PROGRAM: LAKE PARK HIGH SCHOOL

NATURE OF PROJECT:

Lake Park High School is presently a twenty year old basic building with a sizable addition (which is ten years old). The present facility has a capacity of 1750 students. The 1975 enrollment topped 2300 students. The obvious need of a new facility is visible but the scope of these facilities shall be discussed later.
LOCATION OF PROJECT:

Lake Park High School
6N600 Medinah Road
Roselle, Illinois 60172

Roselle is a village suburb of Chicago, Illinois. It is located 35 miles northwest of downtown Chicago. Roselle is a very small (pop. 7000) community having many small businesses of its own but also many economic and social ties with Chicago.

Lake Park High School is situated on the southern edge of Roselle and is one of two schools in that school district. The other school is now under construction but will be at capacity (1500 students) upon completion next year.

Lake Park has grown by additions with very little thought of overall planning. As an example, the narrow halls, too small to handle the "between class" traffic. Other characteristics include: overcrowded class rooms, lunch periods from 11:00- 1:30, double shifting students in a shortened school day, and encouragement of students to use the work-study programs to alleviate overcrowded class room areas.

Note: Information from Supt. Carl Forester
SCOPE OF EXPANSION:

The Roselle community and surrounding area is 35-40% developed now and is expected to continue as basically single family dwellings and some apartment developments. According to the Arthur Delittle Research Company, in this 21 square mile school district, the student population will be 4300 in three years (1978) and increase to 6300 by 1985. After 1985, the population should level off and remain stable.

A move has already been made by six area schools to pool together to form a vocational facility at a senior and early graduate level. However, there is still a need for a vocational program at each high school level. According to Supt. Forester, the trend has been to increase vocational skills to the level of a highly skilled technician.

The capacity of this site in terms of student population will be approximately 3000. The school has been limited to this acreage by the exorbitant price of land ($10-$15,000 per acre). It is the purpose of this program to determine the needs of this student population, faculty, administration, and community in terms of architecture.

To understand the needs of this "school", it is necessary to understand basic problems of school curricula, trends of education, specializations of architecture and school planning.
MAJOR EMERGING EDUCATIONAL CONCEPTS:

1. Large Group Instruction
2. Small Group Seminars
3. Independent Study
4. Team Teaching
5. Individualized Programs
6. Variable Time Blocks
7. Professional/Paraprofessional Tech. Teams
8. Electronic Learning Aids
9. Instructional Materials Centers
10. Linguistic Laboratories
11. Programmed Learning
12. Schools within a School
13. Informal Learning & Counseling Areas
14. Expanded & Changing Vocational - Technical Programs
15. Total Linked Systems of Education
16. Continuous Curriculum Changes
ITEMS TO INCLUDE IN CURRICULUM PLANNING:

1. Individual Study Carrels (School, Home, In Business)
2. Occupationally Related Training
3. Integration of Urban Life & Education
4. Exterior Spaces as Instructional Space
5. Cross Age Relationships
6. Social Stigma of Vocational School or Department

PROJECT PARAMETERS:

1. Present & Possible Future Needs of Client
2. Natural Forces of Site & Surroundings
3. Social Inputs of Neighborhood
4. Economic Feasibility
5. Construction Techniques
6. Architectural Inputs
7. Technological Factors
GOALS AND OBJECTIVES:

1. To develop a learning facility capable of responding to students, faculty, administrators, and the community.

2. To incorporate the "environment" into the facility and relate the entire social order to the learning situation.

3. To make the community aware of the educational facility and be welcome to interact with the facility.

4. To be conscious of the natural environment and conservation practices by utilizing sun angles, wind, heat gains and losses, and recycling energy.

5. To emphasize the importance and interaction of interior and exterior spaces.
Goal #3

- Business
- Culture
- Residents
- Educational Facility
- Stores
- Commercial
- Services
Goal #4

EDUCATIONAL FACILITY

Sun

Cooling

Wind

Recycle

Waste

Rain

Light

Heating
Relationship of Learning in Environment

Fields of Activity

What is the exact nature of learning

Environment

The Total Learning World

Learner Category

The Individual and His Learning Position
ENVIRONMENTAL ELEMENTS

COSMIC FORCES
Natural Factors
Independent of Man

HUMAN FORCES
All Factors Related
To Mankind

CULTURAL FORCES
Activities and Forms
Created by Man
LEARNING ELEMENTS

GOALS
Why a Specific Activity is Undertaken

METHODS
How an Activity is Carried Out

TASKS
What Activity is Taking Place
SITE CAPACITY

Determining Factors

One of the most important factors in determining whether to build an addition at the existing site or build a new school is the adequacy of the present site.

The following criteria has been selected to serve as a measure for evaluation of existing and proposed sites:

- The site should be large enough to accommodate the necessary buildings and provide ample space for outdoor recreation, parking, and future expansion of buildings and play area.

- The site should be so located that water, sewers, electricity, and other utilities can be provided at reasonable costs.

- The site should have an elevation and contour which will insure good drainage and a type of subsoil which provides a good base for building footings and foundations.

- The site should be selected with due regard to its proximity to public recreational, educational and cultural facilities such as parks, libraries, and museums.

- The site should be attractive, lend itself readily to landscaping, and provide a pleasing and beautiful natural environment, and

- The site should be purchased before the need becomes critical.

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<table>
<thead>
<tr>
<th>Category</th>
<th>1970-71</th>
<th>1979-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Agricultural/Vacant Land</td>
<td>6,763</td>
<td>--</td>
</tr>
<tr>
<td>Other Land Uses*</td>
<td>3,438</td>
<td>3,623</td>
</tr>
<tr>
<td>Total Acreage That Will be Used for Residential Use</td>
<td>3,057</td>
<td>9,635</td>
</tr>
<tr>
<td>Residential Land Use @ 2.5 Households/Acre</td>
<td>7,642</td>
<td>24,087</td>
</tr>
<tr>
<td>Population/Household</td>
<td>3.59</td>
<td>3.54</td>
</tr>
<tr>
<td>Population in Households</td>
<td>27,434</td>
<td>85,268</td>
</tr>
<tr>
<td>Public School Students/Household</td>
<td>.77</td>
<td>.76</td>
</tr>
<tr>
<td>Total Public School Students</td>
<td>5,884</td>
<td>18,306</td>
</tr>
<tr>
<td>Estimated High School Enrollment</td>
<td>1,883</td>
<td>6,300</td>
</tr>
</tbody>
</table>

*Commercial/Industrial/Public Buildings/Public Open Spaces/Transportation/Communications/Utilities/Mines/Streets.

Source: Basic estimates compiled for 1970 were derived from DuPage County and land use projections. (Arthur D. Little, Inc.)
### DISTRICT 108

#### ESTIMATED LAND USE 1966-67

<table>
<thead>
<tr>
<th>Land Use</th>
<th># of Acres</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>2538</td>
<td>19.1</td>
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<tr>
<td>Commercial</td>
<td>133</td>
<td>1.0</td>
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<tr>
<td>Industrial</td>
<td>420</td>
<td>3.2</td>
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<tr>
<td>Public Buildings</td>
<td>345</td>
<td>2.6</td>
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<tr>
<td>Public Open Spaces</td>
<td>1226</td>
<td>9.2</td>
</tr>
<tr>
<td>T/C/U/M*</td>
<td>265</td>
<td>2.0</td>
</tr>
<tr>
<td>Agricultural/Vacant</td>
<td>7416</td>
<td>55.9</td>
</tr>
<tr>
<td>Streets</td>
<td>915</td>
<td>6.9</td>
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<tr>
<td><strong>TOTALS</strong></td>
<td><strong>13,258</strong></td>
<td><strong>100.0</strong></td>
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</table>

*Transportation/Communications/Utilities/Mines


- DuPage County Estimates
- District 108 Estimates
- (Arthur D. Little, Inc)
**DISTRICT 108**

**SATURATION BY 1975**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Available Agricultural/Vacant Land</td>
<td>6,763</td>
<td>5,407</td>
<td>4,051</td>
<td>2,695</td>
<td>1,339</td>
<td>--</td>
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<tr>
<td>Other Land Uses*</td>
<td>3,438</td>
<td>3,476</td>
<td>3,515</td>
<td>3,556</td>
<td>3,598</td>
<td>3,623</td>
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<tr>
<td>Total Acreage That Will be Used for Residential Use</td>
<td>3,057</td>
<td>4,375</td>
<td>5,692</td>
<td>7,007</td>
<td>8,321</td>
<td>9,635</td>
</tr>
<tr>
<td>Residential Land Use @2.5 Households/Acre</td>
<td>7,642</td>
<td>10,937</td>
<td>14,230</td>
<td>17,517</td>
<td>20,802</td>
<td>24,087</td>
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<tr>
<td>Population/Household</td>
<td>3.59</td>
<td>3.58</td>
<td>3.57</td>
<td>3.56</td>
<td>3.55</td>
<td>3.54</td>
</tr>
<tr>
<td>Population in Household</td>
<td>27,434</td>
<td>39,154</td>
<td>50,801</td>
<td>62,360</td>
<td>73,847</td>
<td>85,268</td>
</tr>
<tr>
<td>Public School Students/Household</td>
<td>.77</td>
<td>.77</td>
<td>.76</td>
<td>.76</td>
<td>.76</td>
<td>.76</td>
</tr>
<tr>
<td>Total Public School Students</td>
<td>5,884</td>
<td>8,421</td>
<td>10,815</td>
<td>13,313</td>
<td>15,809</td>
<td>18,306</td>
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<tr>
<td>Estimated High School Enrollment</td>
<td>1,883</td>
<td>2,695</td>
<td>3,461</td>
<td>4,393</td>
<td>5,375</td>
<td>6,300</td>
</tr>
</tbody>
</table>

*Commercial/Industrial/Public Buildings/Public Open Spaces/Transportation/Communications/Utilities/Mines/Streets

**Source:** Arthur D. Little, Inc.
AVERAGE MONTHLY TEMPERATURE
HIGH AND LOW DEGREE RANGE
MEAN MONTHLY SUNSHINE

NUMBER OF HOURS OF SUNSHINE/MONTH
BIBLIOGRAPHY


"Places and Things for Experimental Schools: A Joint Report from Educational Facilities and Experimental Schools".
AUDITORIUM  20,470 SF

scene dock 400-500 SF
stage craft shop 1200 SF
rehearsal room 400 SF each 2= 800 SF

dressing rooms & toilets 700-1000 SF 850
stage & wings 1500-2400 SF equal division

property 400 SF

costume storage 400 SF

orchestra space 400 SF
seating area 70\$/per 2500 = 1,750 SF
projection space 140 SF

auditorium

lecture spaces 2000 SF

tickets 30 SF

dressing rooms & toilets 700-1000 SF 850

foyer 1000 SF
lobby 500-2000 SF 1,500

lounge 100 people 500-600 SF

toilets 400 SF
checkroom 600 SF

costume workshop 500 SF
PHYSICAL EDUCATION 66,990 SF

- **Lav**
  - 50 SF

- **Corrective phys. ed.**
  - 500 SF

- **Office**
  - 150 SF/person
  - 4-600

- **First Aid**
  - 300 SF

- **Swimming pool**
  - Pool 60 x 30
  - 5400 SF total

- **Boys - girls - visitors all separate**
  - Lockers & dressing room
    - 1000 SF/visitors facilities
    - 8000 SF
  - Towels
    - Linen
    - 300 SF
  - Equipment drying
    - 300 SF
  - Showers
    - 100-120 boys
    - 120-150 girls
  - Toilets
    - 50 boys
    - 50 girls

- **Game rooms**
  - 2
  - 750 SF each
  - 1500 SF

- **Apparatus**
  - 700 SF

- **Playing courts**
  - 3 lower courts
  - 4 upper decks
  - Folding seats
  - 45,200 SF

- **Lobby - checkroom - toilets**

- **Ticket booth concessions**
CAFETERIA 13,650 SF

- Loading platform: 200 SF
- Cold storage: 150-200 SF
- Dry storage: 200-300 SF
- Kitchen: 1.0 student / student, 2000 SF
- Dishwashing unit: 200-250 SF
- Serving counter: 850 SF
- Dinning rooms: 9-12 / person
  - 700 students simultaneously
  - 6300-8400 SF
- Teachers' dining
  - 9-12 teachers
  - 30 teachers simultaneously
  - 117-360 SF
- Dicetian's office: 100 SF
- Dressing & lav. for workers: 300 SF
- Storage for multi use: 300 SF
- Lav: 400 SF
Guidance 4,000 SF

- Waiting room 300 SF
- Placement & social case workers 300 SF
- Group testing 600-800 SF
- Counseling 300 SF each
- Psychologists & psychiatrist services 300 SF

Records & files
See administration
HOME MAKING 10,900 SF

kitchen of school cafeteria

clothing care
1400 SF

Ratio 4-2-1

foods laboratory
1400 SF

dressmaking
1400 SF

design
1400 SF

consumer education
1400 SF
1

home arts
1000-1800 SF
1400

child care unit
2500 SF

science dept.

school library

outdoor play area

SOCIAL SCIENCES 7,650 SF

classrooms 6
900 SF
30 SF/student

conference & reading rooms
3-150=450 SF

community survey room
1000-1200 SF

meeting room
700 SF
physic laboratory
1000 SF each 1
35-40 SF/student

chemistry laboratory
1000 SF each 1
35-40 SF/student

preparation & storage
450 SF

biology laboratory
1000 SF
35-40 SF/student

outdoor growing space

animal room
250 SF

green house
300 SF

prep & storage
450 SF

botany laboratory
1000 SF
35-40 SF/student

research & experiment
500 SF

preparation
500 SF

2 extra laboratories
1000 SF each = 2000 SF

planetarium
400 SF

observatory
750 SF

physical sciences
23,600 SF
MUSIC 9,050 SF

- instrument storage 200 SF
- band & orchestra rehearsal room 3000 SF 16 SF/student
- practice rooms 10 @ 50 = 500 SF 5 @ 100 = 500 SF
- choral room 1200 SF 16 SF/student
- uniform storage & dressing room 700 SF
- library storage 200 SF
- music theory classrooms 800 SF each 2 25 SF/student
- listening booths 50 SF each 3 = 150 SF
- music library 1000 SF

MATHMATICS 6,200 SF

- machine room & service center 400 SF
- mathematic classrooms 6 800 SF each 30 SF/student
- workshop (models) 1000 SF 35 SF/student
- exhibit area
ARTS & CRAFTS STUDIOS  8900 SF

stage craft shop
see auditorium

display area

photography studio
1000-1800 SF
35 SF/student  1

drawing studio
1400-2000 SF
35 SF/student  1

modeling & crafts studio
1400 SF
35 SF/student

dev. & printing
500 SF

storage
300 SF

press room
200 SF

storage
150 SF

kiln
150 SF

2 additional studios
4
1400 each = 2800 SF

store
200 SF

LANGUAGE ARTS  12,450 SF

english classrooms  8
900 SF each
35 SF/student

foreign language classrooms
800 SF each
35 SF/student

remedial reading
450 SF

journalism  2
800 SF
30 SF/student

publications
(see student activities)
<table>
<thead>
<tr>
<th>Storage</th>
<th>General Shop</th>
<th>Metal Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>350 SF</td>
<td>1500-1800 SF, 1700</td>
<td>1800-2500 SF, 2100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage &amp; Spray Room</th>
<th>Electric &amp; Radio</th>
<th>Graphic Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 SF</td>
<td>1500-1800 SF, 1700</td>
<td>1800-2200 SF, 2000</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Test Booths</th>
<th>Mechanical Drawing</th>
<th>Woodworking Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 SF each</td>
<td>1200 SF</td>
<td>2500-2800 SF, *</td>
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</table>

<table>
<thead>
<tr>
<th>Storage</th>
<th>House Construction</th>
<th>Automobile Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 SF</td>
<td>2500 SF</td>
<td>2500 SF, *</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage &amp; Overhaul</th>
<th>Aviation Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 SF</td>
<td>2500 SF, *</td>
</tr>
</tbody>
</table>

**Auxiliary Rooms or Areas for Each Shop**
- 5-300 SF = 1500 SF
- Classroom = 300 SF each
- Office = 150 SF each

* * needs outdoor paved area.
**Circulation space**

35,700 SF

- exhibition
- lounge areas (students)

**Lockers**

3,750 SF

**Toilets**

+ special places (gym and cafe, etc.)

<table>
<thead>
<tr>
<th>T</th>
<th>U</th>
<th>L</th>
<th>Drinking Fountains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>50</td>
<td>38</td>
<td>60</td>
</tr>
<tr>
<td>Male</td>
<td>38</td>
<td>60</td>
<td>38</td>
</tr>
</tbody>
</table>

- 10 Department Supply Rooms 400 SF each 4000 SF
- 150 Department Offices 75/desk 150 15000 SF
- 10 Department Conference Rooms 300 each 3000 SF
SITE REQUIREMENTS

Optimum 70 acres or equivalent to that area for parking buildings and exterior activities.

Parking for 500 cars on site + overflow parking on street and in church parking lot.

Delivery access drives to kitchen, service, and industrial arts department.

Exterior playing fields:

Tennis, Football (2 fields), Baseball (2 Fields), Track & Field Area.

Seating for Above Area.

School bus arrival area total 40 buses.

Double shifting to serve both schools.

Landscape features similar to parks for recreation.

Retain natural features for study purposes.
SCHEMATICS  (ALTERNATIVES TO DIVISIONS)

A. ONE LARGE FACILITY (4000 Students)
   1. Addition to Existing Structure
   2. Complete New Building

B. TWO COMPLETE, SEPARATE FACILITIES
   1. 2 Full High Schools (Grades 9-12)
   2. 2 Grades Per Facility (9-10, 11-12)

C. TWO SEPARATE FACILITIES THAT SHARE SOME COMMON AREAS
ITEMS TO INCLUDE IN SCHEMATIC DIAGRAMS:

1. Technological Developments
   Basic Spine/Clusters
   Mobile Units
   Detached Units
   Changing Parts
   Kinetic Parts Inflate, Move, Regroup, Etc.

2. Subject Matter Sub-Groups
   Business & Commerce
   Arts & Science
   Technology & Trade
   Community
   Industry
   Education
   Large Group  150 Students
   Small Group   15 Students
   Individual    Study Carrels