

planning for a better hospital landscape

W.R.NELSON JR. &
J. A. PORTER



CONTENTS

Landscape Architecture Design	5
Plant Materials	7
Pedestrian Circulation	8
Vehicular Circulation	8
Parking Areas	10
Medical Rehabilitative Spaces	12
Reaching Your Objectives	15

Photographs on pages 6, 9 (bottom), 12, 13, and on the cover show the work of Dean & Novak, Landscape Architects.

PLANNING FOR A BETTER HOSPITAL LANDSCAPE

By W. R. NELSON, JR., and J. A. PORTER¹

The quality of care in our nation's hospitals is at the highest level in history; however, poor use of outdoor space around our hospitals calls for a program of action. Doubtless the diagnostic and treatment facilities within our hospitals have been carefully designed and equipped to provide high quality care as economically as possible. But move from within a hospital to the outdoor space surrounding it, and it is apparent that most planning for elevating the level of health care has been limited to the interior spaces.

Planning for health care must stem from an understanding of the importance of the total environment (the space inside and outside a structure, whether it be a hospital, sanatorium, or rest home) to the mental and physical well-being of the patients and the staff. Even though advances in medical and surgical techniques have reduced the length of stay of a patient, it is still important to have outdoor convalescent areas for both wheelchair and ambulatory patients. The basic human need to be in contact with nature increases during convalescence. Long-term patient care is generally the role of the nursing home where it is even more essential to have a carefully planned and well-integrated total environment.

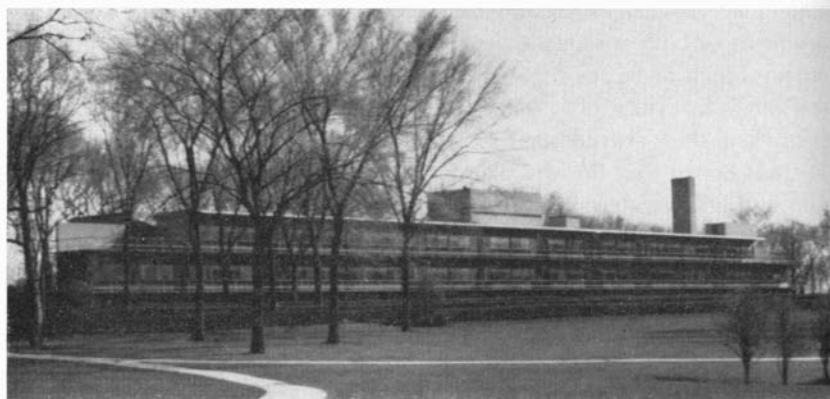
The benefits of a well-landscaped hospital or nursing home are not, however, limited to the patients. The needs of the doctors, nurses, and other employees must also be considered. They are faced with tremendous responsibilities and must cope with overwhelming emotional problems of both patients and patients' families. Having an opportunity during lunch or coffee breaks to sit and chat with colleagues in a well-designed, carefully developed landscape space can improve their efficiency and their attitudes.

It is hoped that the site planning principles included in this publication will be considered before the hospital is constructed. For existing hospitals the same principles apply to the development of surrounding space, although certain modifications may be necessary due to an inadequate site space. Comprehensive site planning can help stem costs of both construction and subsequent operation of the facility. Moreover, it can help in the development of outdoor areas that aid in the recovery and rehabilitative process of many patients.

¹ William R. Nelson, Jr., Extension Landscape Architect, and Joe A. Porter, formerly Assistant in Landscape Architecture.



This space for staff coffee and lunch breaks has been developed with the appropriate landscape elements to maximize the esthetic and use value of the area. Such an atmosphere provides a pleasant, relaxing contrast to the pressures and strain of hospital routine.



Here is a fine example of a hospital properly located on its site to afford an inviting approach for visitors and a pleasant vista to look out on from the building.

The objectives of site planning are to obtain a proper relationship of all elements of the project (structures, parking, roads, walks, recreation areas, and rehabilitative spaces) to each other and to the site for efficiency of function; to take full advantage of the site potential and thereby avoid costly expenditures for clearing, grading, drainage, and subsequent maintenance; and to preserve the character of the site and its natural features such as trees, ground forms, and water. These objectives are met when there is close collaboration between the landscape architect and the architect. It is important that a landscape architect be employed at the inception of the project in order to assure a well-integrated and efficient plan.

Plan the hospital site to provide the following elements:

- Landscape architecture design;
- Plant materials;
- Pedestrian circulation;
- Vehicular circulation;
- Parking areas;
- Medical rehabilitative spaces.

Landscape Architecture Design

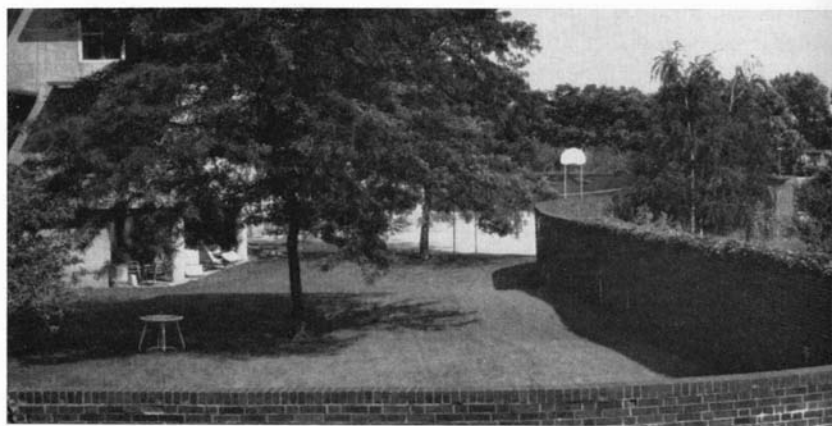
The hospital should present a pleasing appearance for the benefit of the patients, the staff, and the community. The relationship between the building and the space surrounding it should be developed using appropriate landscape elements to maximize the area's esthetic and use values.

Landscape elements that might be included are plantings for functional and esthetic purposes, loose aggregates, paving, fences, walls, steps, ramps, outdoor furniture, and overhead structures. Specifically, thought should be given to choosing stable outdoor furniture, attractive vertical structures for screening and enclosure, appropriate ground surfacing material for the intended use of the area, and hardy trees and shrubs.

The landscape architect's training uniquely qualifies him to develop the total site, which includes locating all structures and planning all vehicular and pedestrian circulation systems. Site considerations might include topography, prevailing breezes, sun orientation, views, pedestrian and vehicular access, utility access, and surrounding noises. For example, with rolling topography it might be desirable to place the hospital on a raised portion of the site to enhance its position, to capture cooling breezes, to increase the view, and to minimize the effect of surrounding noises.



A visitors' court near the hospital entrance suggests how landscape elements of exposed aggregate paving, planting tubs, benches, and screening and accent plantings can be used to create a rest or congregating area. Each item is simple, functional, and harmonious with the hospital environment.



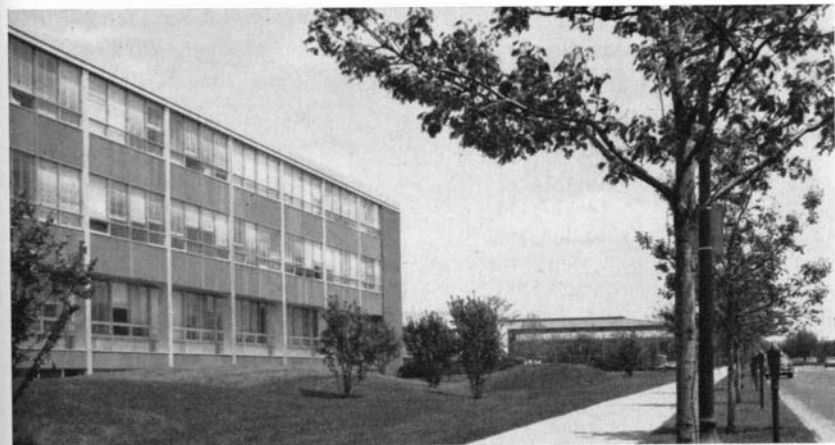
A gracefully curved wall separates two different use areas on the grounds.

Excavated soil may be stockpiled for future landscape use as berms (mounds). The construction of these berms can be designed so as to create a sculptural pattern of earth. If carefully placed on the site, berms can create a visual and sound barrier between the hospital and the highway. Berms become effective design elements when grassed over. Sometimes trees are planted on them for additional interest.

Roads, paths, and parking areas should be carefully placed to be convenient without being obtrusive. Since the hospital is a 24-hour facility, adequate night lighting must be provided. The light standards should be carefully proportioned to avoid duplication of the over-sized light standards typically found along major city streets. Also related to the circulation planning of hospital grounds are the directional signs needed to guide both vehicular and pedestrian traffic. Again careful attention must be given to this detail in order that the signs do not become too dominant or obtrusive but still provide the information needed.

Plant Materials

The proper selection of trees, shrubs, and flowers for use around the hospital is important for several reasons. First they create a pleasing visual scene that gives esthetic pleasure to patients, staff, and the community. Also they provide an atmosphere that is conducive to the rapid recovery of the patients and efficient work by the staff. At the same time, plant materials can create a visual screen, reduce noise, en-



Soil possesses sculptural qualities that can add to the design and function of an area. Soil graded into mounds or berms can be an effective means of partially screening an area or providing a buffer for sight and sound. It may also be used to relieve the monotony of flat topography.

hance good architecture or mask bad architecture, and relate the buildings to each other and to the site.

The landscape architect must concern himself not only with the esthetic qualities of plants but also with their environmental suitability, maintenance requirements, cost, availability, and durability. If there are existing trees on the site that are worth preserving and that are suitably located, care must be taken to protect them during construction. These trees should be indicated on the site plan and carefully incorporated into the total landscape scene.

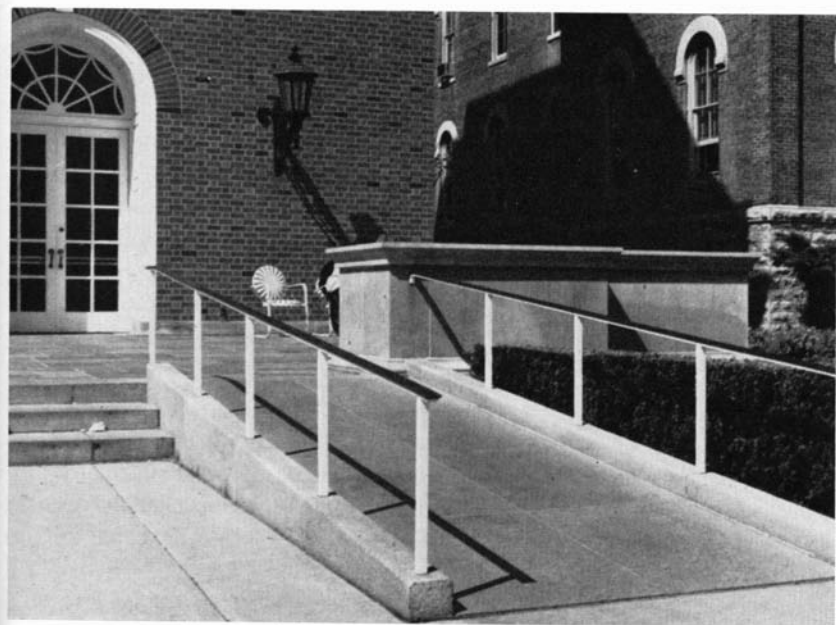
Pedestrian Circulation

Vehicular and pedestrian approaches to the hospital should be completely separate from one another. Just how such separation is achieved depends on the site and its size, but it might be possible to obtain this separation in part by means of ramps for pedestrian use. Walks and ramps should not exceed a grade of $1\frac{1}{2}$ percent. Steeper ramps or walks should be equipped with handrails. Remember that walking distances for patients and hospital personnel must be kept as short as possible. Another solution might be the placement of buildings over vehicular areas, providing excellent separation of these two types of circulation.

In designing sidewalks around hospitals and nursing homes, the material used should be asphalt or concrete with a non-slip finish. Such surfaces are easily cleaned and easily traversed by wheelchairs. Persons whose balance is uncertain need a relatively smooth surface without lateral crowning to walk on. For this reason rough stone, brick, or other uneven surfaces are not recommended for hospital walks. The sidewalks should be wide enough for a wheelchair patient to pass a person walking; therefore, a minimum width of 5 feet, and preferably of 6 feet, should be provided.

Vehicular Circulation

On hospital grounds there are several different types of vehicular traffic to be considered including ambulance and emergency, trailer-truck and delivery, service and maintenance, staff and personnel, and visitor vehicles. Even though there are a number of different types of vehicles for which provisions must be made, it is best to limit access to the hospital to as few points as possible within the requirements of medical services. This is done to control traffic and to segregate the different types of traffic in order that the vehicles can have quick and direct access to the appropriate areas of the hospital. Visitor, patient,



Walks and ramps should not be steep in order to afford easy access by wheelchair. In the picture above the ramp has been combined with the stairway to accommodate both wheelchairs and pedestrians. In the picture below the overhead pedestrian concourse connects two buildings, thereby separating pedestrian and vehicular traffic. Plant materials have been used to screen the hospital service area and loading dock.



and staff vehicles should have access to the hospital building's main entrance; ambulances to the emergency room entrance; and hearses and delivery trucks to the service entrance. Visitor and patient traffic should be separated from the service traffic. It is not advisable to have any through traffic roads open for constant use.

The roads within the hospital grounds should be two lanes wide; however, the main entrance road might be wider — perhaps three lanes wide. No parking along the roads should be permitted unless there is sufficient width so that parked cars will not interfere with traffic flow.

It is undesirable for visitors to see emergency and ambulance vehicles, and even less desirable for them to see hearses and service vehicles. This necessitates planning a separate entrance from the street or highway to be used for an emergency entrance-exit and for all purposes other than those served by the visitor-patient-staff main entrance. Some emergency provision should be made to permit the internal road system from both entrances to interconnect so that if one entrance should ever be blocked, all areas of the hospital would still be accessible to emergency, staff, and service vehicles.

Locate the emergency entrance so that it is separated from pedestrian traffic. Emergency vehicles of all types will come to this entrance, including ambulances and private automobiles. The space should be large enough to accommodate three or four vehicles at a time. The emergency entrance should have an overhead shelter and a walkway or low-pitched ramp wide enough for a wheeled stretcher to be turned by its attendants. For the ambulance itself there should be a turning area of at least 60 feet in diameter provided rather than a backing area.

Trailer trucks and other delivery vehicles must have ample parking, unloading, and turning space in the delivery area. A loading dock for either side- or rear-loaders should be 48 to 50 inches above the ground. In this area open parking spaces should be provided for approximately four additional vehicles. If possible even the largest trucks or fire engines should be able to turn without backing. Minimum turning diameter for larger trucks and fire apparatus is 86 feet.

Parking Areas

Estimates of parking spaces required for a hospital vary according to whether it is a teaching and research institution or solely a service hospital. The recommendations range from one car space for every bed to three car spaces for every four beds. The exact ratio can be determined by your landscape architect on the basis of your hospital's functions and needs.



Thoughtful consideration must be given to the problem of traffic flow on hospital property. Visitor and staff parking should be separated from service and emergency traffic. In the upper photograph the main entrance is attractive, well defined, and spacious. The middle photograph is an example of the result of haphazard planning in which all cars must use the same roadway and visitor and staff traffic must even pass the emergency and service area. In the lower photograph the space immediately adjacent to the building has been sacrificed for the visitor-staff roadway and parking. Not only is this unsightly, it also results in disturbing noises and it fails to separate pedestrian and motor traffic.

Parking areas should be divided by user groups and located as close as possible to their destinations. Parking areas for doctors should be given a priority location within 250 feet of their destination. Visitor parking should be located in several areas related to out-patient and general hospital entrances. Employee day and night parking can be farthest away and divided into two or three different areas. However, if their parking areas are too distant, employees will usurp visitors' spaces.

All parking lots should be lighted and have appropriate landscape plantings for screening, muffling noise, and visually softening these large paved spaces. Trees should be incorporated into the parking islands for sun protection and additional visual relief. All parking areas should be paved and marked for self-parking.

Medical Rehabilitative Spaces

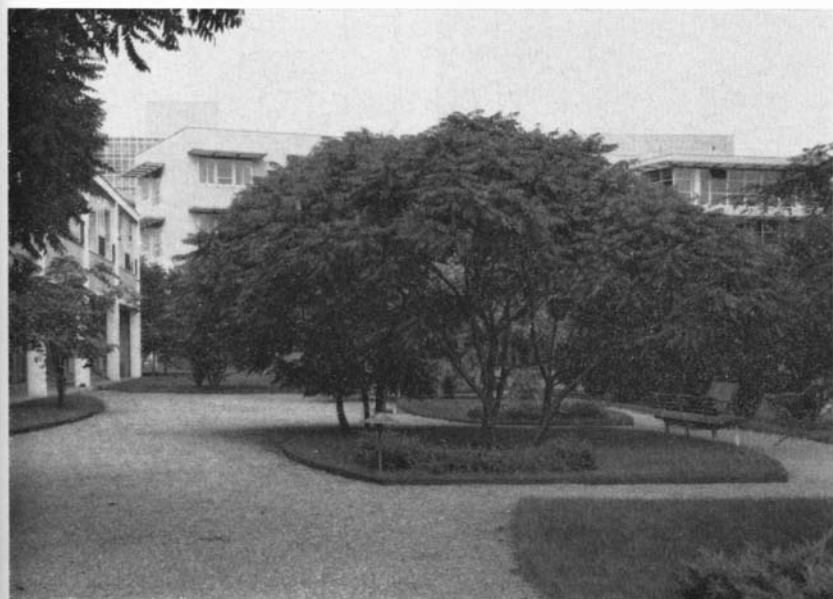
Quiet outdoor sitting areas for convalescents should be provided in appropriate areas adjacent to the hospital. These spaces should be readily accessible to patient dayrooms or at least to the patients' eleva-



The illustration above shows a unique method for screening a parking area, achieved by using a stepped diagonal concrete wall. Notice the interesting shadow pattern cast by the wall on the pedestrian walk located at the edge of the parking lot.



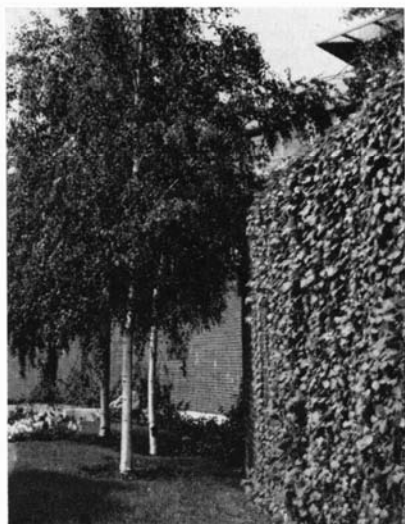
The top picture shows a terrace for convalescents that is readily accessible to patients' rooms. Since this terrace is several stories above the ground, the plantings are placed in tubs. Both flowers and permanent plantings are used to add charm and interest to the area. Because of the height, enclosure for privacy is not important. The patients' sitting area shown below has paths that connect with other landscaped portions of the grounds, providing an opportunity for short walks. Paths are wide enough for easy wheelchair movement and smooth enough so that patients can walk on them easily.



tors. They may be patios or partially enclosed spaces depending on site conditions. They should be developed so that they have some degree of privacy from pedestrian and vehicular traffic and so that they relate visually and physically to the hospital interiors.

To be functional these spaces need at least 2,000 square feet (40 feet by 50 feet) of area with a surfacing material that has a non-slip finish and that provides for ease of movement on foot or in a wheelchair. Outdoor furniture and plantings should be used within these areas. Arrange outdoor furniture to allow plenty of open space for maneuvering. Plantings of small flowering trees, hardy shrubs, and perennials can add interest and charm to the area. The elements included must be carefully designed to avoid an excessive amount of maintenance.

Insofar as it is possible, the sitting areas and the landscaped portions of the hospital grounds should be interconnected to provide opportunities for walking and wheelchair outings without sacrificing the privacy of the areas. Such connections between the patios and the balance of the hospital grounds will also enable easier patio maintenance.



Landscape elements of special interest may be used along the path system to stimulate curiosity and pleasure in the ambulatory patient. In the left-hand picture a water feature with a large boulder in the center is located behind the birch trees. Further interest is added by including annual flowers and ground cover. The right-hand picture shows a quiet sitting area for patients provided adjacent to the building and at ground level. The area is enclosed by the building walls and is enhanced by the plants which provide contrast in size, color, and texture.

Reaching Your Objectives

This publication has emphasized the functional and visual potential of outdoor spaces so often not fully developed in hospital planning. When a balanced relationship is achieved between a hospital building and the roads, paths, parking areas, patios, plantings, and green open spaces surrounding it through close adherence to a carefully conceived plan, patients are more likely to have a comfortable stay and staff are more likely to perform efficiently.

The design should aim at developing the outdoor areas surrounding hospital buildings to fulfill more than just the bare functions of providing circulation, light, and air. These site spaces should be viewed as extensions of the rehabilitative and recreational areas provided within the hospital and as an attractive visual environment for people and buildings.