses consistency and therefore, predictability. Other design solutions can be equally acceptable if they communicate the same degree of orienting information to the visually, mentally, and aurally impaired. While dead end corridors, round or curving hallways, hidden elevators, spiral stairs, and even some pedestrian intersections may always present orientation barriers to these specific populations, the possibility does exist that the adverse effects of such design elements can be minimized by increasing enviromental communication in the settings within which they are used.

Conclusion

The problems and suggested solutions presented above will hopefully provide a better insight to the many *real* communication and orientation barriers that face the visually, mentally, and aurally impaired. However, all of the communication and orientation barriers are not yet known, and we do not yet have all of the design solutions and alternatives. Perhaps by constantly examining each man-made environment in terms of ability to 'compensate' via sight, sound, and *environmental order* (not to mention taste, smell, and touch, that were omitted here), we can develop environments that, unlike the "House of Mirrors," are safer, more convenient, and less "handicapping" for all of us to use. ■

The Author

Mr. Ripley is a partner in INTERFACE, a Raleigh, North Carolina architectural consulting firm specializing in barrier-free design. He has written many articles on, and the firm specializes in, the design needs of people with physical, sensory, mental, and developmental disabilities.

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THE ROLE OF CODE ADMINISTRATION IN THE IMPLEMENTATION OF ACCESSIBILITY REQUIREMENTS

By Theresa Raper, AIA

Access to facilities by people with physical handicaps is a relatively new component in many building codes and standards. Rarely has a building concept had such profound social implications as accessibility and rarely has the responsibility for implementation rested so firmly with local building officials or compliance agencies.

The implementation of the section of our North Carolina State Building Code which pertains to accessibility is couched in a well structured system for code administration. In North Carolina, the Legislature has charged the Commissioner of Insurance with general supervision, through the Engineering and Building Codes Division, of the administration and enforcement of all sections of the State Building Code. This is accomplished through the cooperation of local inspectors who are appointed by the governing body of the municipality or county (G. S. 143-139 (b)). Another section of the same General Statute (G. S. 143-136 (a)) created the State Building Code Council, which is empowered to both promulgate new requirements and revise old ones. (The Engineering Division of the N.C. Department of Insurance serves as staff of the Council.)

After adoption of a new code item, critical elements of the code administration process are called to the fore: dissemination of information, implementation at the local level, and technical assistance in interpretation from the Engineering and Building Codes Division. The network of communication is key to implementation of all sections, but it cannot be overemphasized in viewing the "handicapped section". This was novel when it became effective and brought into the process of the code administration more scrutiny of such aspects as site plans, circulation paths and hardware.

For effective implementation of the code it is essential: (1) that there is a local enforcement official and (2) that this person be qualified. It is the responsibility of the local building official to enforce the State Building Code through a process including plan review, issuance of a permit to build, periodic inspections of construction and issuance of an occupancy permit. The Building Code has the force of law. Each enforcement official should be profoundly aware of the legal responsibility of that position.

Currently, code changes are mailed to more than 300 inspection departments and numerous firms and individuals in the building community. The burden of actually gaining compliance rests at the local level. Many departments keep well informed and regularly have a representative present for the quarterly meeting of the Council. At long last, the 1977 General Assembly in North Carolina passed a bill requiring all municipalities to hire building inspectors and to enforce the State Code (G. S. 153A-351, Section 3 (b)). This is vital. Requiring inspection does not insure quality. Building officials are now appointed by their municipalities and their qualifications are broad as you may imagine. This new law also establishes a licensing board for inspectors and requires certification. A comprehensive educational program will be established through the community college system. (Inspectors presently may or may not participate in available training programs.)

Public awareness of the requirements for accessibility has been increased. Thus, anticipation of accessibility has grown and we must deal with users who are disappointed but do have the right to access to all public facilities. Complaints are referred to the local building official — where one exists. This official should know designers, builders and owners in his or her jurdiction and, hopefully, has nurtured a positive relationship with these individuals. With a knowledge and understanding of the code and sensitivity toward both the personal problems and alternate building solutions, the building official tries to gain compliance — and access! This method of handling complaints also provides valuable feedback for the inspection department.

As building codes and standards for accessibility are promulgated, we are intensely aware of the newness of the concept of accessibility for many. A positive environment must be established in order to gain compliance with minimum standards and understanding for optimum design. There must be consistent and competent review of drawings and inspection of construction. Agencies which can aid in interpretation and can accept consumer criticism are crucial in support of everyone involved — designers, owner, inspectors and consumers. Understanding is fundamental; considerate, well executed design is essential; and cooperation is necessary. ■

TOWARD "BARRIER FREE-THINKING" DESIGNERS

By Richard C. Bell and Donna D. Palmer of BELL DESIGN GROUP

Much has been said and written in the last few years about designing for the handicapped, the disabled, and the incompetent who can not traverse our artistic spaces and monuments because of the barriers that we introduce into our designs. While the term "barrier" has several meanings, Webster's third definition —"a factor that tends to restrict the free movement and mingling of individuals"—fits the concept of this article best. This definition makes no reference to being handicapped, merely restricted.

The hue and cry about designing for the handicapped has become so loud that special rulings and criteria have been established by our bureaucratic systems to insure that we, as designers, will somehow figure out ways to slip these people into, through, and out of our designs. Yet, we, the designers, continue to be Webster's "factor" that restricts the free movement and mingling of individuals. Many designers remain insensitive to the fact that anyone may become handicapped or disabled, permanently or temporarily, at any time, and that easily navigable designs benefit us all.

As landscape architects with the background of a twenty-year practice, we have been fortunate to work as consultants with a number of architects and engineers. We have been consistently amazed that many buildings and public places have been designed with entrance ways leading to their pedestals, podiums, and platforms which can be navigated only by the most athletic. Now that there are legal standards, design professionals are beginning to seek "barrier-free" solutions. Too often, even now, these solutions are merely afterthoughts which become tacked-on appendages that satisfy the code requirements but little else.

We need solutions that not only satisfy the code but are natural, flowing, and inconspicuous designs for moving people through grade changes. In other words, we are describing spaces which we call "flowing pathways," and we use the following photographs and plans to illustrate this concept.

Example No. 1: Seventeen Eighteen, Raleigh. Whoever lives in this house is a good designer. Chances are the resident has had no formal design training; he or she simply used common sense to design a natural, inconspicuous, flowing pathway.

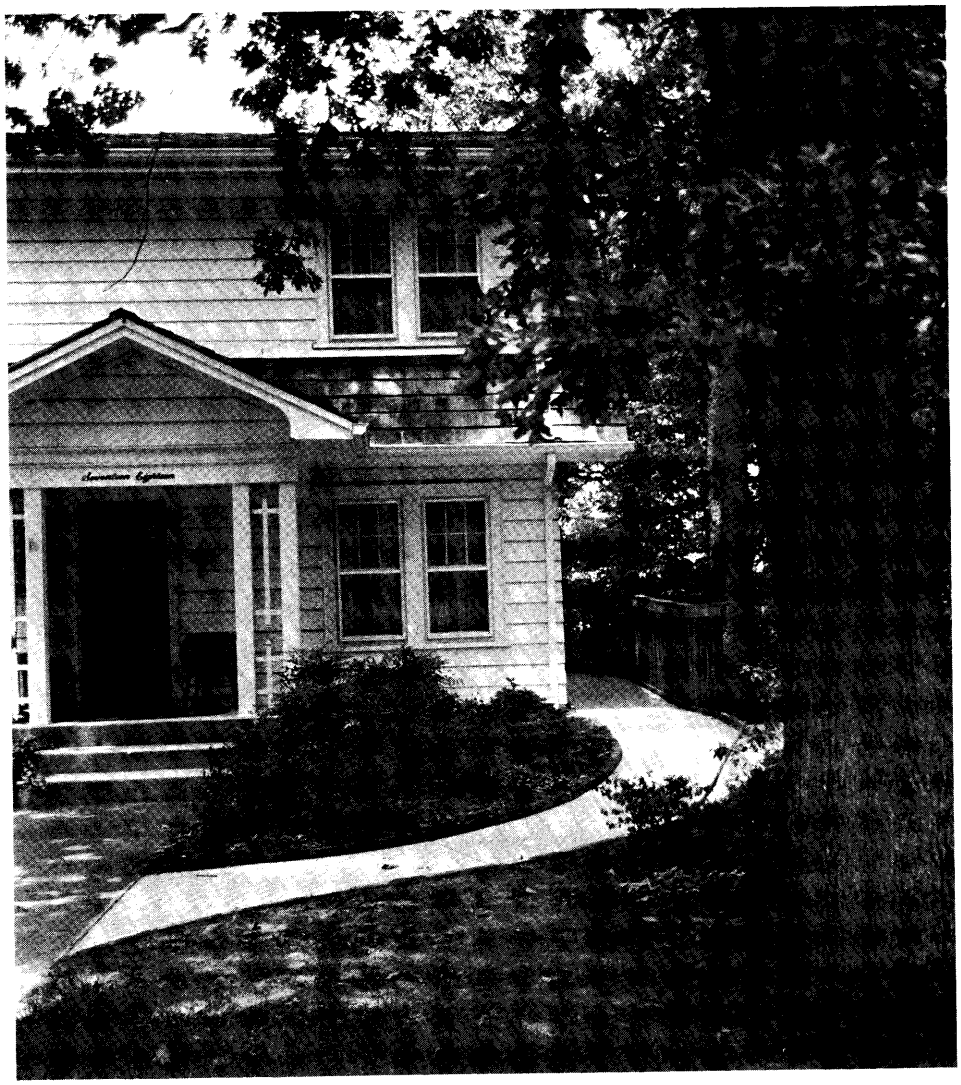


FIGURE A

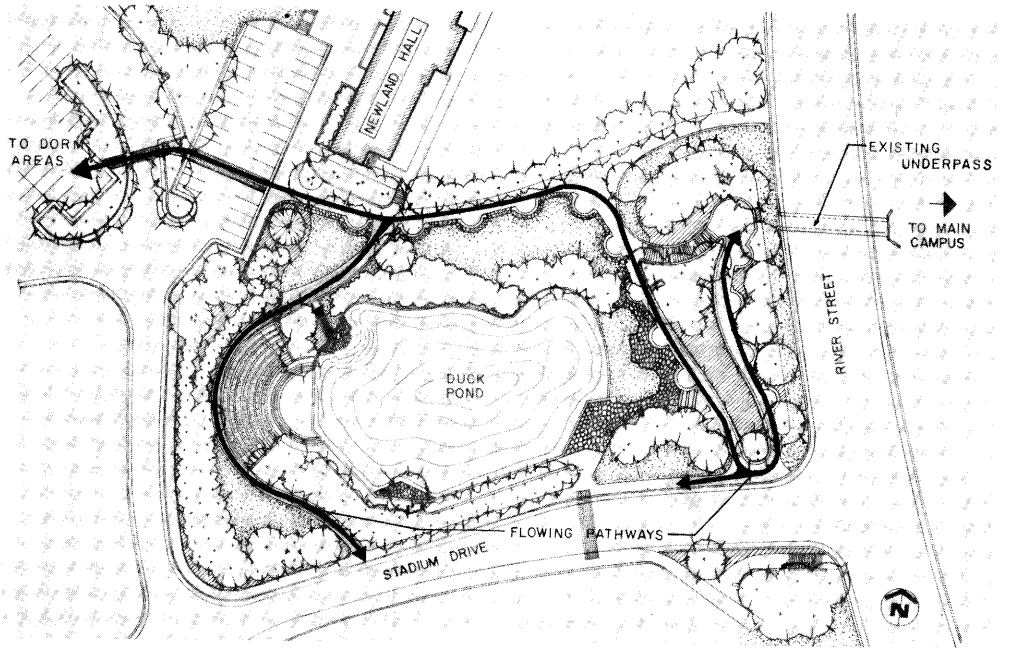
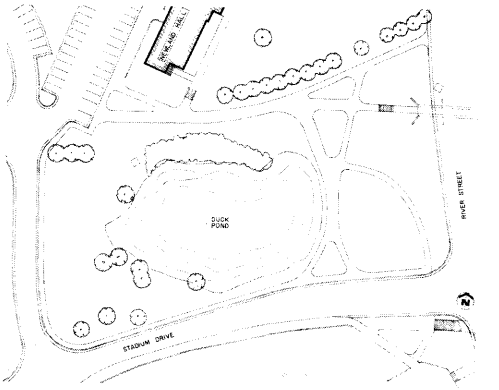


FIGURE B



Example No. 2: Appalachian State University, Boone, "Duck Pond Area". Left-over spaces are the greatest challenges. Now that we have barrier-free design criteria, we can create frivolous and beautiful flowing pathways with over-look landings for the limping or the loved, and Property Control will approve them—sometimes. Figure A is the original solution by an engineer. Figure B is a landscape architect's solution which adheres to the code while yielding a flowing, pleasing design.

Example No. 3: The Governor's Mansion, Raleigh. The modernization of our Governor's Mansion is an example of the renovation of a historically significant building with beautiful detailing. Note the "gingerbread" access ramp detail. It serves the purpose well enough, but certainly appears to be an afterthought.

Example No. 4: Building No. Ten, Research Triangle Institute. This is an example of "How to traverse the landscape according to the code"; or, "If you are in a wheelchair and you miss the end of the handrail, you end up three parking lots DOWN!" It seems an unfair situation to place any person in.

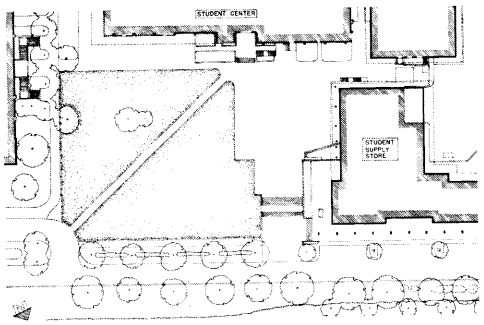


FIGURE C

Example No. 5: Student Center Plaza, North Carolina State University. The architectural solution was a series of steps and platforms, admittedly a "statement" but also a series of hazards. (Figure C)

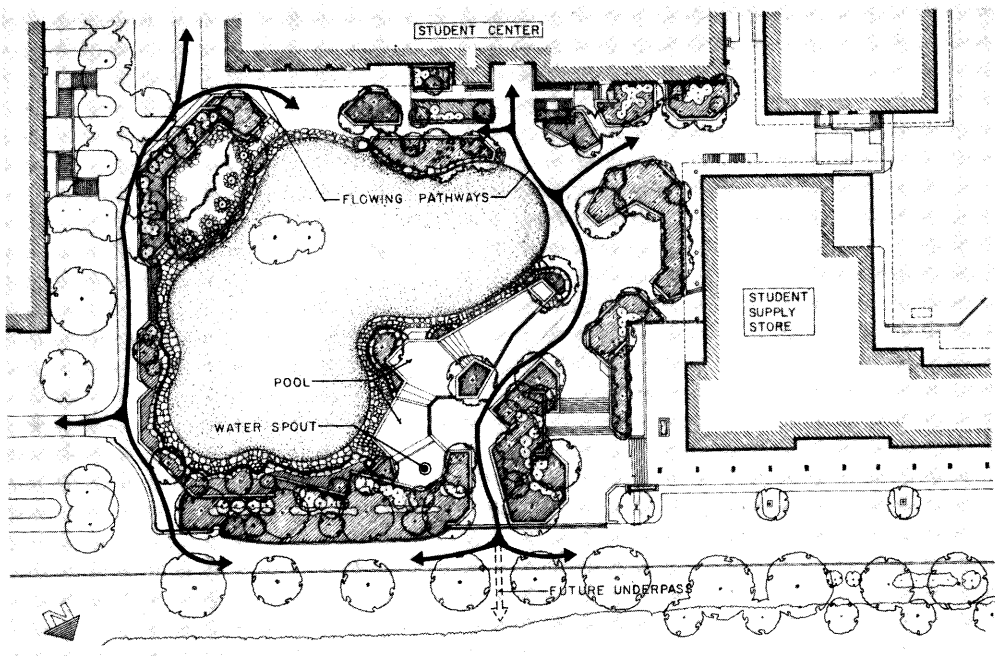
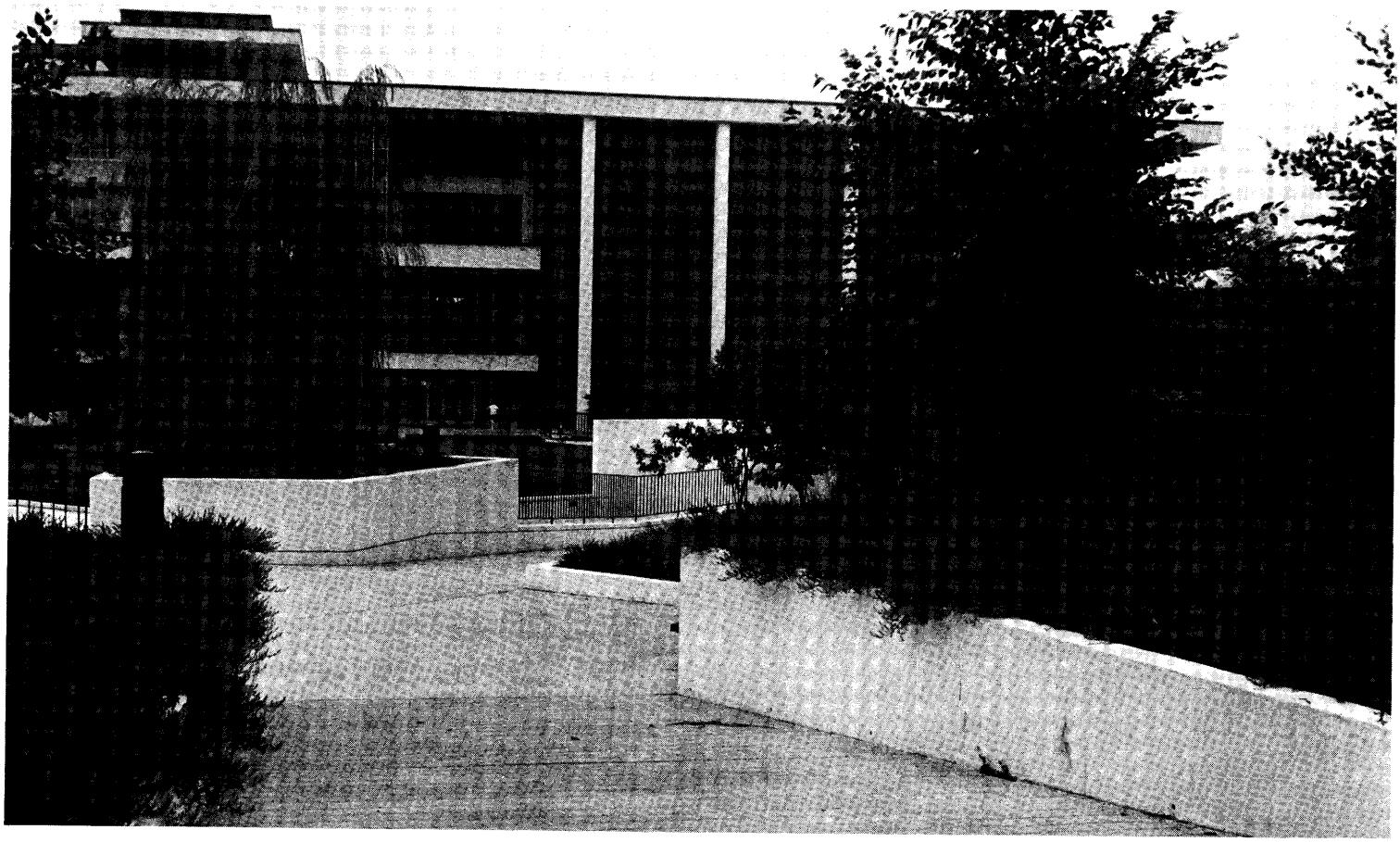
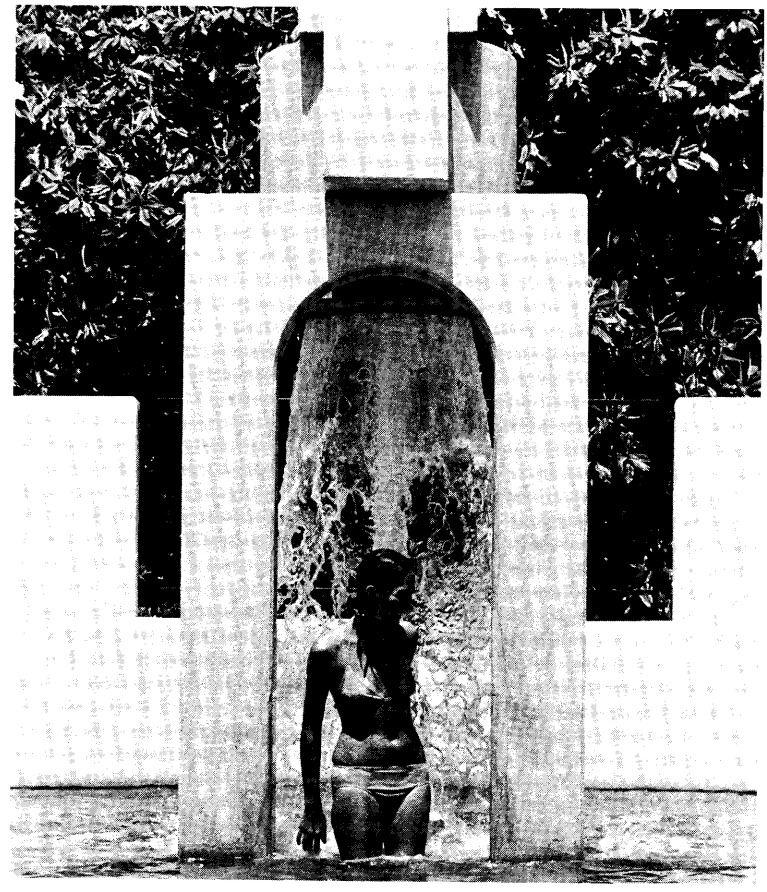
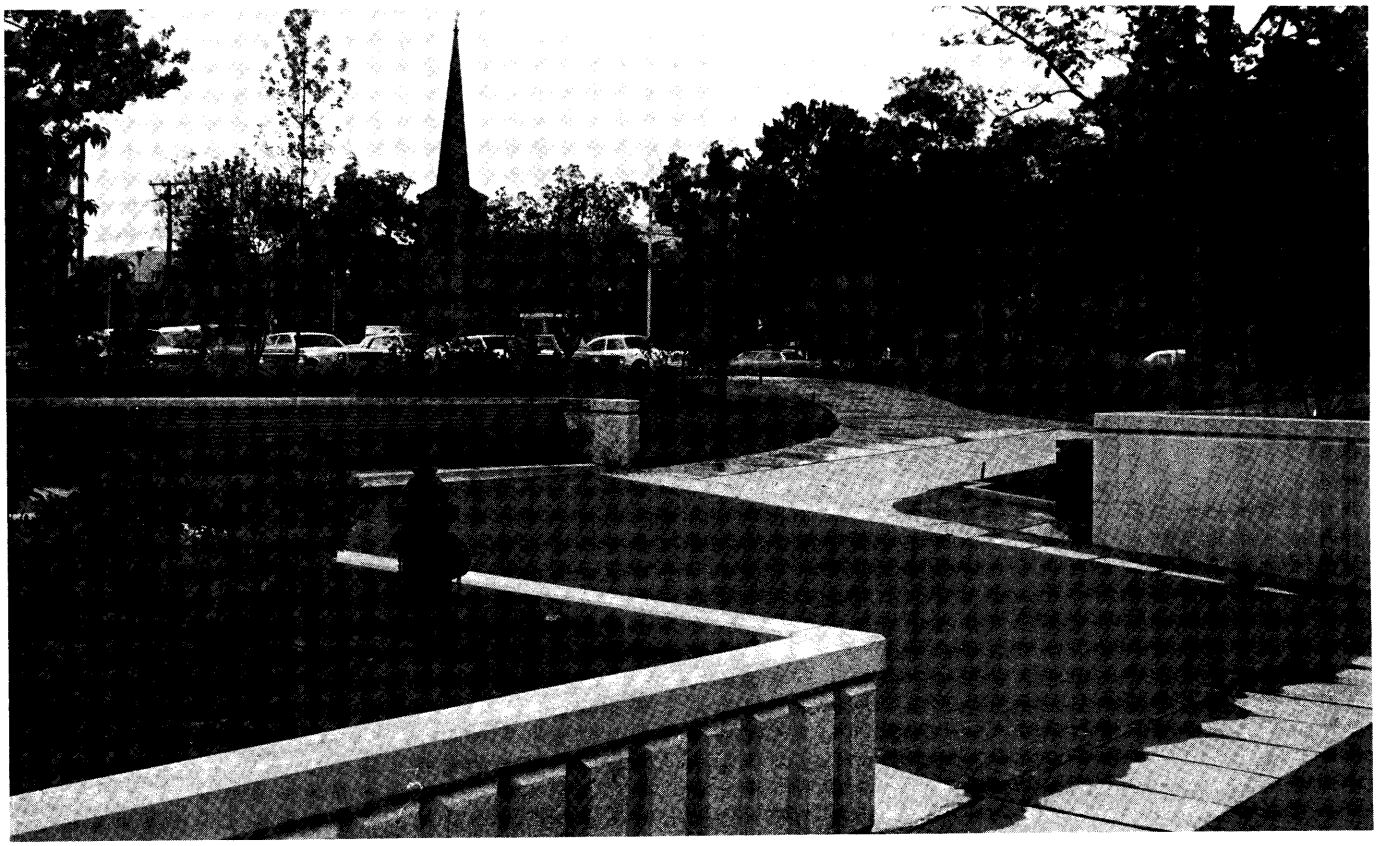


FIGURE D

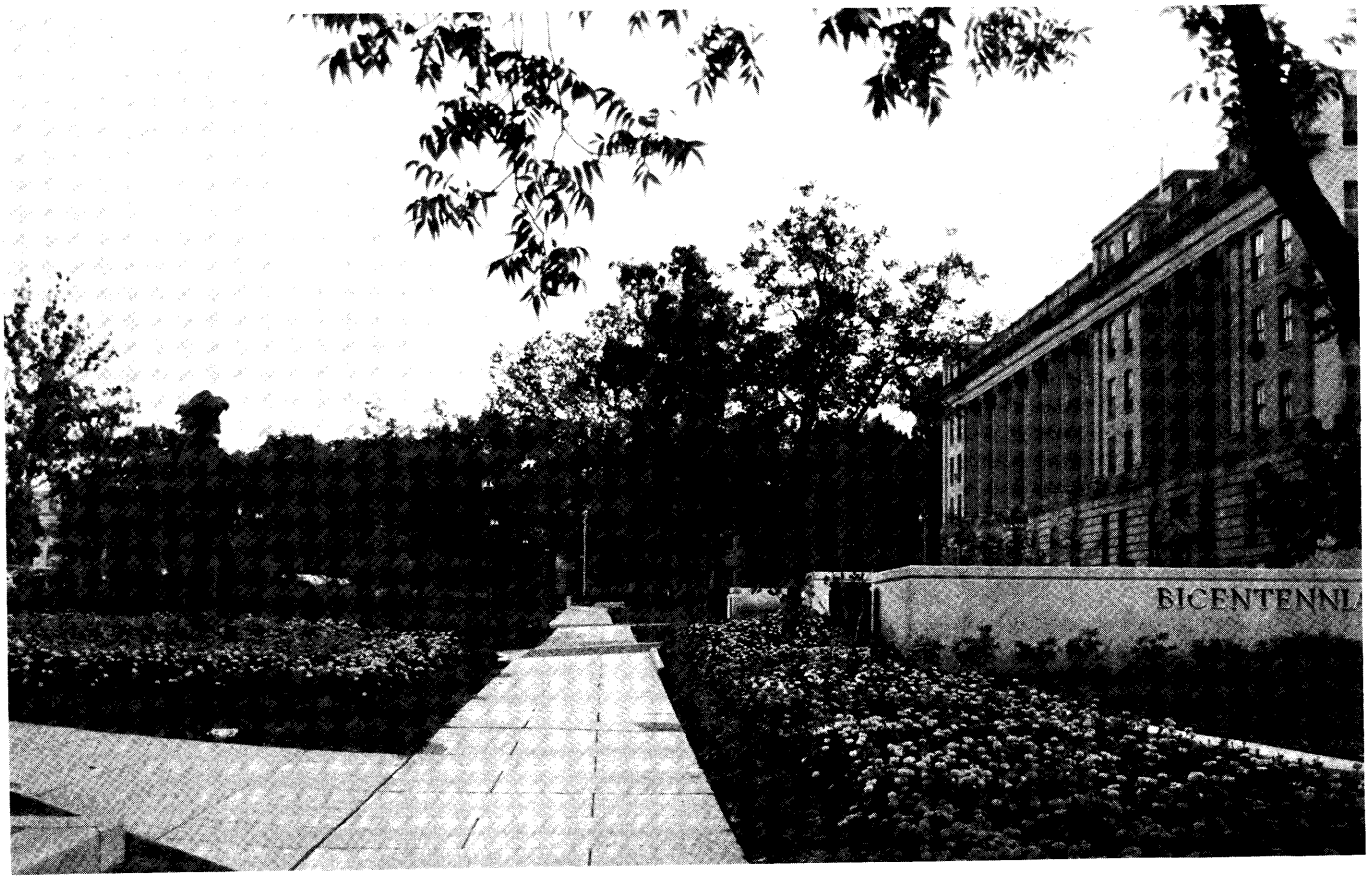


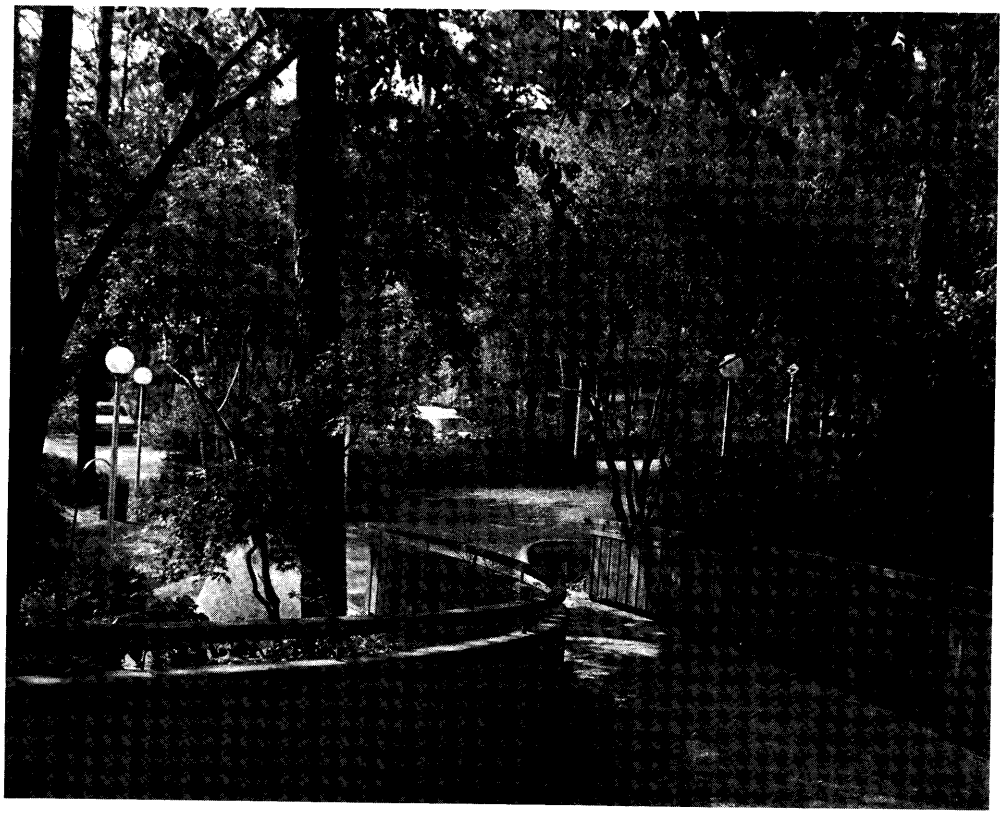
The solution: A Student Plaza. The landscape architect envisioned a flowing type of space in which the students could mingle: all students, including the handicapped and the battle-scarred athlete. (Figure D) The pool and water-spout sculpture area adds to the overall enjoyment and aesthetic appeal of the Plaza.

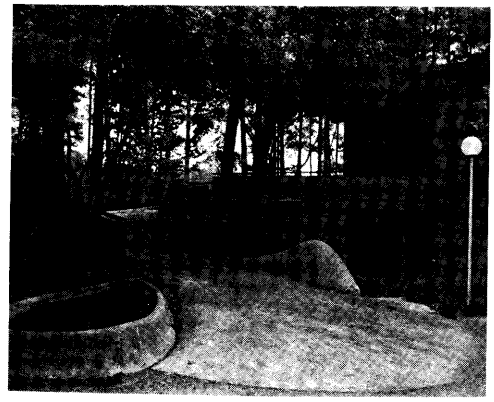




Example No. 6: Bicentennial Plaza, Raleigh. Somehow the Plaza which was our State's "Horizons" project to commemorate the 200th anniversary of our Declaration of Independence seemed the perfect place to declare our independence from obvious, old fashioned solutions when designing for the handicapped. Here is an inconspicuous solution; and Sir Walter Raleigh seems to fit in quite well with this idea of flowing pathways.

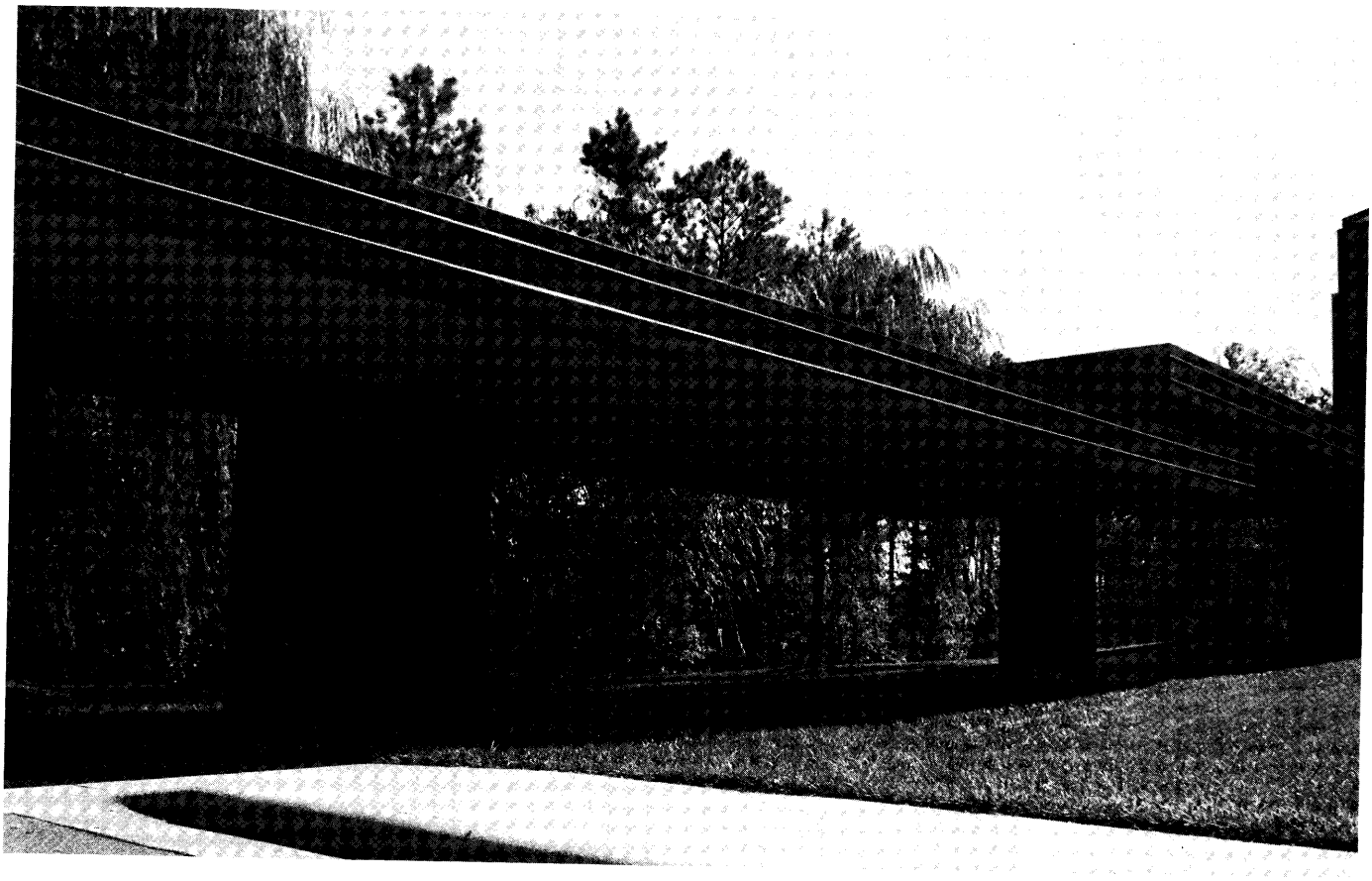






Example No. 7: Entrance to an Office Building, Water Garden, Raleigh. When this was the Garden Gallery, my wife asked, "Why can't people FLOW up into my Gallery rather than CLIMB up?" Now that the building is used as an office, the ramp makes a beautifully natural "statement."

Example No. 8: Becton, Dickinson & Co., Research Triangle Park. After a studious search of buildings which exemplified a thoughtful design of a ramp-landing solution, we found this one at the Research Triangle Park. Congratulations to the architect!



AN UPDATE
on the Handicapped Section of the North Carolina State Building Code

North Carolina pioneered in the implementation of building code requirements which facilitate access for physically handicapped people. The present provisions have been effective since September 1, 1973. Since 1974, AN ILLUSTRATED HANDBOOK OF THE HANDICAPPED SECTION OF THE NORTH CAROLINA STATE BUILDING CODE has been used throughout the country as a model for other codes, a text and a reference for the elimination of architectural barriers. A new edition of AN ILLUSTRATED HANDBOOK will be published this fall. It will include illustrations for recent amendments concerning hardware, toilet rooms and protruding objects in corridors.

This state's "right to access" legislation, also effective since 1973, provides an impetus for improving accessibility of existing facilities. ACCESSIBILITY MODIFICATIONS: GUIDELINES FOR MODIFICATIONS TO EXISTING BUILDINGS FOR ACCESSIBILITY contains a survey for studying a building to determine its problems and supplies remedial alternatives. Nationwide, the motivation for providing access is greater than ever since HEW Secretary Joseph Califano signed Section 504, Title V of the Rehabilitation Act of 1973. This section prohibits discrimination on the basis of handicapping condition and requires access for many existing facilities within three years.

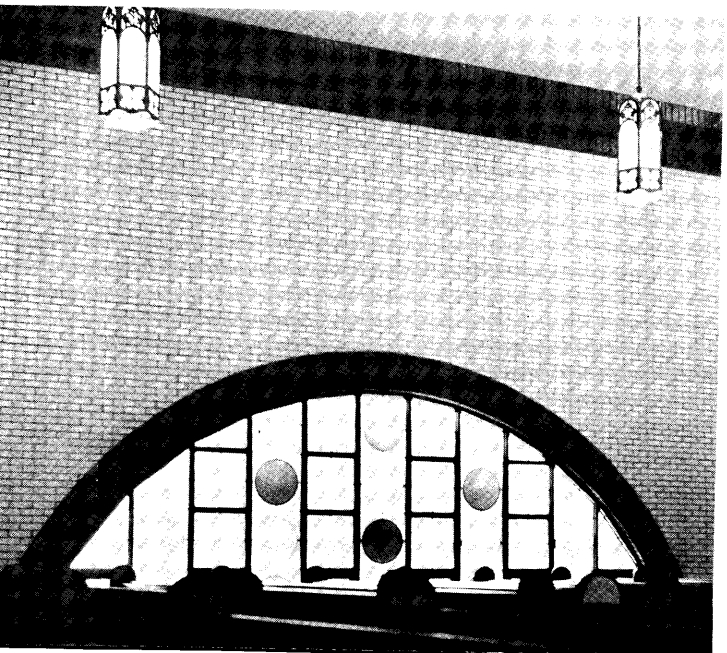
The establishment, in 1976, of the Special Office for the Handicapped in the Engineering and Building Codes Division, North Carolina Department of Insurance, increased emphasis on the development of additional educational materials for the building community and the general public. ARE YOU AWARE is a ten-minute, automated slide/tape presentation designed to increase awareness of the abilities of handicapped people in work and recreational activities. Understanding is developed for the role of the building code, relevant legislation and the built environment as it affects daily living by handicapped people. ACCESSIBILITY BARRIERS: PROBLEMS, SOLUTIONS AND CODE REQUIREMENTS is a ninety-eight minute, automated presentation of the techinical provisions of the code through examples of facilities used by handicapped people. It is organized in the same manner as this section of the code and may be started and stopped for study of particular elements. Both presentations were designed by Barrier Free Environments, Inc., Fayetteville, North Carolina, and are available from the Special Office.

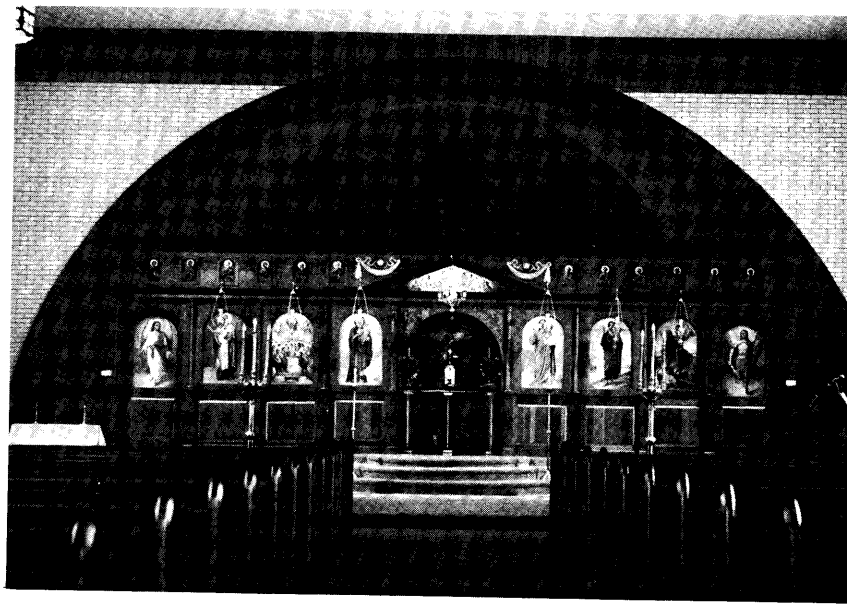
Architectural elements have been repeatedly identified as barriers to education, employment, recreation, transportation and housing. In North Carolina, there is optimism for continued progress in enabling access by handicapped citizens through increased awareness, understanding and cooperation in the building community and the general public.

Greek Orthodox Church
Dormition of the Theokokos
Greensboro, N. C.

Architect:
Walter E. Blue, Jr. & Associates

General Contractor
J. R. Graham & Son





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