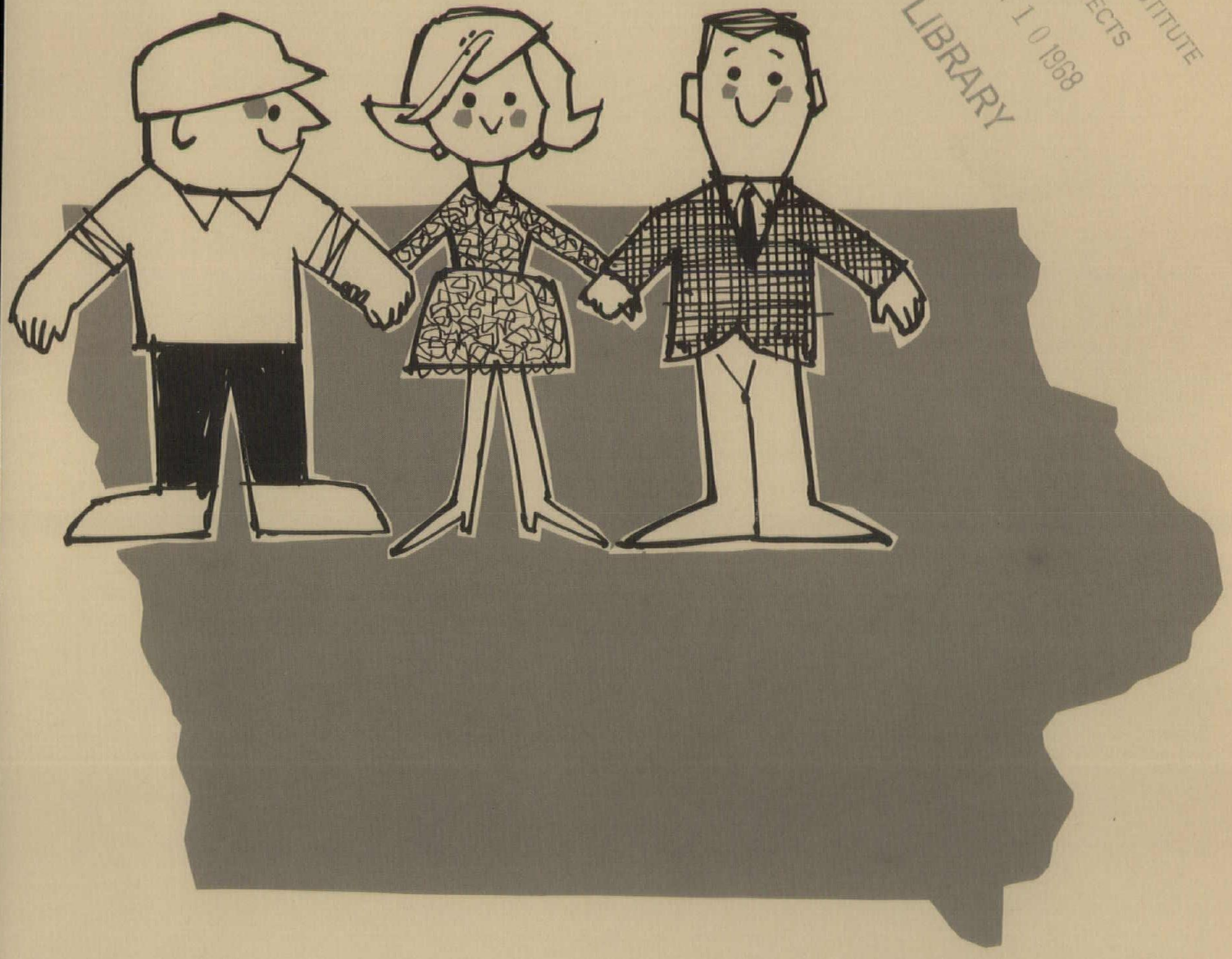
IOWA ARCHITECT

THE FACE OF ARCHITECTURE IN IOWA



There's more to a good roof than meets the weather

A good roof deck is a combination of two things: the materials that go into its construction; and *how* they go in.

ZONOLITE® VERMICULITE INSULATING CONCRETE is the ideal roof decking material. This fireproof, seamless super heat stopper weighs only ⅙ the weight of structural concrete. And since it is poured in place, it easily conforms to the variety of forms and shapes found in today's modern design.

As approved Zonolite Applicators we have the know-how to do your job right. By following rigid industry standards and keeping a running progress log on your job, we offer not only the finest insulating roof deck available, but a written certificate that your Zonolite concrete was mixed and applied as specified.

When there's no question about the quality you're looking for in a roof deck, specify Zonolite Vermiculite Insulating Concrete.

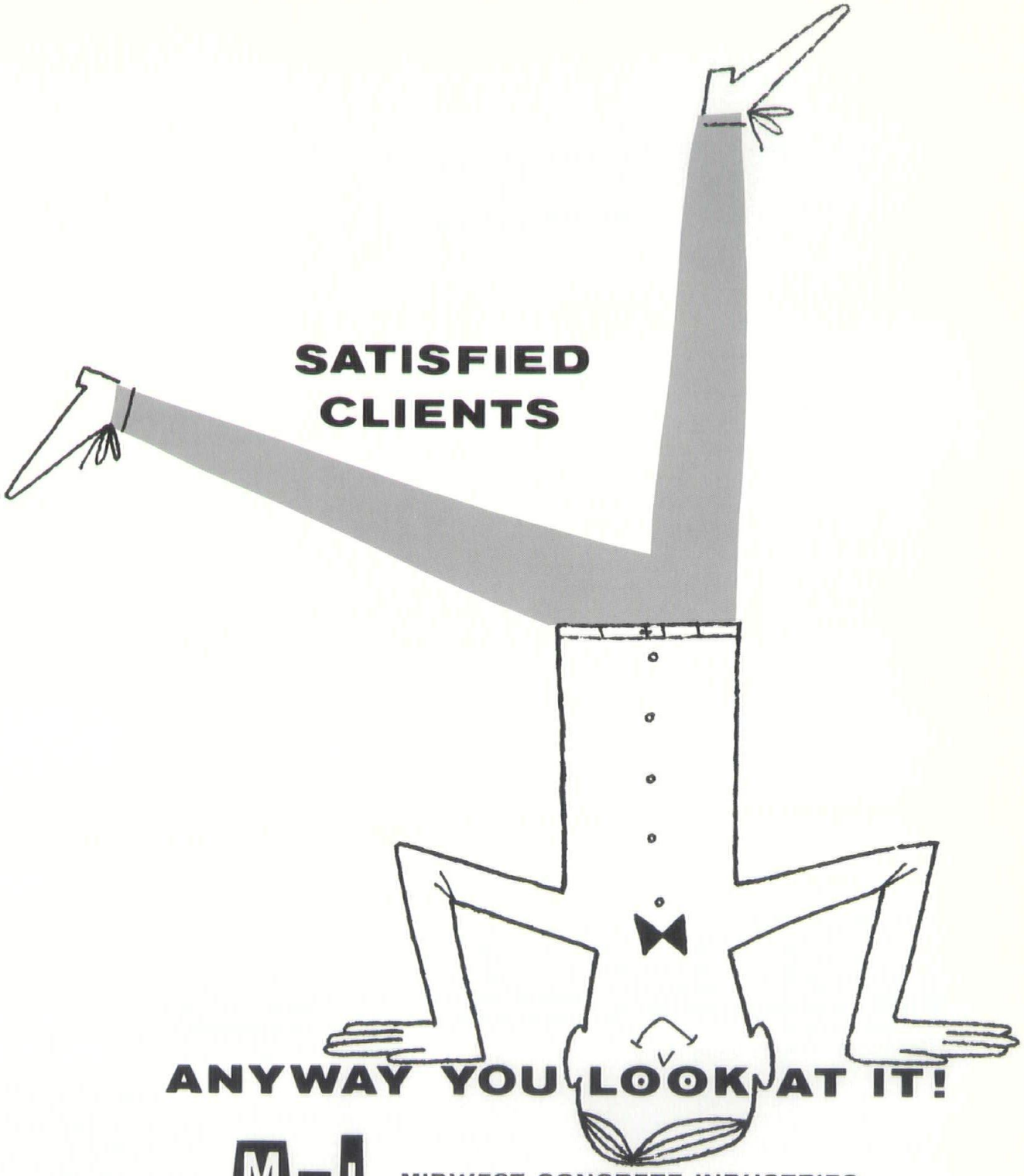
For more information on the best between you and the weather, contact your nearest local approved Zonolite Applicator:

APPROVED APPLICATOR
VERMICULITE INSTITUTE
ZONOLITE ROOF DECKS

GRACE®

ZONOLITE DIVISION

Merchandise Mart Plaza · Chicago, Ill. 60654
(312) 527-5700



MCI

MIDWEST CONCRETE INDUSTRIES
WEST DES MOINES, IOWA

Iowa Agents: Swanson Gentleman, Inc. Des Moines

Total Service to Architects in Iowa . . .

The proven quality and performance of IOWA PAINT products are backed by 35 years of paint formulation and production experience.

Fully staffed laboratory and research facilities at IOWA PAINT stand ready to solve your most difficult coatings problems.

- **Architectural Wall Finishes and Enamels**
- **Iopoxy Enamels and Wall Glazes**
- **Fire Retardant Finishes and Varnishes**
- **Wood Finishes and Stains** Both Interior and Exterior
- **Complete Line of Vinyl Wall Coverings**

Qualified Representatives

Your Engineers, Specification Writers and personnel receive from Iowa Paint specialists qualified guidance in selecting and applying paints.

Fast Delivery

Inventory, sales and service centers located in ten major markets of Iowa:

Des Moines (Home Office & Factory)
Cedar Rapids
Davenport
Sioux City
Moline
Ottumwa
Waterloo
Fort Dodge
Mason City
Council Bluffs-Omaha

IOWA PAINT
Manufacturing Co.

IOWA ARCHITECT

THE FACE OF ARCHITECTURE IN IOWA

VOLUME XV • **NUMBER III** • **1968**

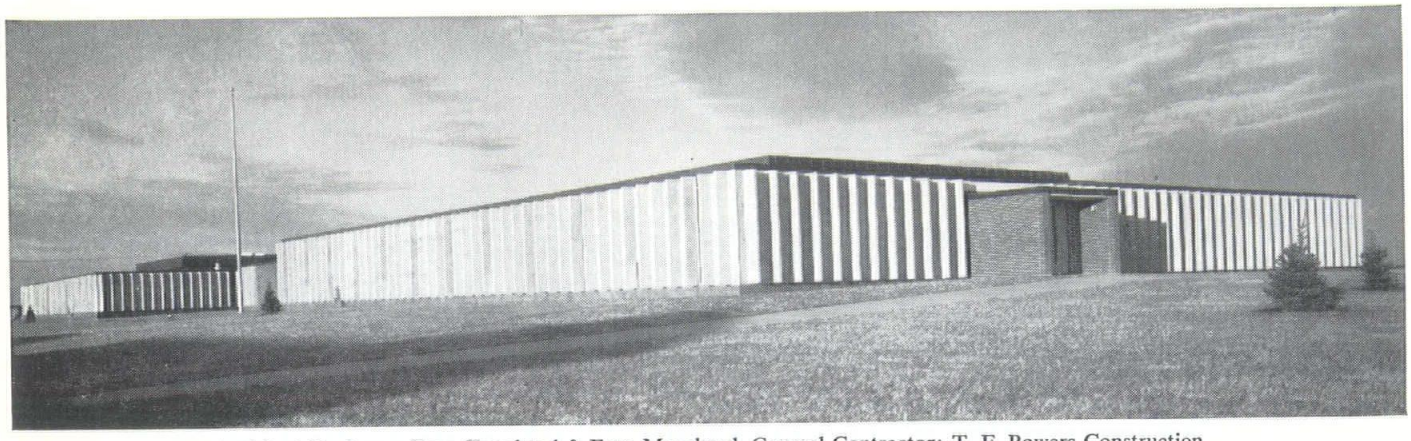
CONTENTS

Photo credits
photography/fraser & fletcher: pages 8-9
photography/robert e. french: pages 10-11
photography/louis c. kingscott & associates, inc.: pages 12-13
photography/scheffer studio: page 15
photography/ellerbe architects: pages 16-17

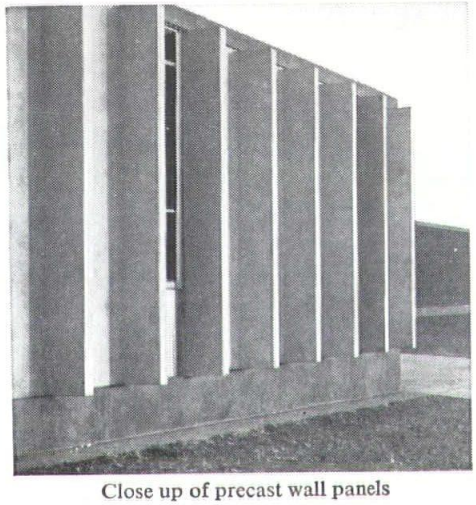
The "Iowa Architect" is the official publication of the Iowa Chapter, The American Institute of Architects, and is published quarterly. The annual subscription rate is $3.50 per year. Appearance of names and pictures of products or services in editorial or advertising copy does not constitute endorsement by either the A.I.A. or this chapter. Information regarding advertising rates and subscriptions may be obtained from the office of the chapter, 401 Savings and Loan Building, Des Moines, Iowa 50309. Telephone 244-7502, Area Code 515.

Simplified way to build a concrete school

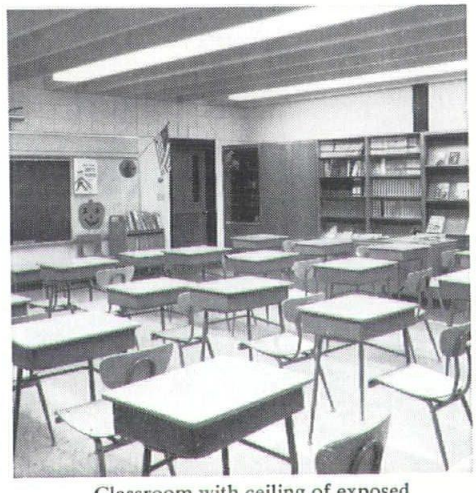
(Saves money, too)



Architect-Engineer: Foss, Engelstad & Foss, Moorhead. General Contractor: T. F. Powers Construction Co., Fargo, N.D. Precast, Prestressed Concrete Fabricator: Wells Concrete Products Co., Wells, Minn.



Close up of precast wall panels



Classroom with ceiling of exposed double-tees and concrete masonry walls

The Probstfield Elementary School in Moorhead, Minnesota, represents a simplified system of construction rapidly gaining favor for its speed and economy. Both roof and walls are double-tee units of precast, prestressed concrete.

The double-tee roof integrates decking and beams to create its own ceiling. The three-sided recesses formed by the "tees" simplify lighting and air duct installation.

Double-tee curtain walls, using load-bearing concrete masonry as backup, provide a striking and height-accenting exterior. Easily repositioned, they facilitate future expansion.

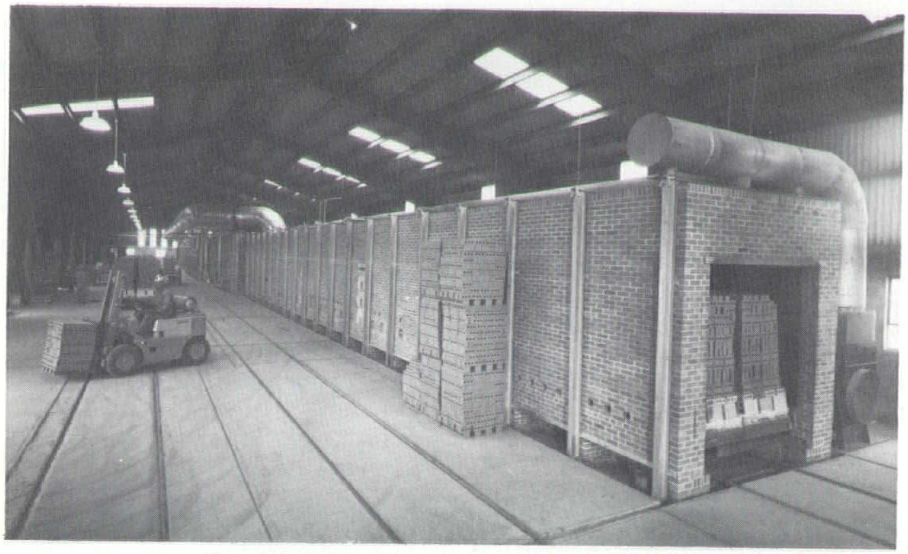
The school consists of 21 classrooms, a multi-purpose room, gymnasium, shower and locker rooms, kitchen and office area. The cost—$14.90 per sq. ft.—included all electrical and mechanical work, as well as kitchen, cafeteria, science and gymnasium equipment. Complete sitework—parking lot, sodding and extensive landscaping—was also included.

Moorhead school officials found concrete met their many requirements, including fire safety and long-term economy.

PORTLAND CEMENT ASSOCIATION
408 Hubbell Bldg., Des Moines, Iowa 50309
An organization of cement manufacturers to improve and extend the uses of portland cement and concrete

TWO TUNNEL KILNS = BETTER BRICK FOR YOU

Pacesetters Of The Iowa Brick Industry



Sergeant Bluff—Iowa's first tunnel kiln brick plant

in 1965 we were first to introduce the advantages of tunnel kiln face brick, when we started our new Sergeant Bluff tunnel kiln plant:

BETTER COLOR!
BETTER QUALITY!
BETTER DELIVERY!

Adel—Iowa's first red producing tunnel kiln face brick plant.

Now we have two! The new Adel tunnel kiln plant is now in operation. This efficient assembly-line production is today's departure from the century-old method of making brick. The controlled temperatures make uniform brick in just seven days!

SIOUX CITY BRICK AND TILE CO.
207-12 Benson Building
Sioux City, Iowa 51102
Phone 258-6571

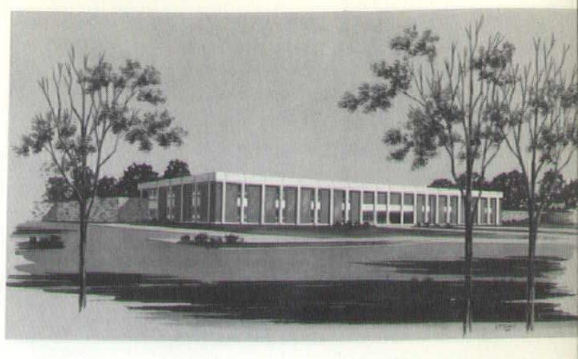
UNITED BRICK AND TILE CO. OF IOWA
1200 Thomas Beck Road — Box 654
Des Moines, Iowa 50303
Phone 244-3264

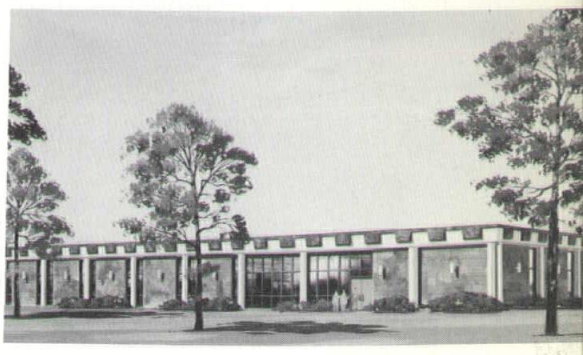
PLYMOUTH PLACE - 4111 Ingersoll Avenue - Des Moines, Iowa

ARCHITECT: ARCHITECTS ASSOCIATED - Des Moines - Sioux City
CONTRACTOR: RINGLAND-JOHNSON-CROWLEY CO. - Des Moines, Iowa
SPONSORED BY: PLYMOUTH CONGREGATIONAL-UNITED CHURCH OF CHRIST - Des Moines, Iowa

EXTERIOR FINISHES—ground level and first floor.
INTERIOR FINISHES—ceilings and building center core.
by COTA INDUSTRIES, INC., Des Moines, Iowa.

Vise





a report on the area community colleges of iowa

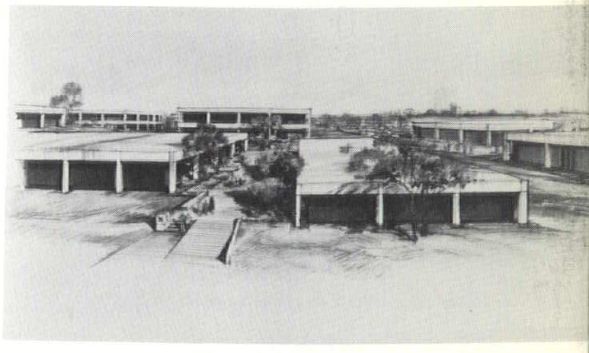
The 1965 Iowa Legislature recognized a need for post high school education organized by several county regional areas. Fifteen area community colleges were established, with operation to begin July 1, 1966.

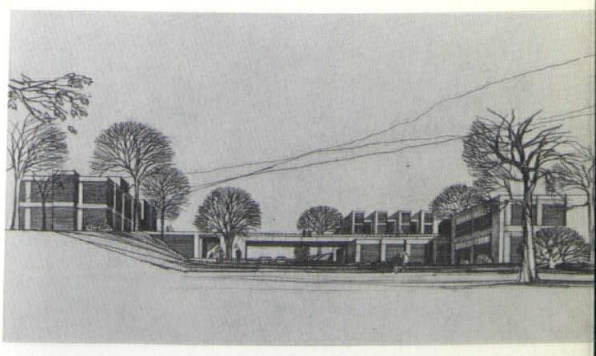
The educational program of the Area Community College includes a two-year curriculum and several shorter term courses. Vocational and technical training is emphasized in addition to pre-professional and in-service training and community services.

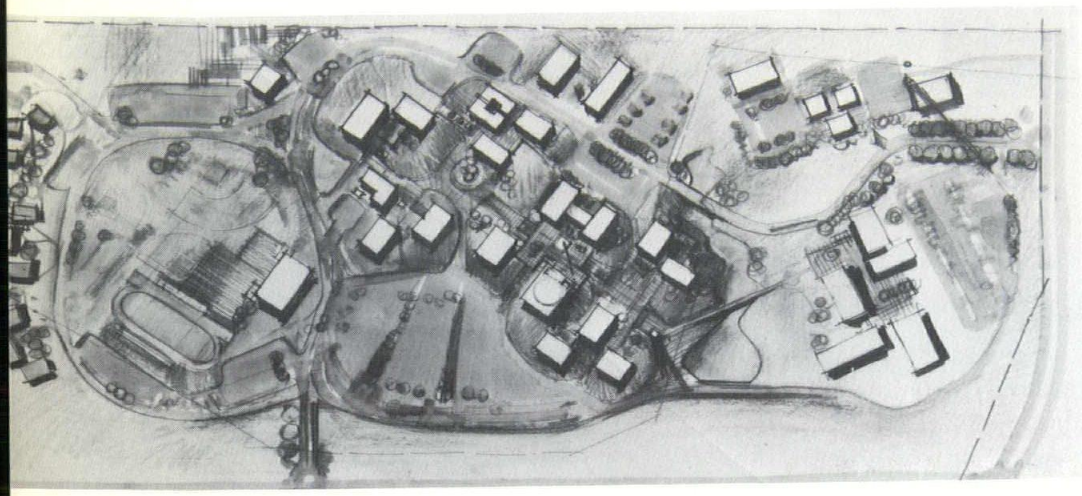
Five areas with highest needs were initially placed in operation in available buildings, while planning proceeded for multi-phase construction of campuses.

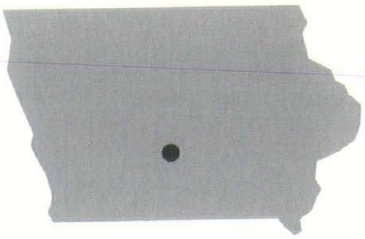
The master planning has been completed, with most following the concept of perimeter vehicular circulation surrounding a pedestrian-scaled central campus. Sites with strong natural character have been selected, offering varied assets such as lake sites and scenic views.

Some colleges have completed their initial phase buildings and the others have scheduled construction to begin soon.









AREA XI COMMUNITY COLLEGE

ANKENY, IOWA

EMERY - PRALL & ASSOCIATES
ARCHITECT

WILKINS & BUSSARD
PLANNING CONSULTANT

Area XI Community College, to be located two miles South of Ankeny, Iowa, and in close proximity to future State Highway 401, was planned to develop in three major phases with each phase divided into three or four parts.

Phase I provides Vocational Technical programs with major support facilities such as the Instructional Media Center.

Phase II will provide additional Vocational Technical programs and begin the General Educational Programs.

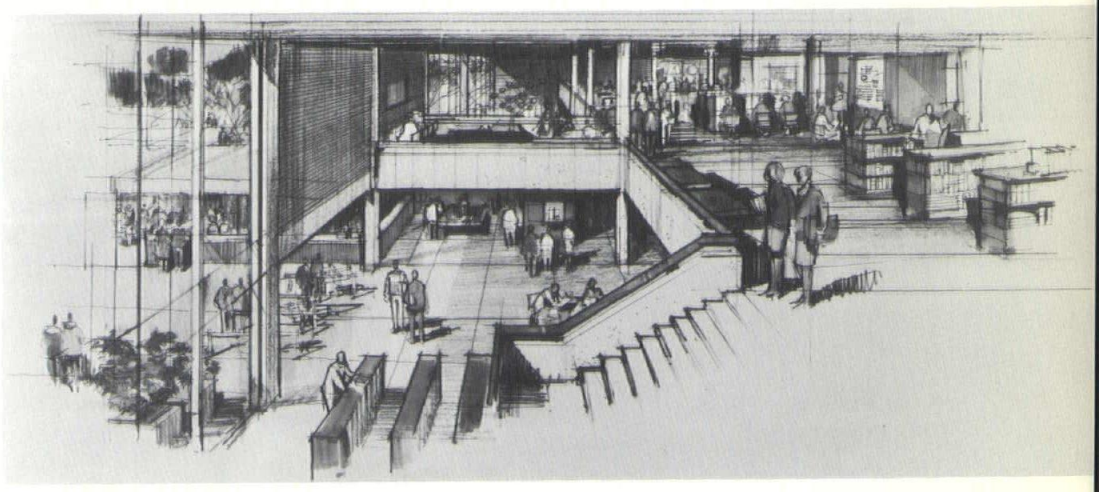
Phase III will then incorporate additions to several of the existing building facilities which will complete the master plan.

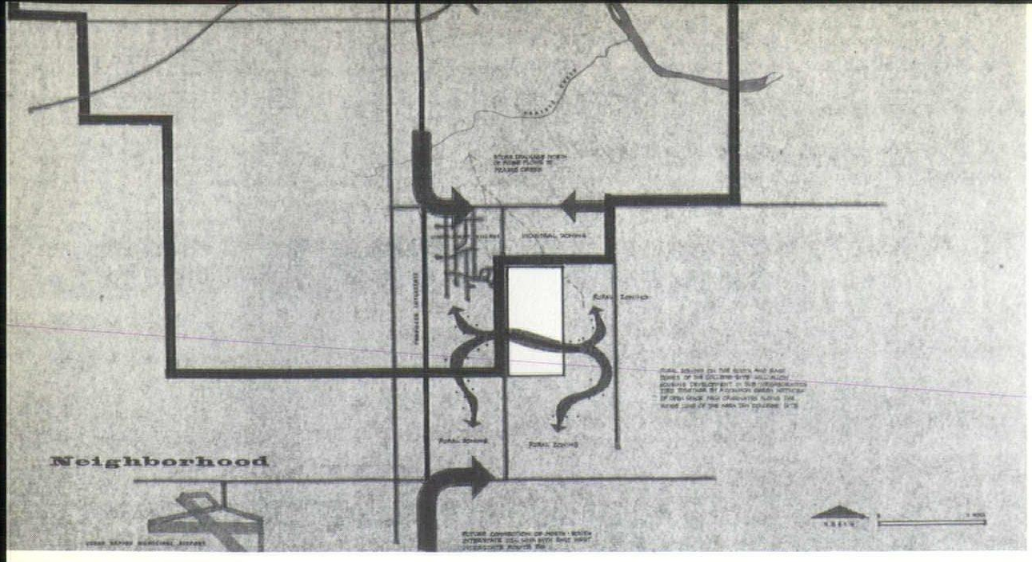
The optimum enrollment planned for this campus is approximately 8,000. Future plans for the Area XI Community College will probably include more than one campus.

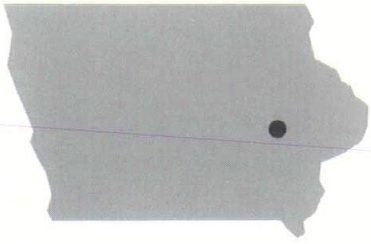
The central campus is sited with the Northwest-Southeast axis relating to a ridge which is the highest elevation on the site. Vehicular circulation and control is achieved by the use of a perimeter loop road. Housing facilities for the campus will be located outside the perimeter loop road.

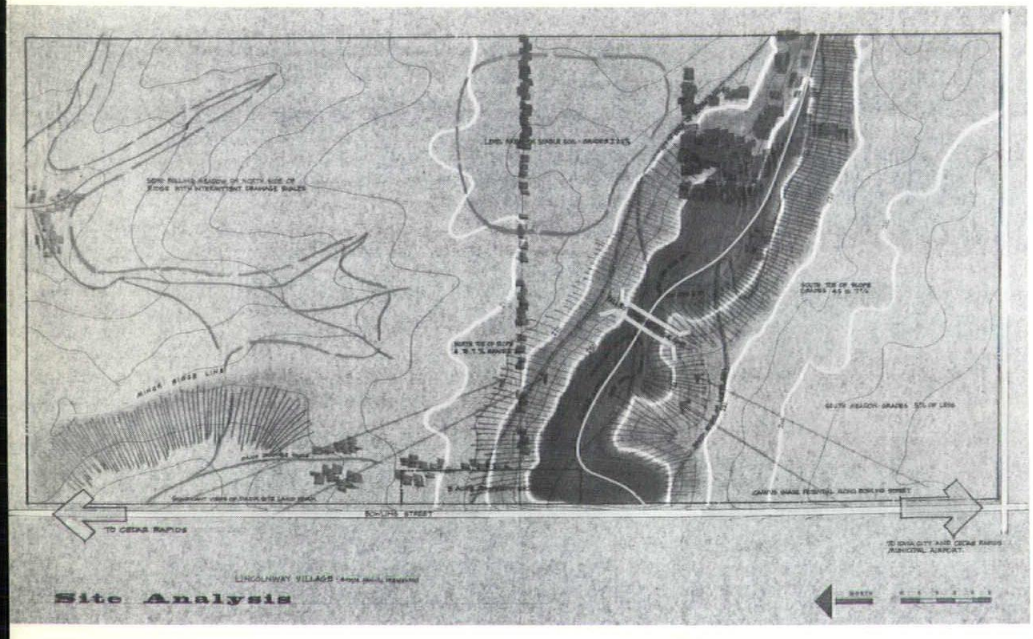
A basic planning module was developed for the project. This approximately 1,000 square foot module is expressed in a 32 foot square grid extending over the central campus area. Individual buildings and future additions will be placed on this 32' planning module. This will facilitate additions on two or three sides of each building. Space between buildings will also be kept on multiples of the planned module. Within this frame work, individual buildings, planned to satisfy specific programs, are grouped with two, three, or four buildings set on a common elevation with terraces and ramps between the plazas or groups of buildings.

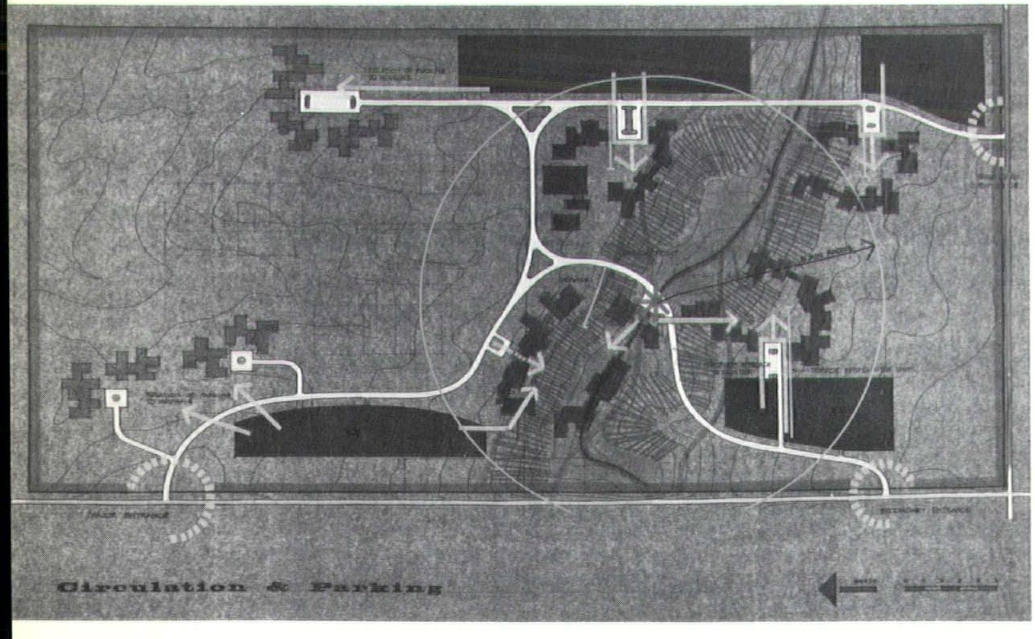
Foundations for all columns of the one-story buildings will be designed as interior columns to provide for future horizontal expansion. The precast concrete columns, precast beams, and floor system will carry out the module concept.











AREA X COMMUNITY COLLEGE

CEDAR RAPIDS, IOWA

BROWN, HEALEY AND BOCK ARCHITECT

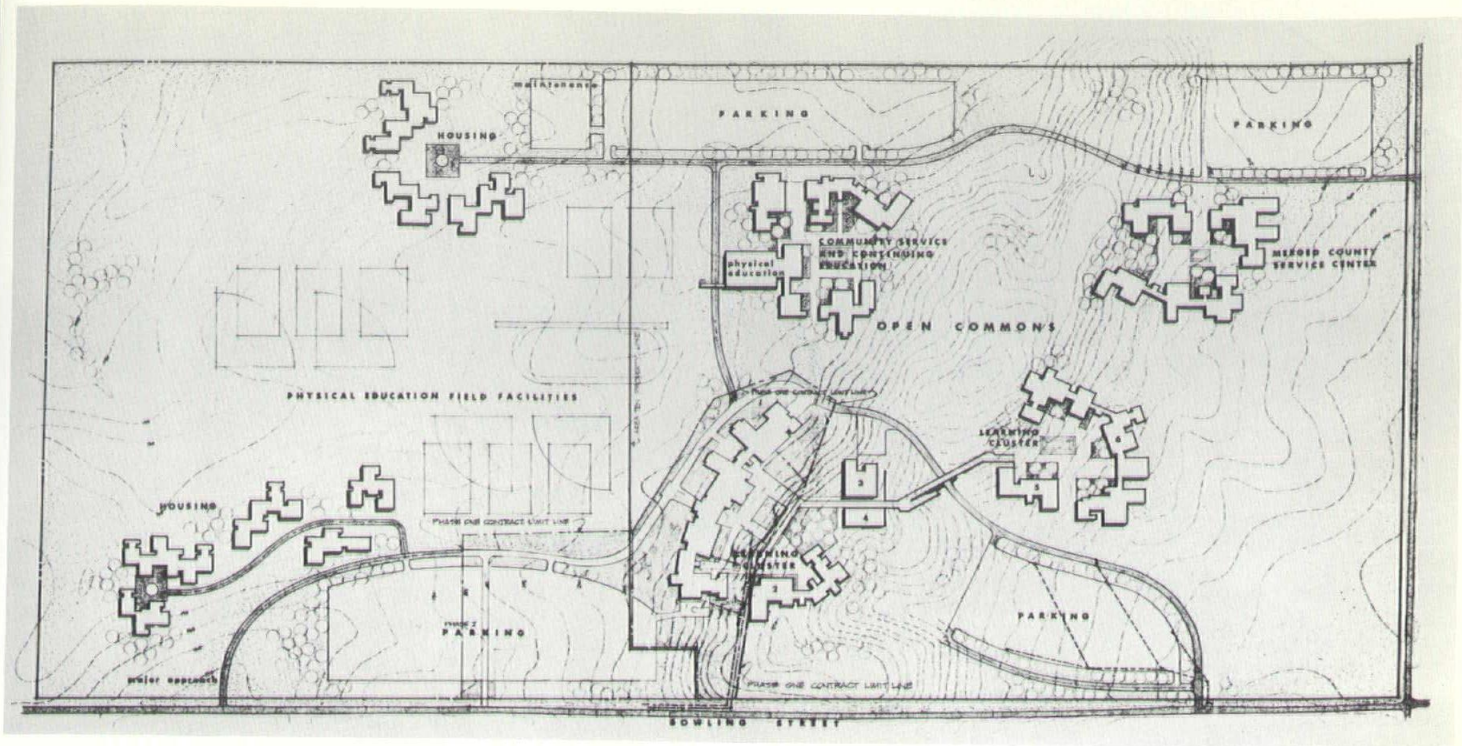
JOHNSON, JOHNSON AND ROY SITE CONSULTANT

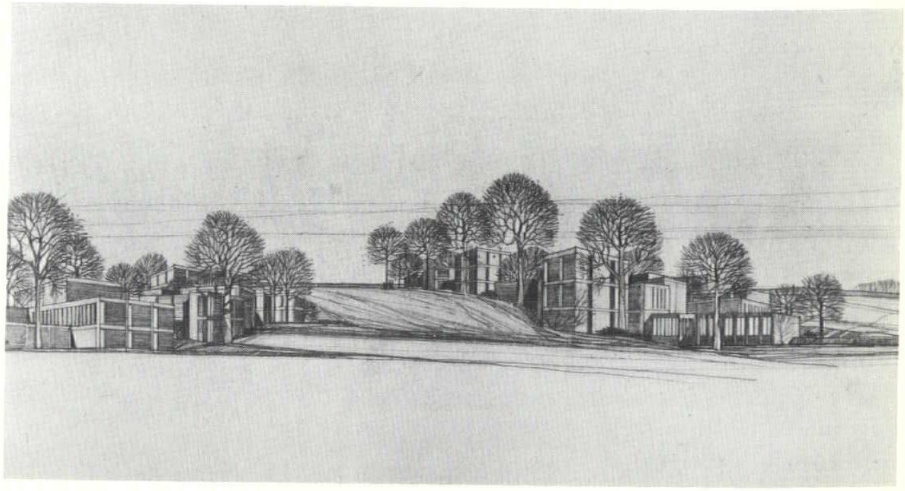
Located at the south edge of Cedar Rapids, the site is a one-mile long by one-half mile wide rolling meadow. The major educational facilities will be located along a ridge crossing east to west, 130 feet higher than the lowest areas within the site. Two housing areas are projected for lower land north of the ridge, sharing perimeter parking with the academic buildings.

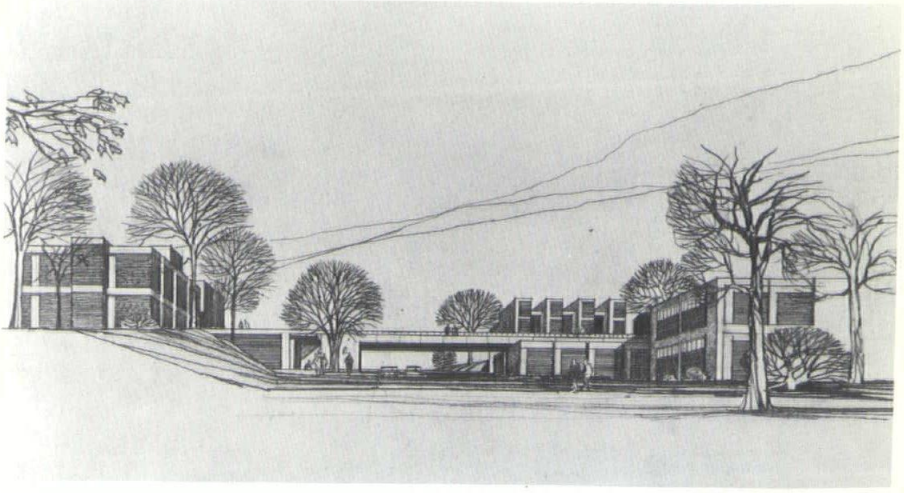
Site development is done in clusters to permit sufficient expansion space. Cluster development offers spatial interest which contributes to the human scale. Vehicular traffic within the site is kept at a minimum — travel is intended to be on foot from cluster to cluster.

Academic and related facilities include learning clusters, a continuing education cluster, and a merged-county service center.

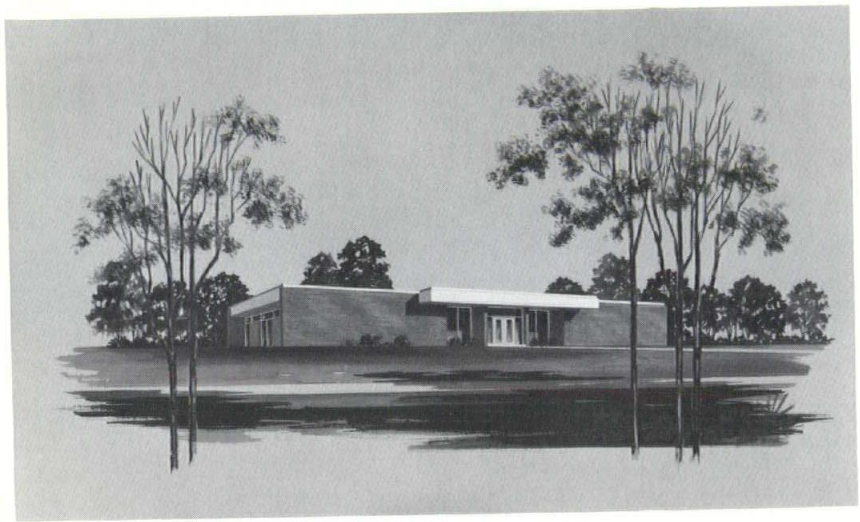
The first phase construction is a learning cluster, the Vocational-Technical Center, completion of which is scheduled for October of 1969. It will serve as a prototype for later phases.

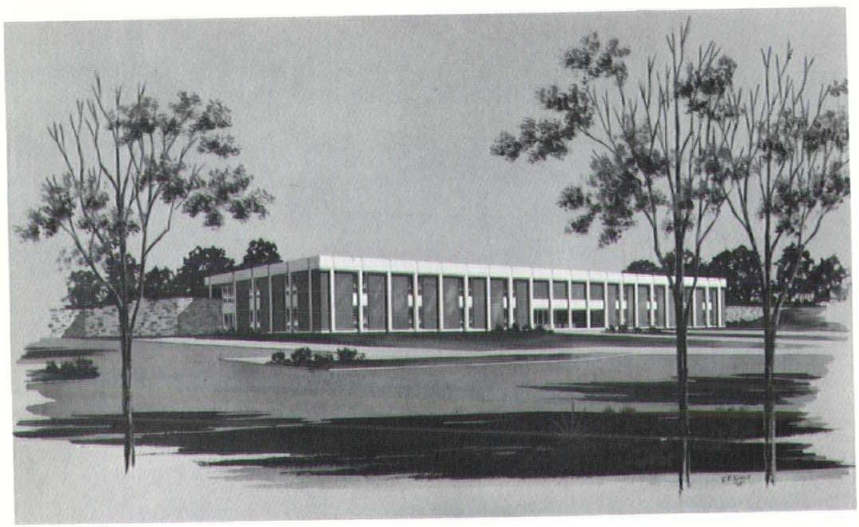


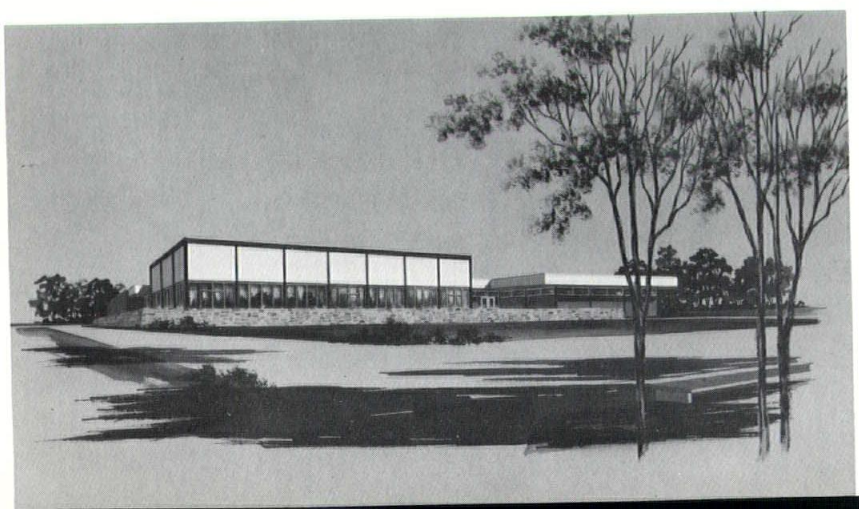




Program demands dictated several necessary and common functional requirements be under one common roof for continuity and convenience. Many areas have a very high noise level while others require quiet. With a large floor plan and mixed noise levels, a discontinuous irregular facade helps control the noise and keep the scale of the building small. The smaller spatial elements visible from the exterior are "fitted" *into* the hill, thus offering both first and second level entrances. Occasional large window areas create conversation areas which relieve the usual monotony of a long corridor and provide a "street" atmosphere to the circulation way.







AREA I COMMUNITY COLLEGE

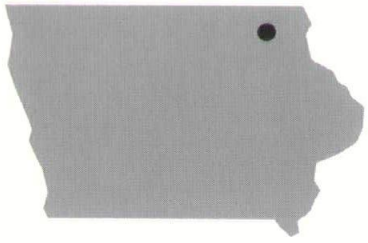
CALMAR, IOWA

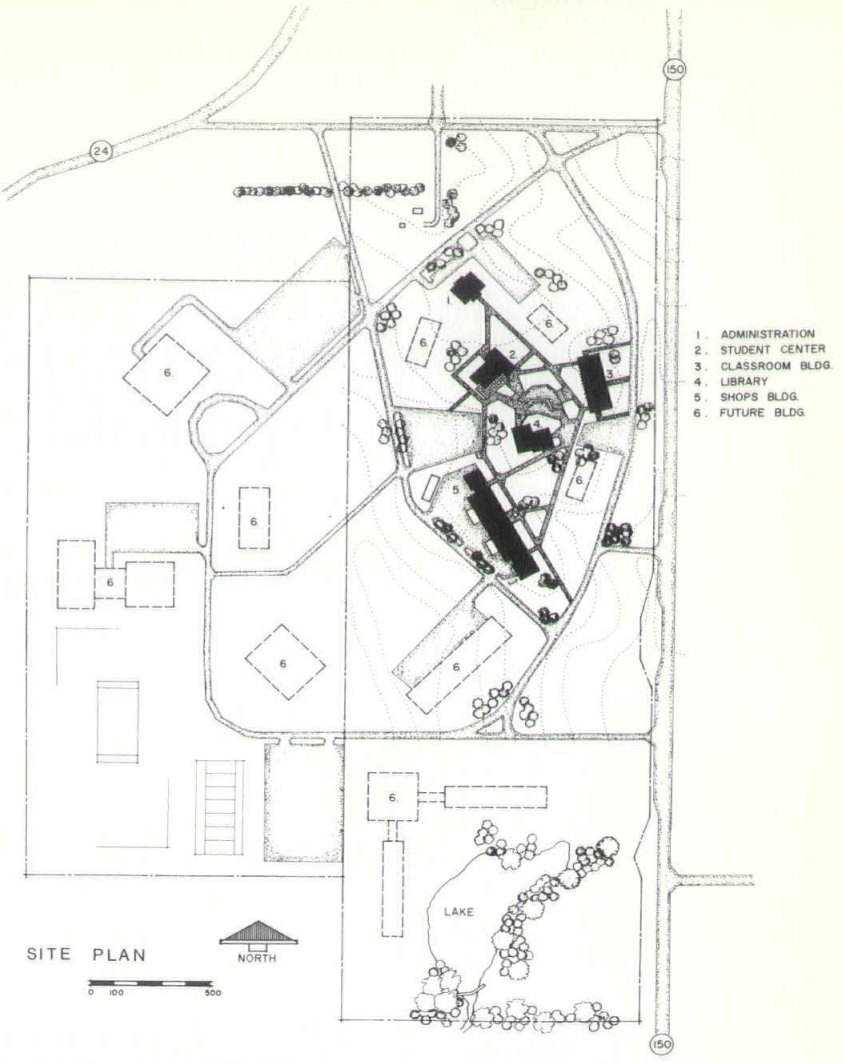
LOUIS C. KINGSCOTT AND ASSOCIATES ARCHITECT

A 212 acre site near this small community, thirteen miles southwest of Decorah, was selected for the college. The site is flanked on the east by State Highway 150 and on the west by Highway 24.

A ring circulation road defines the central campus area, establishing parking areas outside the first phase academic complex. A future outer ring road will extend development to the west and south, including a lake.

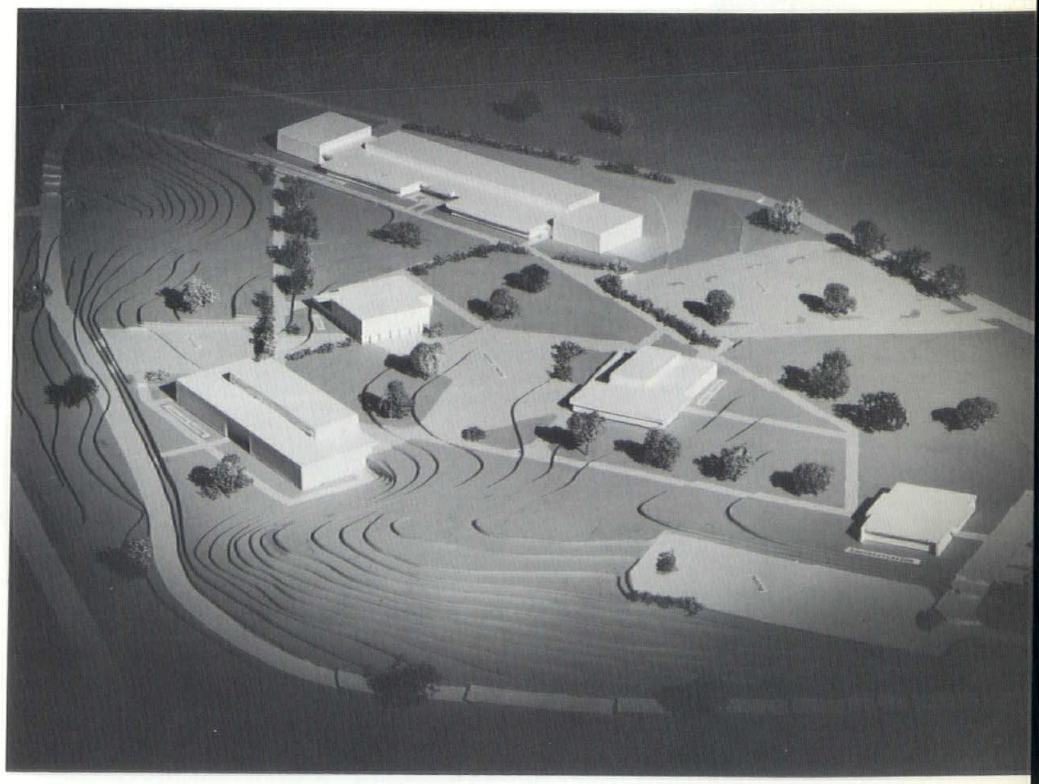
The first phase, planned for 1,000 full-time students, includes a Vocational-Technical Shops Building, a Classroom Building, a Library, and a Student Center. While the initial stage focuses on vocational-technical training and continuing education, the next phase will emphasize Arts and Sciences.

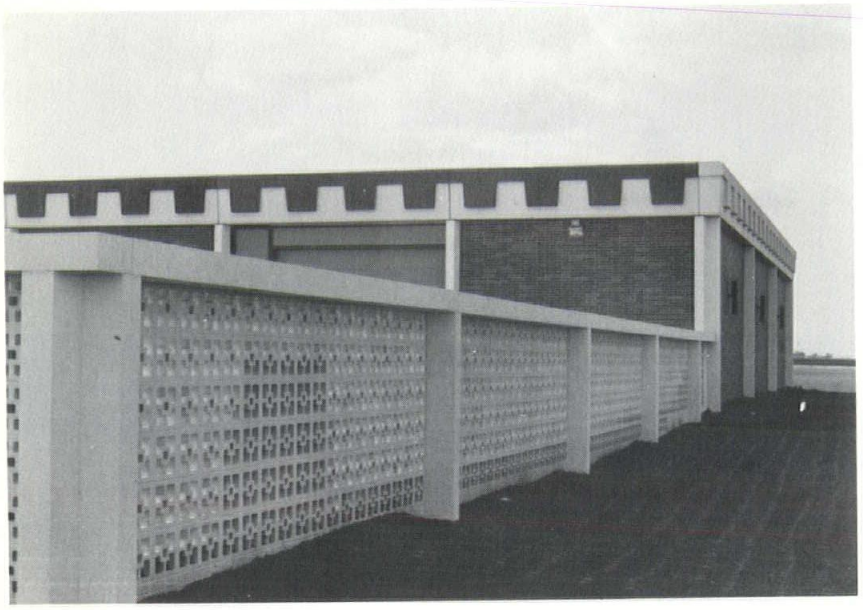


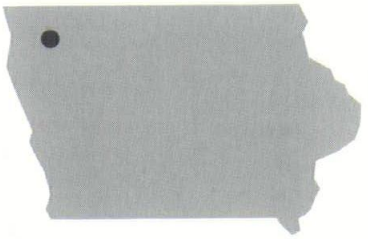


Two buildings are currently under contruction. The Shops Building includes an automotive area housing automotive mechanics and auto body; partsmen training area including a classroom - laboratory situation; a farm equipment area including a farm mechanics shop; welding and metals shop; building construction area including a carpentry and masonry shop; classrooms; a drafting room; auxiliary building trades; and a building materials management section.

The Classroom Building houses nine general classrooms, two science laboratories, and space for cosmetology, practical nursing, interior decorating, distributive education, general clerical, stenography, and accounting.







AREA IV COMMUNITY COLLEGE

SHELDON, IOWA

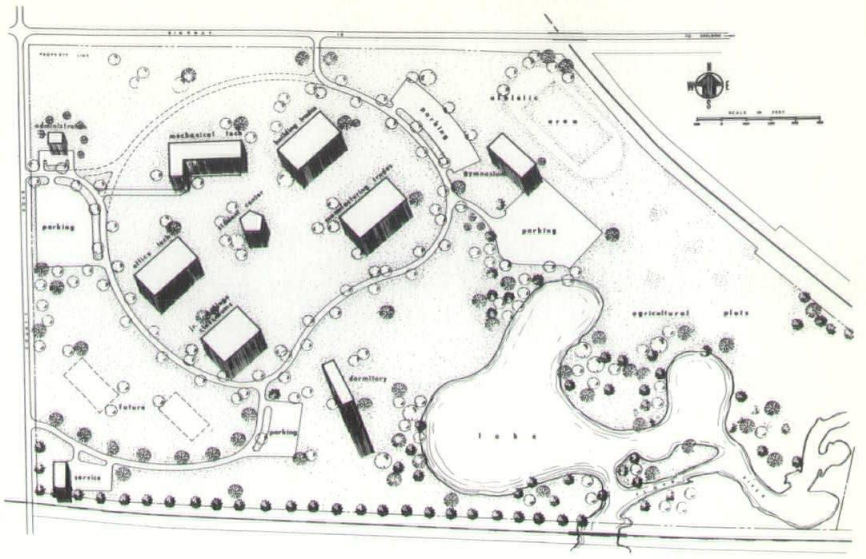
ARCHITECTS ASSOCIATED ARCHITECT

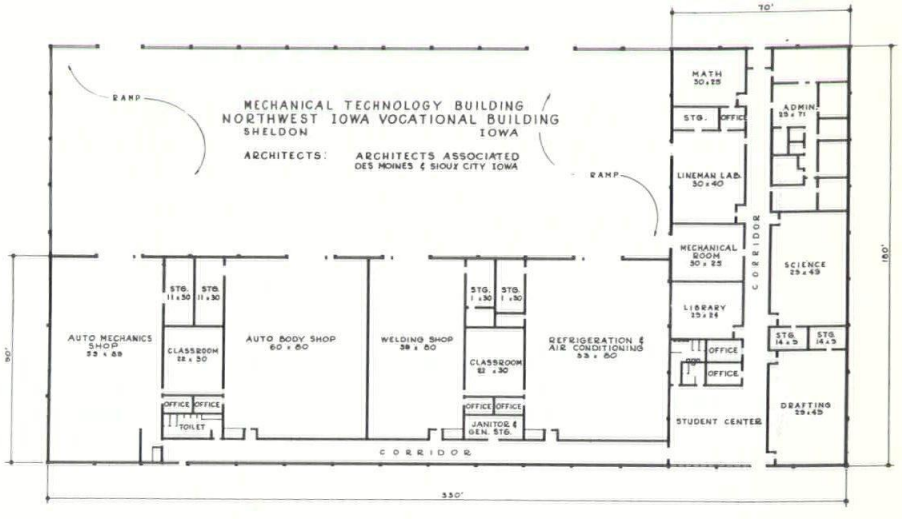
In 1966 the location for the Area IV Community College was selected. The 145.9 acre site is situated south of, and adjacent to, Highway 18 one-half mile west of Sheldon, Iowa.

Program and site considerations lead to the formulation of a building complex grouped around a common area which will incorporate a student union. Individual buildings within the group will be designed to provide facilities for the various technologies and trades anticipated in the campus curriculum. The complex will be located on the high portion of the site overlooking a lake. Eventually dormitory facilities and an auditorium will be constructed outside the central campus area.

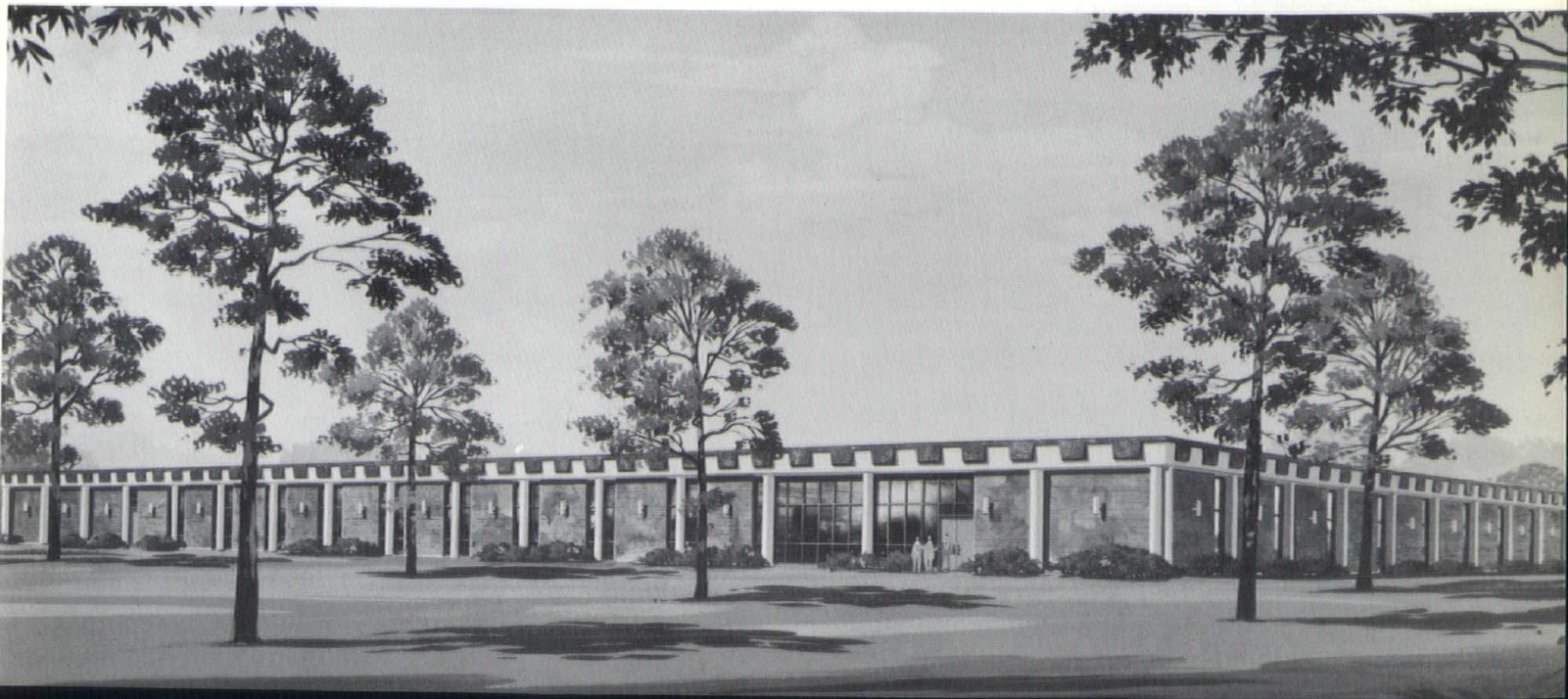
The first building to be constructed is the 36,500 square foot Mechanical Technology Building. The major wing of the building (91' x 260') consists of four large shop areas—Auto Mechanics, Auto Body Shop, Welding Shop and Refrigeration and Air Conditioning. The first two, Auto Mechanics and Auto Body, are separated by a 24' wide core area which consists of separate storage rooms for each shop, a common classroom (22' x 30') accessible from both shops for classroom work and lectures, private offices for both shop instructors, and the toilet facilities for the entire shop wing.

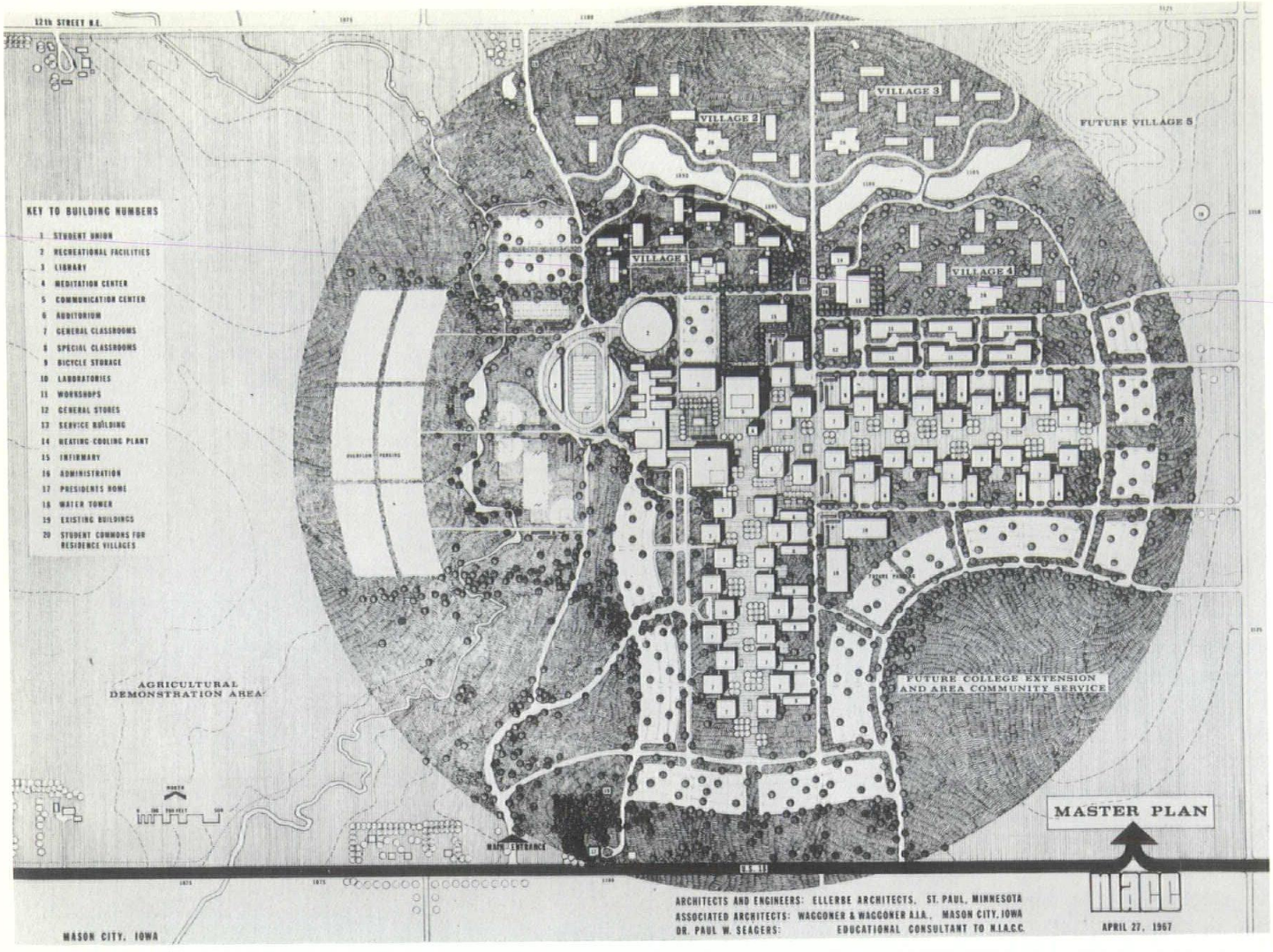
The minor wing (71' x 181') houses four classrooms, a library, the mechanical equipment room, teachers offices, a 34' x 40' Student Lounge, and temporary administration offices.

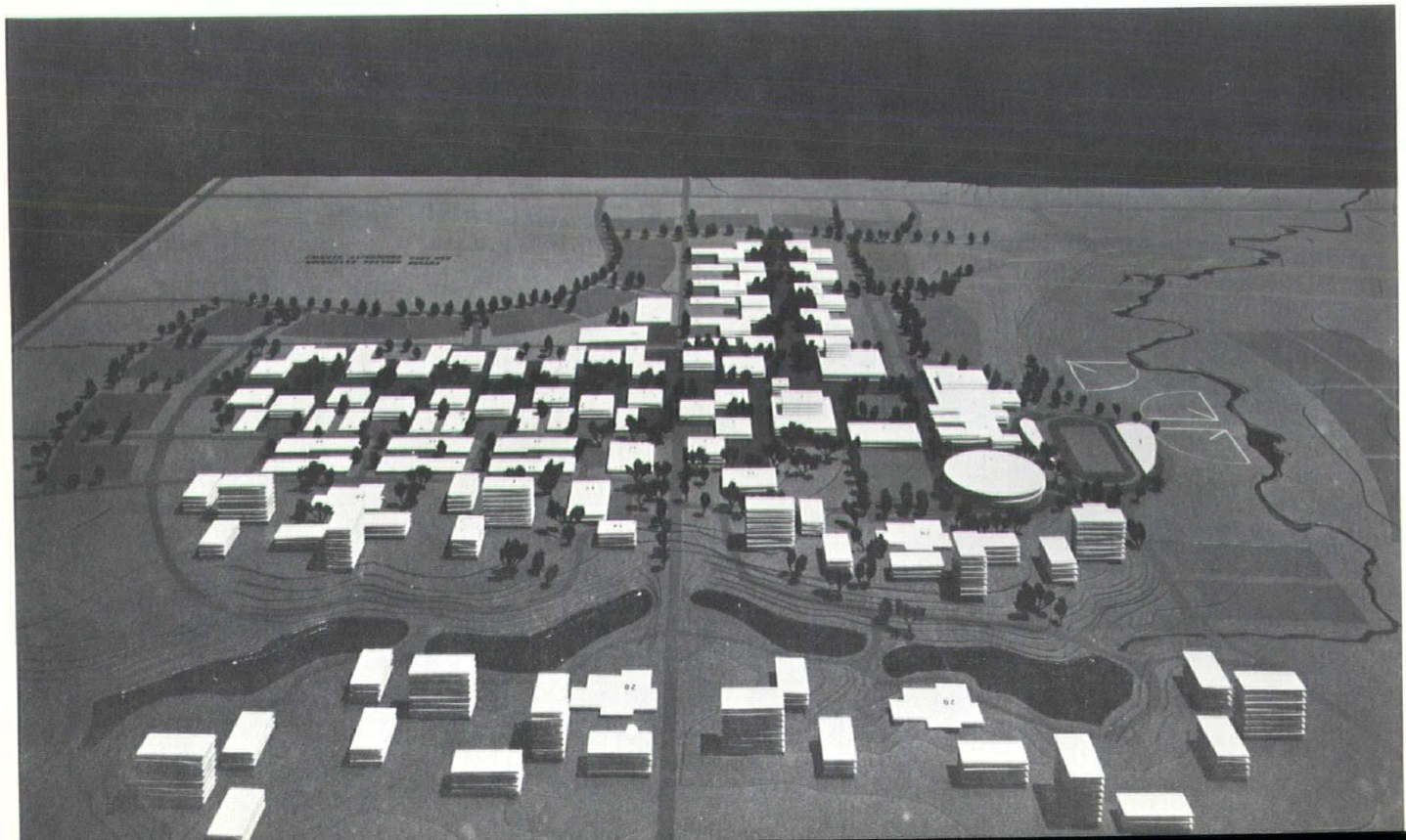


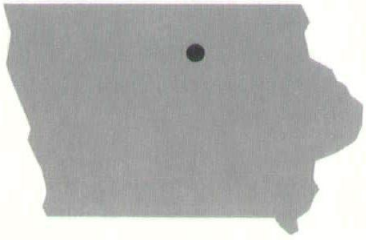


FLOOR PLAN




12th STREET N.E.
VILLAGE 2
VILLAGE 3
FUTURE VILLAGE 5
VILLAGE 1
VILLAGE 4
KEY TO BUILDING NUMBERS
1 STUDENT UNION
2 RECREATIONAL FACILITIES
3 LIBRARY
4 MEDITATION CENTER
5 COMMUNICATION CENTER
6 AUDITORIUM
7 GENERAL CLASSROOMS
8 SPECIAL CLASSROOMS
9 BICYCLE STORAGE
10 LABORATORIES
11 WORKSHOPS
12 GENERAL STORES
13 SERVICE BUILDING
14 HEATING-COOLING PLANT
15 INFIRMARY
16 ADMINISTRATION
17 PRESIDENT'S HOME
18 WATER TOWER
19 EXISTING BUILDINGS
20 STUDENT COMMONS FOR RESIDENCE VILLAGES
AGRICULTURAL DEMONSTRATION AREA
FUTURE COLLEGE EXTENSION AND AREA COMMUNITY SERVICE
MAIN ENTRANCE
MASTER PLAN
MASON CITY, IOWA
ARCHITECTS AND ENGINEERS: ELLERBE ARCHITECTS, ST. PAUL, MINNESOTA
ASSOCIATED ARCHITECTS: WAGGONER & WAGGONER A.I.A., MASON CITY, IOWA
DR. PAUL W. SEAGERS: EDUCATIONAL CONSULTANT TO N.I.A.C.C.
APRIL 27, 1967





AREA II COMMUNITY COLLEGE

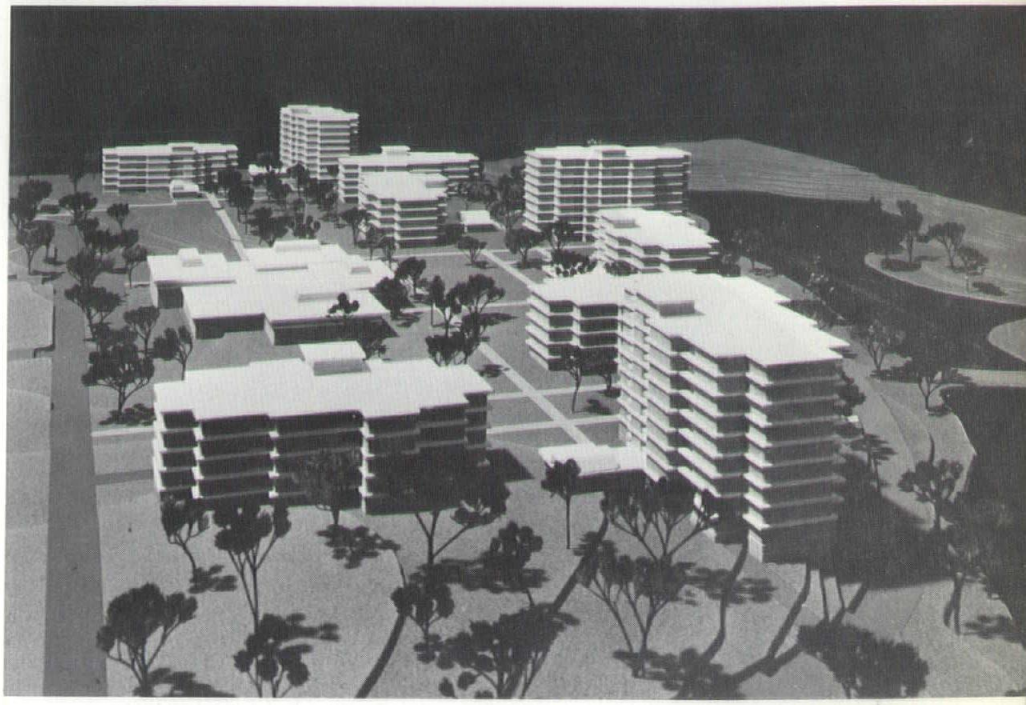
MASON CITY, IOWA

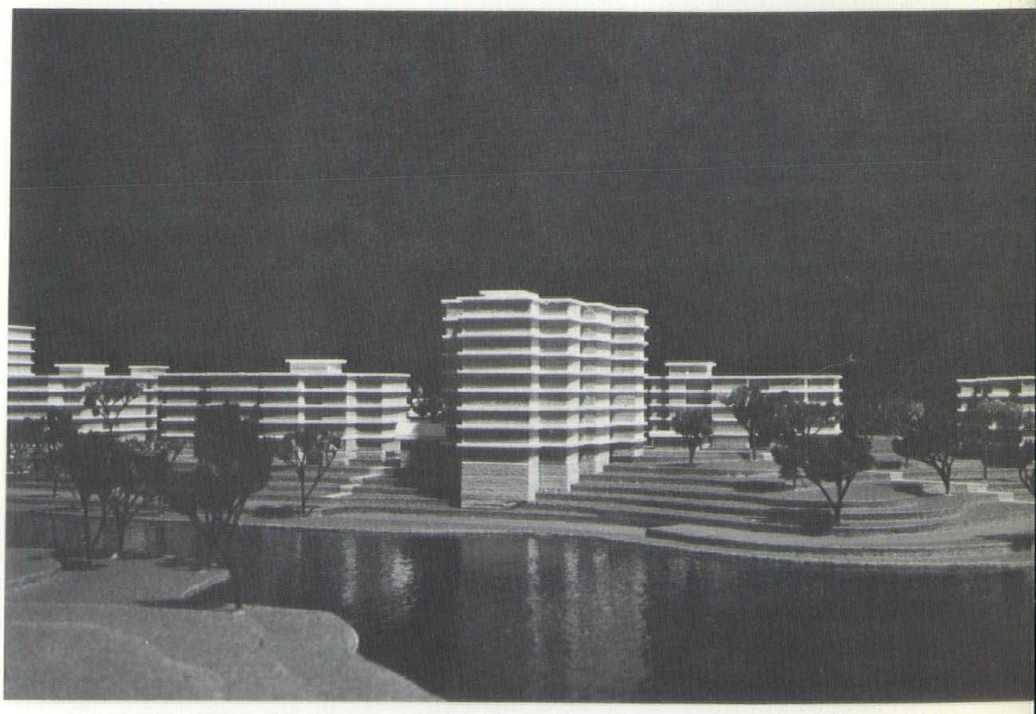
ELLERBE AND COMPANY, ARCHITECT

WAGGONER & WAGGONER, ASSOCIATE ARCHITECT

Three hundred and twenty acres on U. S. Highway 18 east of Mason City will contain the campus of Area II. The academic facilities will be located on a hillside overlooking a potential lake site to the west and north.

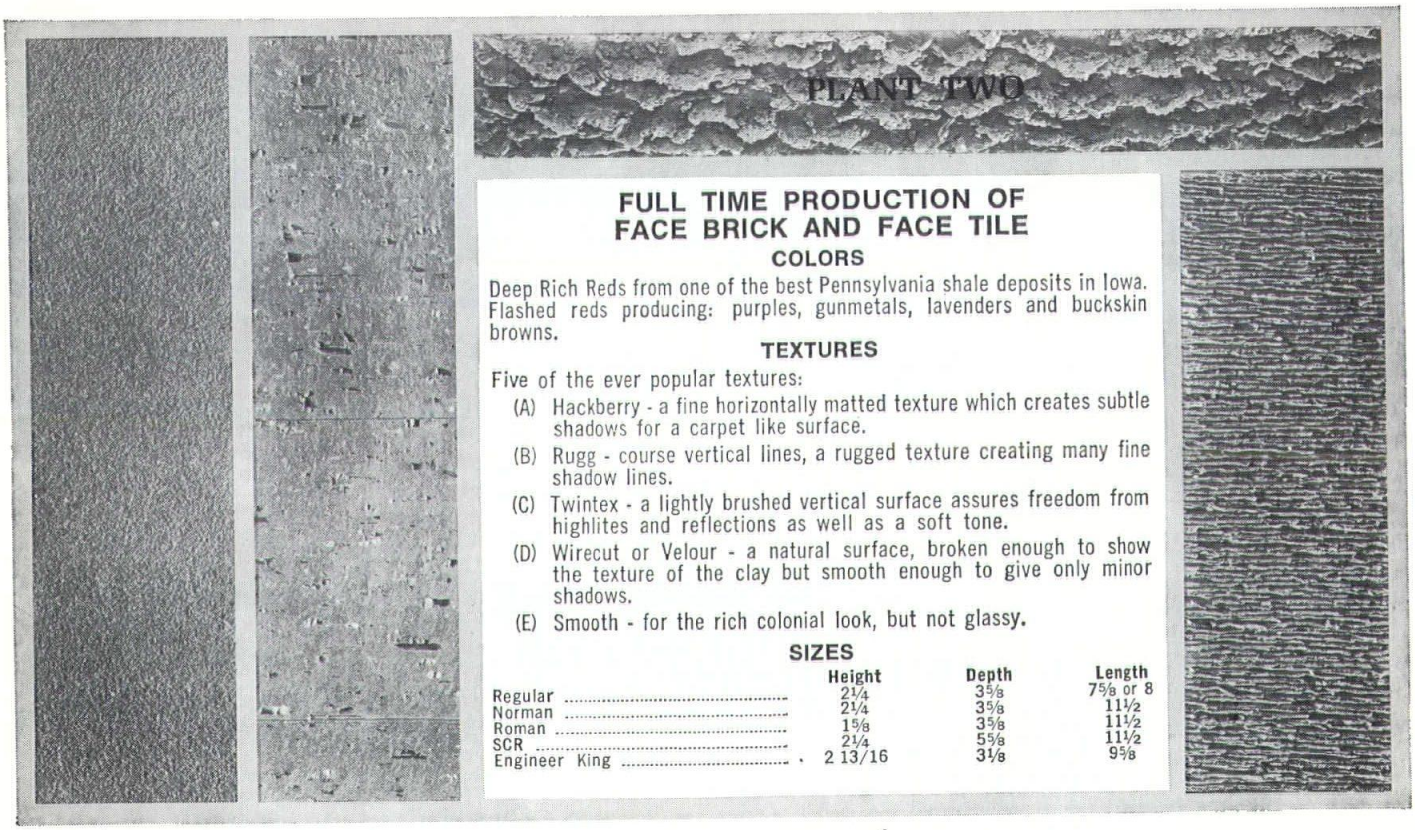
A central campus area will be surrounded by an access road and peripheral parking. Projected facilities include a Vocational - Technical Building, Paramedical Building, Communications Skills Building, and a Social Sciences Building, as well as a Student Center, Library, Auditorium, and two housing "villages".





a new major face brick supplier

REDFIELD BRICK & TILE COMPANY



FULL TIME PRODUCTION OF FACE BRICK AND FACE TILE

COLORS

Deep Rich Reds from one of the best Pennsylvania shale deposits in Iowa. Flashed reds producing: purples, gunmetals, lavenders and buckskin browns.

TEXTURES

Five of the ever popular textures:

(A) Hackberry - a fine horizontally matted texture which creates subtle shadows for a carpet like surface.

(B) Rugg - course vertical lines, a rugged texture creating many fine shadow lines.

(C) Twintex - a lightly brushed vertical surface assures freedom from highlites and reflections as well as a soft tone.

(D) Wirecut or Velour - a natural surface, broken enough to show the texture of the clay but smooth enough to give only minor shadows.

(E) Smooth - for the rich colonial look, but not glassy.

SIZES

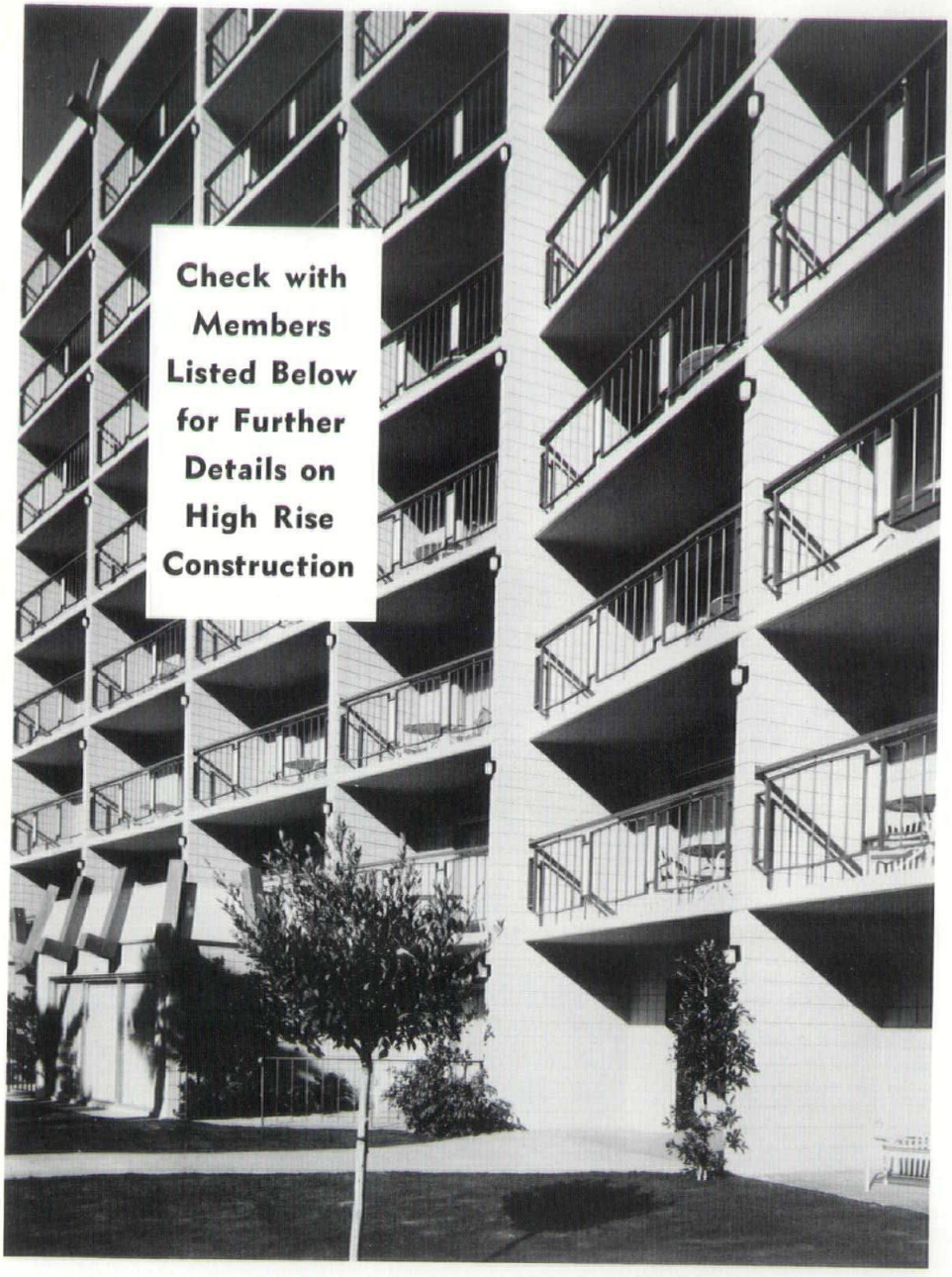
	Height	Depth	Length
Regular	2¼	3⅝	7⅝ or 8
Norman	2¼	3⅝	11½
Roman	1⅝	3⅝	11½
SCR	2¼	5⅝	11½
Engineer King	2 13/16	3⅛	9⅝

GOODWIN COMPANIES

MANUFACTURING DIVISIONS
DES MOINES CLAY COMPANY
FORT DODGE BRICK AND TILE COMPANY
MASON CITY BRICK AND TILE COMPANY
OSKALOOSA CLAY PRODUCTS COMPANY
OTTUMWA BRICK AND TILE COMPANY
REDFIELD BRICK AND TILE COMPANY

DES MOINES
3810 INGERSOLL AVENUE
DES MOINES, IOWA 50312

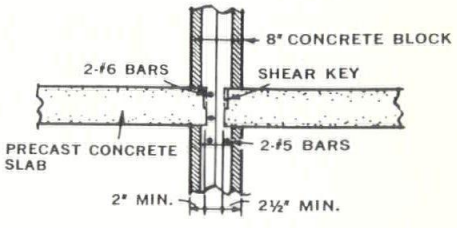
Modern masonry is reaching new heights with loadbearing concrete block



• THE HIGH RISE

newest concept in concrete masonry construction

Today concrete block possesses more comprehensive strength than ever before—yet still provides more wall area for less material and labor costs. This, combined with the wide variety of shapes, sizes, colors and textures, helps to elevate the most creative designs, the most demanding loadbearing requirements, to new highs.



Concrete block is coming up in the world—and fast. These loadbearing walls of scored 8" x 8" x 16" block were completed at a rate of one story per week over a four month period, enabling the owner to open for the summer season. Note how tranverse wall system provides the amenity of balcony privacy. Integral scoring treatment in the modular unit evinces a more attractive wall network of 8" squares. The loadbearing walls support concrete floor slabs that were precast at the site.

members of IOWA CONCRETE MASONRY ASSOCIATION

Clinton Block Co.
Clinton, Iowa

Smith Concrete Products Co.
Creston, Iowa

Iowa Concrete Block & Material Co.
Des Moines, Iowa

Merle Hay Block Co.
Des Moines, Iowa

Lake View Concrete Prod. Co.
Lake View, Iowa

Oskaloosa Concrete Products Co.
Oskaloosa, Iowa

Rock Valley Block & Tile Co.
Rock Valley, Iowa

Concrete Products Co.
Sioux City, Iowa

Lakes Concrete Industries
Spencer, Iowa

Demco, Inc.
West Des Moines, Iowa

Iowa-Illinois Concrete Prod. Co.
Bettendorf, Iowa

Burlington Block Co.
Burlington, Iowa

Cedar Rapids Block Co.
Cedar Rapids, Iowa

Cherokee Concrete Products
Cherokee, Iowa

Zeidler Concrete Products Co.
Clear Lake, Iowa

Marquart Concrete Block Co.
Waterloo, Iowa

Concrete Products Co.
Dubuque, Iowa

Estherville Concrete Prod. Co.
Estherville, Iowa

The Johnston Corporation
Fort Dodge, Iowa

Coralville Products, Inc.
Iowa City, Iowa

Concrete Products Co.
Iowa Falls, Iowa

toward regional form

part 1

Mark C. Engelbrecht

This is the first of four articles written in advocacy of an idea. The idea is one of regional urban form and this initial paper will outline the problem and discuss the conceptual roots of the solution. Subsequent articles will offer more concrete and specific information relevant to the nature of the form given shape by this idea.

Not long ago, a politician of national significance addressed a group of Iowans in a manner astonishingly frank and to the point. The subject of his remarks was the future development of this state and the central meaning of his theme was simply that urban development could not be allowed to continue in our region. The reasoning behind his statement was quite clear; future generations of the world can avoid mass starvation only if this country can find the means to feed them, and the means to feed them is contingent upon maintaining our reservoir of arable land. The future not far distant will render the rich loam of the Iowa prairie as precious a commodity as any of the natural resources available to mankind. Assuming, and I am sure the politician was, that urban growth will continue by means of the post-war tradition of horizontal extension, it is not difficult to perceive the logic of this man's arguement pointing to the absurdity of continued urban development within our state. Further, I believe one can carry this argument out of the bounds of contemporary politics and into the arena of global necessity. If urban development means a continuation of the great land-eating suburban thrust of modern America then even the natural urban growth of our state will be stopped short by a driving need of international proportion.

My generation of Iowa architects and environmental designers will be witness to this closing operation and it is high time that our serious attention be turned to the problem. Architecture is an urban art and our possibilities as architects and designers are inexorably welded to a central precondition: the existence of a large, vital and urban society. Without this precondition we must either pack our bags or reconcile ourselves to careers of severely limited outreach and effectiveness. It is time to revive the old word "regionalism" because it is possible that once again it can be given meaning. Far from being in the back-wash of western civilization, as many think, Iowa, with its surrounding region, will increasingly reside at the focus of international attention, expectation and hope. Within this momentous era a new and relevant regionalism can be forged consisting of a coalition of local architect and planner. The primary goal of this movement will be the proper, enlightened, poetic development of the resources of our region in the service of man.

We must begin to offer alternatives to the national political leader, for although the basic sense of his analysis cannot be faulted, only those native to a region, who know it and love it, can point to possibilities not broached by logic. This series of papers presents one such alternative, but, hopefully, it will also serve the broader purpose of provoking a dialogue producing others. In this way, perhaps we can, as colleagues in the discipline of environmental design, come to a synthesis of attitude yielding a vision of the ultimate destiny of our region worthy of future expectation and need—local and world wide.

The conceptual core of the environmental idea presented here is not new. The only claim to originality made by this specific idea is the wedding of an aging, but still valid, theoretical system to a circumstance of reality suitable for its realization.

Ever since the industrial revolution effectively demolished the agrarian base of western civilization in nineteenth century England, planners, architects and urban sociologists have been dreaming of means to reclaim the natural values of the countryside for the urban industrialized population. Garden City and Green Belt schemes were followed by the more sophisticated park-like

environments of Le Corbusier. All were intent upon reclaiming for urbanized man the benefits of direct contact with the natural world and all, whether in theory or experiment, were plagued with the same basic fallacy. The parklands and greenbelts, armed only with the promise of eventual meaning and value for collective man, were no match for the expedience-oriented vitality of industry and the long suppressed dream of private acquisition and possession of land in the hearts of the factory workers and managers. The green belts were consumed and the magnificent towers of Le Corbusier would have eventually risen from a stratum of industry and private villas where miles of parklands had been intended to exist.

Although these schemes were based upon a new union of the urban environment and the natural world, they were given meaningful shape through the principle of containment. This principle, finding precedent in the defending walls of ancient cities, gave meaning to the Garden and Green Belt cities as well as Le Corbusier's formidable city-scope of La Ville-Radieuse. Louis Kahn has implemented the principle of containment to give shape to his dreams of the Philadelphia Center City and many other urban designers have imagined some limiting environmental device as the only possible means by which American cities might be rendered susceptible to design intent.

But the modern tradition of American urban development is that of an open ended horizontal extension and, as such, is naturally antagonistic to the idea of containment. Made possible, and then necessary, by the automobile, sanctioned by tax laws and encouraged by a dream of private ownership and occupancy of land, this mode of urban growth defeats even natural barriers (exemplified by the effective removal of the San Bruno mountain range South of San Francisco). It is no revelation to state that our cities are without form and that planning in America has become little more than the hand-maiden of the developer.

But in Iowa it must stop. As farms grow larger, their management centralized, the demand increased, agriculture will prove increasingly profitable and necessary and will provide the only really effective barrier against horizontal urban sprawl. The idea I am going to present in these papers seeks to use this uniquely regional circumstance as a generator of urban form, for here we are in possession of a *viable* green belt and it is worthwhile to consider how this natural advantage might be incorporated with the construction of new cities to finally realize the dreams of urbanologists spanning the past century. Far from being a region where urban development should be curtailed, Iowa and its neighboring states could become the location of a new mode of urban existence not within the potentiality of those great cities already existing within our country. In sum, the intent of the idea presented here is to create a new and meaningful synthesis of urban and agrarian values with hopes of adding significant dimension to the urban experience and of assuring maximum productivity for the arable soil.

To accomplish these objectives, the urban form to be discussed in forthcoming articles is schematically comprised of a number of extremely dense, vertically extended communities limited by a transportational matrix realizing a larger urban entity of nearly a million inhabitants. The modern technology of vertical extension will provide each living unit with visual access to the incredibly rich carpet of land under production, and, to conserve agricultural land, the communities will be built upon already existing towns (the area occupied by a village of 500 people can easily support a city of 50,000) and parts of the terrain not suitable for production. This brief outline of the project under consideration is not intended to explain the specific nature of the urban form envisaged but rather, to present, in more explicit terms, the conceptual root of the idea. Questions of concrete shape, social adjustment and accommodation, governmental form, economic base and others must go begging for the moment, but there is one other fundamental hypothesis that must be broached at this point.

The historical weakness of American planning in the face of the urban juggernaut leads contemporary architects and planners to approach proposals of the sort contemplated here with considerable skepticism. I believe, however, that the next decades must witness planning and urban design assuming the initiative in our country, and it is just this conviction that renders it both possible and necessary to presently create on a scale of the scope imagined in these papers.

An old planning anecdote states that in order to relieve the crushing urban problems of New York City, it is necessary to begin by investigating the methods of grain shipment out of Kansas. In this field of national, even global, necessity it is time for each region of this nation to seriously ponder its own function, possibility and ultimate destiny.

LESSONS FROM CHARLES CITY

by Ronald Baker, P.E.
Chief Structural Engineer
Durant, Deininger, Dommer, Kramer & Gordon; Dubuque

At 4:53 p.m. on the 15th of May 1968, the sky boiled up over Charles City, Iowa. A tornado screamed down and slammed into this community of 10,000. The angry black cloud chewed up whole buildings and spewed out destruction in all directions, shattering in five minutes many years of hope, savings, and work. From the south edge of the town to the north edge is a continuous path of death and devastation.

With only the names changed the same story could be told of Oelwein and Maynard.

It was not unusually dark as the tornado approached, but the sound was the roaring of many trains. Golf-ball-sized hail was flung around, breaking windows and bashing metal panels. Trees were stripped, leaving only naked trunks, or torn out by the roots.

The forces of nature are truly awesome. The calculated wind speed was at times in excess of 500 miles per hour. Such a wind would exert a force of 800 pounds per square foot on any surface in its path. The pressure in the "eve" has been estimated as low as half that of normal atmospheric pressure. This means a closed building in the eye has as much as 1000 pounds per square foot exerted against its walls and roof, from the inside.

It becomes fairly easy to see how a tornado causes damage. First the buildings in its path are subjected to the great pressures of the peripheral winds, which push many buildings over and snap trees. If the structure survives these winds it then is in the eye and it will explode due to the great difference in pressure inside the building from that outside. Following this the building is again smacked by the peripheral trailing winds.

The effects of this can readily be noted through observation of the damage along the path. The buildings which were pushed off their foundations or blown over were moved or fell in a general northerly direction. They failed as a result of the leading edge of the peripheral winds. It is assumed that the trailing peripheral winds might have toppled buildings in a southerly direction but a structure surviving the leading winds would probably also survive the trailing winds. The building which survived with no appreciable structural damage had all its windows blown out by the extreme differential between internal and external pressures.

In buildings and material objects only time will reveal the cost, and it will be great, but this loss is replaceable. The irreplaceable loss in human lives is officially set at thirteen. A warning system was not in operation; in fact not even in existance. Those who had their radios on KCHA knew a tornado had been sighted in Marble Rock. Those who didn't have their radios on knew nothing. The irreplaceable loss could have been reduced with a warning system. The replaceable loss could have been reduced by a few simple adjustments in building construction.

The property loss can be divided roughly into two categories;

1. Superficial damage
2. Structural damage

The superficial damage includes loss of shingles, siding, windows, etc. Structural damage includes roofs blown. buildings leveled. moved off their foundations, etc. The cost of repairing superficial damage is obviously considerably less than the cost of structural damage as the latter frequently requires complete re-building.

Some general classification of types of structures and their ability to withstand tornadic forces can be made. The first category, subjected to greatest damage, consists of wood framed residential type buildings. In a two block width from the south city limits to north city limits (one block on each side of ground zero), which constitutes the approximate location of the maximum intensity forces, most such buildings were destroyed completely or so structurally weakened as to render them unsafe. Included in this category would be such structures as churches with wood roof framing and wood stud bearing walls. Two such structures were leveled leaving only the bell tower. Most of these buildings were pushed north. Where the buildings remained substantially intact they were pushed off their foundations from a matter of inches to several feet, always in a general northerly direction. *Most were not anchored to the foundation wall in any way.* One building which had a wood plate bolted to the foundation wall and the studs toe-nailed to the plate was flattened. The wood plate remained bolted to the foundation and the studs were ripped up, nails and all, from the plate and deposited about 20' north. Many buildings were pushed over like a house of cards with the walls flat beneath the roof or with the roof blown away. One residence had the refrigerator, stove, bathtub, etc., still standing in place on the floor. The walls and roof could be seen 100' to the northeast.

The second category, those buildings which received the most damage other than residential type buildings, is that of single story buildings with light roof systems (wood or steel) used in conjuction with masonry bearing walls. An example of a building of this type is the typical supermarket and it is also common in one story schools and automobile garages. The south side of such buildings are subjected to overpressures which result in a great uplift force against any cantilever or overhang. This appears to be coupled with a suction on the roof. The manifestation of this is that all or part of the roof is blown off. Following this long masonry walls without crosswalls blow over, leaving only the corners standing.

The third category is that of steel buildings with metal roofs and metal sidewalls, especially with open interiors. One such building with no windows appeared to have exploded. Considerable buckling and bending was observed in the steel members of these buildings. However, one situation was observed where a prefabricated building was totally destroyed while a similar building about 100' away was nearly undamaged.

The fourth category, those which received the least structural damage, consists of buildings framed in steel or concrete where the frame in conjunction with masonry walls resisted the tendency to move laterally and the columns provided resistance to uplift and overturning.

An analysis of the five categories and observation of the damaged buildings make one factor appear

(Continued on page 26)

FEDERAL HOME LOAN BANK BUILDING
Des Moines, Iowa

ARCHITECT: Architects Associated
(Smith-Voorhees-Jensen)
Des Moines, Iowa

GENERAL CONTRACTOR: Ringland-Johnson-Crowley Co.
Des Moines, Iowa

MECHANICAL CONTRACTOR: Iowa Sheet Metal Contractors, Inc.
Des Moines, Iowa

Comfort assured here . . . with air diffusion, sound control and ***polrized*** ® light by ALLIED

In cooperation with the architect, general and mechanical contractors, ALLIED developed a unique, integrated ceiling for the new Federal Home Loan Bank building, located in the urban River Hills area of Des Moines. To assure a proper comfort level throughout the building and to accommodate a necessary variable in air distribution . . . QUADRO-FLO ducted linear air diffusers were installed along the building's striking all-glass front, where the air-conditioning load is heaviest. Then, in relatively less demanding areas, ALLIED installed AIRSON AURATONE air diffusion ceiling board. Also, for true contrasts and maximum glare-free light, ALLIED integrated POLRIZED lighting throughout the ceiling. We welcome the opportunity to discuss your next project.

ALLIED CONSTRUCTION SERVICES, INC.

DES MOINES
DAVENPORT
PEORIA

DESIGN, RESPONSIBILITY, AND ARCHITECTURE

Excerpts from an address by Robert L. Durham FAIA immediate past president American Institute of Architects dealing with the effect on the architect's function of the changing liability picture.

No architect will argue that design can, or should, take place in a vacuum. But architects do believe that liability is one of the considerations which can exert enough pressure to make good design extremely difficult to achieve. When this happens, it is society that is the biggest loser, although most immediate injury may be sustained by the owner.

The architect has a deep responsibility to the owner to come up with the best design he can. On each job, the architect must research for a specific solution to a specific problem, and in doing so he must be free to utilize new and exciting materials and techniques with the full knowledge of his client. While he must be responsible for his mistakes, the architect must not let the quality of his creativity be dulled because of the fear of future claims.

Of course the architect's responsibility to the owner does not end with design. It extends to skillful development of contract documents and observation of the construction work.

The relationship of the architect to the owner is both important and unusual. The architect comes to his client with nothing to sell except advice and time. He is not a builder, and he is not a decision-maker except as the agent of the owner.

Architects have been accused of "romanticizing" this relationship. I doubt that any designer who has practiced more than a few months would be guilty of doing so. We understand that there are many kinds of clients, and many kinds of client-architect relationships.

There is, too, a public or community responsibility that must always parallel the architect's professional duty. The public uses and sees a building long after the owner may have taken his profit and departed. There can be no lasting profit to the architect if he has pleased his client but blighted a neighborhood.

Our concern, therefore, that liability problems can adversely affect design is based on the recognition of the architect's responsibility to the owner, and to the community as well.

We live in a time when society has greatly increased its demands on the design professions. From the design of relatively small structures, the demands have escalated to the design of large communities and new towns and cities.

The design and construction challenge that faces us is quaintitatively enormous. We cannot meet it through timidity, or through a reliance on old ways of doing things. The scale of the problem has grown, and we must grow, too, if we are to retain significance. I am speaking, of course, not just of the architectural profession, but of all those professional, business and technical groups which make up the construction industry.

Clearly we are all concerned with our legal responsibilities and liabilities.It seems just as clear to me that we should undertake a joint effort to carry our case to the public, to the legislatures, and to the courts. I think that all design professions, contractors, manufacturers and labor groups in construction would have a great deal to gain from such an industry-wide approach.

In making an industry-wide attack on the liability problem, we have two objectives. The first is to improve the collective efficiency and responsibility of the building team for the benefit of both the owner and the public. The second is no less important: It is to maintain through joint action the distinctive contributions that each member of the building team makes.

The architect's greatest contribution — though it is only one — is creative design. Never has creative design been more needed than at present—and never has it been more apparent to us that my profession can make this contribution only in a climate of reason and appropriate responsibility.

AIA is dedicated to the creation of such a climate, and believes that the broad importance of this objective deserves the support and assistance of the entire construction industry.

BARBARA WARD CHALLENGES ARCHITECTS

Portland, Oregon, June 25, 1968 — Author and economist Barbara Ward today warned the 100th convention of The American Institute of Architects that continued unplanned and chaotic growth of cities may bring "violence, revolt and collapse" to our civilization, and said the development of a "systems approach" to urban redesign is "the only adequate intellectual response to the challenge of the urban revolution."

Miss Ward delivered the annual Purves Memorial Lecture on the second day of the AIA convention which is being attended by about 3,000 architects and guests.

She told her audience that cities through most of history have been the stimulating force behind the development of civilization and art, but that there have been times when they become "the symbol of social disintegration and collapse."

Our rapidly - urbanizing world, she said, "threatens to become an urban mess" because "urban change is, on the whole, not subject to rational control or purposive policy." Our cities, she noted, "are, in a very

real sense, a by-product of the various phases of the technological and industrial revolution."

"We all know the rising intensity of the evils which flow from the urban avalanche," she said. These include the retreat of rural pleasures, inconvenient travel, isolated communities, and "finally we reach the really murderous, self-perpetuating evils of poverty breeding poverty in the ghettos and the slums."

Miss Ward, an internationally recognized authority on economics, and an influential journalist and writer, said the first step to improve our cities is "to admit that further drift will not correct what drift made inevitable in the first place." The second step is "to see that the reforms are on a scale to meet problems which have been created by a vast number of interlocking changes and which demand recognition on a comparable scale."

She said that "We have in fact to ask what purpose an urban order should serve, how men can live in it as citizens, how they can stop suffering it and begin enjoying it — and this demands answers of scale, of vision, of courage which, happily, are beginning to show signs of breaking through citizen apathy or, more often, citizen bewilderment."

The "systems analysis" approach, she noted, implies the acceptance of a master concept of urban development, rather than development by "the wholly undirected operations of the market."

The cost of improving our cities, she said, will be great, but she noted that "America grows by $50 billions a year" and asked, "Should not half that new wealth be devoted not to the increase in private affluence but to reversing the trend to public squalor?"

Architects, she said, have a "first responsibility" to see "that a great nation, forerunner in a new urban era, thinks greatly enough about its cities to be able to survive."

"A world in which people were housed and fed would be a safer world than our present rocket-threatened, missile-ridden, doom-laden planet," Miss Ward stated.

(Continued from page 22)

more significant than any other. *The tornadic resistance of a building depends primarily on the connections of the structural members.* This is not to say other factors are without importance, but if proper attention is paid to the connections other considerations become less important.

The most desirable solution is to provide resistance to rotation at all joints. Any building which is designed to withstand wind forces and uplift forces as specified in any nationally recognized code will not sustain significant structural damage. It is, however, necessary to provide a means of internal pressure releases such as through windows.

Recognizing that not all buildings will be designed to meet national codes it is still possible to provide much greater tornadic resistance at only slightly increased costs by observing the following guides;

Residential construction

1. Anchor the sill plate to the foundation wall with bolts.

2. Fasten studs to plate with metal angle-type connectors.

3. Anchor floor joists and roof joists or trusses to all wall, both interior and exterior with metal angle-type connectors.

Single story buildings with exterior walls of masonry

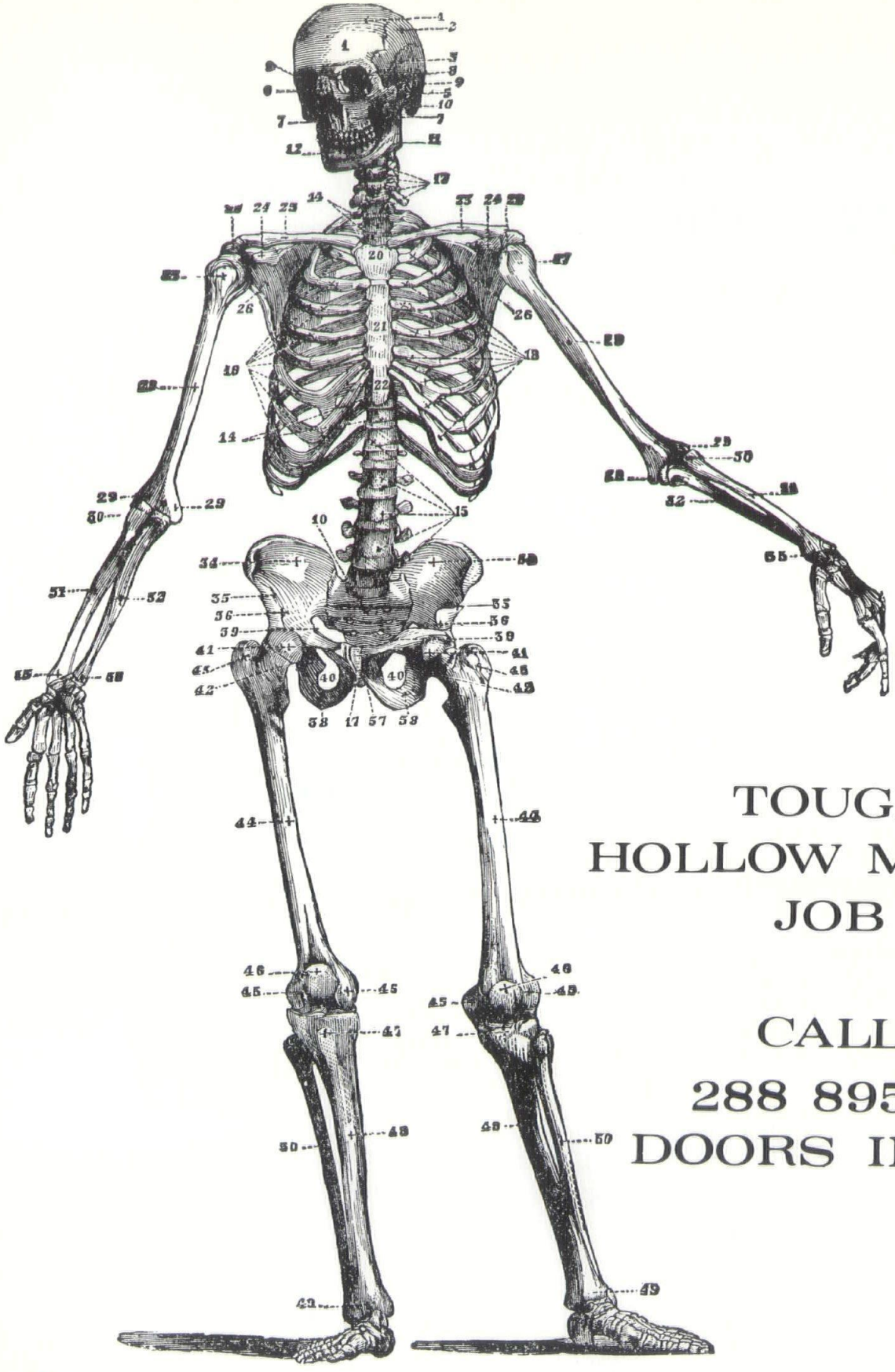
1. When bearing wall construction is used, provide a positive connection between roof system and foundations in order to resist uplift.

2. Build masonry tight against the underside of structure to provide resistance against lateral movement.

The owner of any building may, in the design stage, require that his building be designed to provide maximum tornadic resistance. At little or no extra cost any structural engineer can provide same. It is the responsibility of the governing board on any public building to insist on tornado resistant buildings.

The magnitude of the forces involved make it impossible to eliminate all damage. However, structural damage could be eliminated. Superficial damage cannot be eliminated and to some extent may serve as a substitute for structural damage.

Personal injury and death come from two sources, flying debris from superficial damage and building collapse due to structural failure. The best protection against the latter is competent and adequate design, which has been described. Protection from the former requires an adequate warning system. The price for not providing adequate structural design *and* an adequate warning system was high in Charles City at 4:53 p.m., on the 15th of May 1968!



TOUGH
HOLLOW METAL
JOB ?

CALL
288 8951
DOORS INC

SWANSON · GENTLEMAN INC

LIST OF ADVERTISERS:

INSTITUTE INVOLVES ITSELF IN URBAN CRISIS

Portland, Oregon, June 25, 1968 — The 100th convention of The American Institute of Architects today adopted a broad resolution urging architects to become more heavily involved in solving the "urban crisis," and asking that public officials and private citizens utilize more fully the abilities of the design professions to improve the urban environment. The resolution, adopted unanimmously on the second day of the convention which is being attended by about 3,000 architects and guests, stated that while architects cannot solve all of the "social, economic and environmental problems" of the cities, they can help to build a better nation because "the human condition is very much a product of environmental influences."

The resolution commended to public authorities the "Design Concept Team" which "joins the design professions with other disciplines to create broad urban design programs that blend transportation, housing, education, commerce, industry and other community components into integrated and comprehensive projects;"

It urges AIA's chapters and members to consider creation of "Community Design Centers to focus the profession's capabilities on community environmental problems that might otherwise be neglected and which will create an opportunity for architects to utilize their talents for the public good and for the benefit of those who may not be able to pay for these services;"

It commends to local public authorities AIA's "Urban Design Assistance Teams" which upon request of the city and AIA Chapter will visit cities and "provide an urban design overview and a dramatization of the community's environmental problem;"

It states that AIA seeks from other design professions and components of the construction industry "expressions of dedication to solutions of the environmental problems of our cities and our people."

our priceless heritage

Or how things without price have no value at all and thus fall prey to things which have price tags on them. And what a paradox it is that in order to save the "priceless" we must first put a price on it; and soon, if it is to be done at all.

Reprinted from June-July Issue, North Carolina Architect.

By
JAMES C. WALLACE
Associate Professor of Social Studies
North Carolina State University

We live in a world of quantity. Our vast technology, with its unprecedented power, serves as the background against which the daily affairs of our society are carried on; and the habit of quantitative thinking, so difficult for former ages, has become a commonplace. Miles and hours, ergs and pounds, watts and Angstroms, dollars and drachmas. These words, and thousands like them, are the coinage of our time.

In the marketplace, where measure was born, every good and every service has its price, and when all of these are added together, we are pleased to refer to their sum as the Gross National Product. This concept, named with such exquisite aptness, represents a kind of national pricetag, an annual summation of our "production."

But there are many unpriced commodities—strangely enough we call them "priceless"—whose value is not reckoned on our national calculating machine. These are the basic resources which, until now, have always seemed to be in endless supply, and which have contributed the most to Man's happiness on this Earth. They constitute our natural environment—the air, the water, open space, wildlife, forests, quiet and beauty.

These irreplaceable resources, unprotected by adequate price-tags, are now being destroyed on a global scale. Yet, because the ultimate reckoning is only dimly perceived, and the economic gain lies near at hand, the appetite of our undirected technology, powered by a syndrome of growth and greed, continues to increase. Most of our leaders in business and industry remain mesmerized by the rising lines on the "production" charts. Few of them realize that the state of our economy is not wholly characterized by the rate of growth of the GNP. Fewer, still, seem to understand that a Gross National Product implies both a Gross National Consumption and a Gross National Refuse.

The rivers and lakes, the land and the air, are being fouled because they are free, because they are "price*less;*" and if they are to be saved, if, indeed, our civilization is to be saved, we must quickly place upon these elements of our natural heritage a "market price." As a guideline to the establishment of such a price system, we might begin with the most commonly used notion in the casualty insurance business, that of "replacement value." When America's corporate income and expense statements begin to show realistic figures for the damages inflicted by industry upon the environment, it will presage the rapid and permanent decline of such destruction.

In short, we should not permit the word "priceless", when used to describe the great natural endowments of our land, to imply that these resources are without price, and hence may be corrupted free of charge. Rather, we must learn to treat our environment with that high degree of deference which is usually reserved for great and enduring works of art. Our "priceless" heritage, if generations yet unborn are to share its benefits, must be placed beyond the reach of our grasping times. It must be, in truth, *beyond* price.

But the here-and-now has clout to spare, for the short-term gain is hard to resist, and the long-term loss is hard to define. Thus the natural world declines and its counterfeit ascends, while a crude and blind indifference marks the change. An artificial world, domed and tamed for man alone, with wildness gone and nature banned, now lies in early prospect; and this awful vision, such a pallid recompense for what is being lost, enjoys the casual esteem of many people.

What, after all, some of them ask, does it really matter? Granted that Man has always been a part of Nature, has been a partner *with* Nature, does it follow that an artificial environment will be necessarily bad? And are we not, within a fairly short period of time, looking forward to manipulating our genetic structure, and thereby removing defects and improving the race? And, besides, if things go wrong, can we not take care of the situation when it arises?

Such is the simple faith that most of our citizens have reposed in our technology. It is this abiding trust in our unlimited capacities which muffles the voices of alarm and paralyzes corrective action.

It is difficult to explain, as the ecologists are finding out, that Man occupies only a niche, albeit a large one, in the scheme of things. It is hard to get across the idea that Man is a product, two billion years in the making, of his Earthly habitat. It is obscure, to many, that Man is part of a vast and complex web of life which had its beginnings in the distant ages of geological time. He is, in fact, what the world has made him, and he is attuned to its workings with a precision surpassingly fine. His cycles are the cycles of the universe he inhabits. His sleep and wake are the domain of the Earth's rotation. His genetic material, packed with painfully culled information starting with life's first day, lies within him in safety, as it has for millions of years, maintained there at an unchanging 37° Centigrade.

If Man has any meaning at all, then it is meaning in relation to his environment. Without that environment, Man is an absurdity; a mobile bi-pedal computer, programmed for a world long gone. Product of sun and rain and ice, and wind and wilderness, imprisoned within a sack of Pre-Cambrian sea water, watcher of birds and wisher for stars—how will it be to sit on the asphalt plain, alone beneath the sodium glow, the last of the partners in the great adventure?

This is our ultimate fate. If we persist in destroying our environment, we shall destroy ourselves, for we are nothing without it. And should the day come when we finally succeed in separating ourselves from the last vestige of our inheritance, let us not mistake this sad occasion for some species of conquest, for it will be no such thing.

It will be the end of a lengthy retreat, and the beginning of and endless wandering through the reaches of an indifferent universe, in search of a meaning which was left behind.

Project: Tenth Street Bldg, Addition #1, Northwestern Bell Telephone Co., Des Moines, Iowa. ■ **Contractor:** The Weitz Co. ■ **Architect and Engineer:** Tinsley, Higgins, Lighter & Lyon ■ **Ready-Mix Haydite Concrete:** J. C. White Concrete Co. ■ **Lightweight Haydite Concrete used:** Exterior frame fireproofing, and 2½" fill over sub-floor.

FOR LIGHTWEIGHT STRUCTURAL CONCRETE

Weighs approximately 1/3 less than ordinary concrete!

Haydite is the original, time proven aggregate for producing lightweight structural concrete without sacrificing strength or durability. Other uses of Haydite include refractory concrete, insulating concrete, Guniting, insulating fills, roofing granules, filtering medium, hydroponics.

Producers of Haydite aggregate at Centerville, Iowa & New Market, Missouri

For information on specific uses of Haydite contact your local Ready Mix Plant or:

CONSTRUCTION THE MATERIALS
CARTER-WATERS
KANSAS CITY CORP. MO. 64108
2440 PENNWAY GRAND 1-2570

NATIONAL BOARD EYES SCHOOLS OF ARCHITECTURE

Architectural schools of the nation —growing rapidly in number, size and complexity—can expect more advisory assistance from their national accrediting body, along with sharper guidelines for self-evaluation, says the new president of the National Architectural Accrediting Board, Inc.

NAAB is taking a long, hard look at itself, at the nation's architectural schools, and at the state of the art as it related to both the present and the long-range future, says Sam T. Hurst, Dean of the University of Southern California's School of Architecture and Fine Arts, who has just assumed the NAAB presidency.

One of the "elders" among educational accreditation organizations, NAAB is acutely aware of the changes which already have asserted themselves in the field of architecture, according to the NAAB chief.

"As the number of schools increases and the winds of change blow in the field of architectural education, we see NAAB as the pilot organization to influence and help order these changes," Hurst observes.

NAAB already has taken some important steps in this direction, including the adoption of new statutes and by-laws to replace or strengthen some of the regulations under which the Board has been operating since its founding in 1940.

Further, and most important to the ever-broadening scope of NAAB influence, is the fact that the organization has acted to increase the board membership from six to eight to allow for the inclusion of (1) a generalist in education — possibly from the humanities or the sciences and not an architect—and (2) a representative from one of the allied design professions, such as engineering planning or landscape architecture.

"This change is in full recognition of the increasing interdependence of the disciplines which contribute to architecture in its broadest sense," says Dean Hurst.

(Continued on page 36)

WASHINGTON UNIVERSITY NAMES ANSELEVICIUS DEAN

George Anselevicius has been appointed Dean of the School of Architecture at Washington University, Chancellor Thomas Eliot announced today.

Professor Anselevicius has been chairman of the professional curriculum at the School of Architecture for the last two years and has served as Acting Dean since last July. He was appointed Associate Professor in the University's School of Architecture in 1956 and was promoted to Professor in 1962.

He replaces Professor Joseph R. Passonneau who has resigned as Dean and is now on leave of absence from the University to direct the design of the Crosstown Expressway in Chicago.

Professor Anselevicius won the national competition for the Washington University Law School and Social Science Building with architects Dolf Schnebli and Roger Montgomery and is partner in the firm of Anselevicius and Rupe.

A native of Lithuania, Professor Anselevicius graduated from the Leeds School of Architecture in England. He emigrated to the United States in 1947. He has taught at the Institute of Design in Chicago and at the School of Architecture in Ahmedabad, India, and has worked in responsible positions with architects in Chicago, Detroit, New York and St. Louis.

BREAKTHROUGH! *New Culligan automated electronic water softener*

New Culligan industrial Aqua-Sensor provides unlimited soft water, saves up to 36% on salt! Other automatic water softeners are recharged at pre-set times. But because industrial water usage varies, recharging can be too soon or too late. New Aqua-Sensor keeps pace with your water demands—never lets you run out of soft water, yet never recharges needlessly.

Fully Automated. Just as a thermostat detects the need for heat, Aqua-Sensor detects the need for soft water. No timer clocks to set, switches to flip, or buttons to push. Ever.

Unlimited Soft Water. When water usage or water hardness increases—no problem. You always get clear, filtered soft water.

Efficient, Economical. During periods of no water usage—no problem. Aqua-Sensor does not recharge. If the hardness of your water supply varies—same answer. Aqua-Sensor recharges only when needed.

Saves Salt, Saves Water. When a conventional automatic unit was replaced with our patented Aqua-Sensor, the actual salt consumption decreased from 3,900 lbs. to 2,510 lbs. And water needed for recharging was 6,720 gallons less.

How Aqua-Sensor Works. There are two sensors located at the bottom of the ion-exchange resin bed. When hard water reaches the upper sensor, the lower sensor is still immersed in softened water. The sensors electronically detect the difference and signal the solid-state controller. At the proper time, unit automatically recharges.

Lease or Buy. Comes in a full range of sizes, from 5 gpm to 600 gpm. Single and Duplex units. Available for outright purchase, or lease with option to buy. For your convenience, your Culligan Man offers automatic salt delivery service. All in all, the Aqua-Sensible thing to do is call and say—

Commercial and Industrial Softening, Deionization, Filtration, Chemical Feed, Boiler and Recirculating Cooling Tower Treatment

(Continued from page 33)

Founded by joint action of the American Institute of Architects (AIA), the Association of Collegiate Schools of Architecture (ACSA) and the National Council of Architectural Registration Boards (NCAR), NAAB provides site visitations to schools for purposes of accreditation once every five years. Schools are required, however, to submit annual reports.

Staunchly determined not to fit all schools into the same educational mold, NAAB has sought to determine whether or not a school is achieving the objectives set for itself in terms of faculty, curriculum, student requirements, budget, and physical facilities.

It will be to this particular end that NAAB's aggressive new program of advice and counseling will be directed.

"Our board is being asked on more and more occasions to provide help and direction for schools which are growing toward accreditation and schools which recognize that they have problems and need advisory help to solve them," Hurst reports.

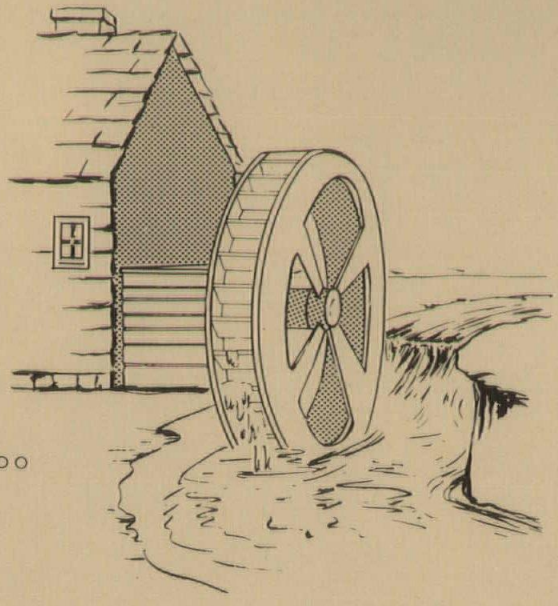
A board member and board secretary for three years before his election as president of NAAB, Dean Hurst himself has participated in many site visits for accreditation and for counseling.

Growing scope of this responsibility may be seen in the growth figures for architectural schools. According to Dean Hurst, while there were only 20 accredited schools in the nation as recently as 1942, there are 63 this year. An additional 20 degree-granting schools are not accredited. Some of the 20, however, are among those seeking NAAB's assistance in building their programs toward accreditation.

USC's own School of Architecture and Fine Arts, among the older ones in the nation, was granted early accreditation by NAAB. Visited by an NAAB accreditation team in 1966, the USC school was reaccredited at that time for a five-year period.

Today there are about 20,000 students attending schools of architecture across the nation, Dean Hurst reports. The number approximates the membership of the American Institute of Architects at almost any given time. Another 10,000 architects are practicing in America but are not AIA members.

we've come a long way since...



Now Dependable . . . Economical Caterpillar Total Energy

Where a customer is seeking a way to cut operating costs or must have the utmost in a reliable electric power supply, "Total Energy" is often the answer. Diesel or natural gas generator sets supply 100% of the plant's electric requirements. Exhaust and jacket water heat from the engines is recovered and used efficiently to provide heating and air conditioning.

At Bourns, Inc.* in Ames, Iowa, four Caterpillar Natural Gas Electric Sets are used as the heart of the T.E. System. Heat is recovered as 15 lb. steam and used in the plant's absorption air conditioning, heating and hot water system. Bourns' direct operating costs have been cut nearly 30% from their projected purchase power costs.

Your local Caterpillar Dealer will be happy to discuss electric power generation with you or your architect. A "Total Energy Package" is now available to provide all equipment required for an integrated system.

your IOWA CATERPILLAR dealers

ALTORFER MACHINERY CO.
CEDAR RAPIDS, DAVENPORT, HANNIBAL, MISSOURI

GIBBS-COOK EQUIPMENT CO.
DES MOINES, FORT DODGE, MASON CITY, POSTVILLE

MISSOURI VALLEY MACHINERY CO.
OMAHA, NEBRASKA, SIOUX CITY

*BROOKS, BORG & SKILES
Architects and Engineers