

CLEVELAND EDUCATION SURVEY

SCHOOL BUILDINGS  
AND EQUIPMENT

BY  
LEONARD P. AYRES  
AND  
MAY AYRES



THE SURVEY COMMITTEE OF THE  
CLEVELAND FOUNDATION  
CLEVELAND • OHIO

# **SCHOOL BUILDINGS AND EQUIPMENT**

## **THE SURVEY COMMITTEE OF THE CLEVELAND FOUNDATION**

**Charles E. Adams, Chairman  
Thomas G. Fitzsimons  
Myrta L. Jones  
Bascom Little  
Victor W. Sincere**

---

**Arthur D. Baldwin, Secretary  
James R. Garfield, Counsel  
Allen T. Burns, Director**

---

## **THE EDUCATION SURVEY**

**Leonard P. Ayres, Director**

**CLEVELAND EDUCATION SURVEY**

**SCHOOL BUILDINGS  
AND EQUIPMENT**

BY  
**LEONARD P. AYRES**  
AND  
**MAY AYRES**



**THE SURVEY COMMITTEE OF THE  
CLEVELAND FOUNDATION  
CLEVELAND · OHIO**

**COPYRIGHT, 1916, BY**  
**THE SURVEY COMMITTEE OF THE**  
**CLEVELAND FOUNDATION**

---

Printed January, 1916, 1300 copies  
Reprinted April, 1916, 1000 copies  
Reprinted February, 1917, 1000 copies

---

**WM. F. FELL CO. PRINTERS**  
**PHILADELPHIA**



## FOREWORD

This book, entitled "School Buildings and Equipment," is one of the 25 volumes comprising the report of the Cleveland Education Survey conducted by the Survey Committee of the Cleveland Foundation in 1915 and 1916. Twenty-three of these volumes are separate monograph reports. In addition there is a summary volume entitled "The Cleveland School Survey," telling of the conduct of the entire study and giving the findings and recommendations of the 15 monographs relating to the regular work of the public school. There is also a volume entitled "Wage Earning and Education" which gives a summary of the eight monographs relating to industrial education. Copies of all these publications may be obtained from the Cleveland Foundation. They may also be obtained from the Division of Education of the Russell Sage Foundation, New York City. A complete list will be found in the back of this volume, together with prices.



## TABLE OF CONTENTS

	PAGE
Foreword	5
List of Tables and Lists	9
List of Illustrations	10
<b>CHAPTER</b>	
I. Advancing Standards in Schoolhouse Construction	11
Changes due to newer educational methods	12
Changes making for safety	15
Changes making for health	16
Changes making for happiness	18
II. Developments in Seven Decades	21
The schools of the 50's	23
The schools of the 60's	25
The schools of the 70's	27
The schools of the 80's	29
The schools of the 90's	31
Schools from 1900 to 1910	33
Schools of the present decade	35
III. Some Conditions in the School Plant	37
Location	37
Ornamentation of grounds	39
Size of classrooms	40
Lighting	42
Blackboards	44
Color scheme	44



CHAPTER	PAGE
Wardrobes	45
Furniture	47
Auditoriums	49
Gymnasiums, swimming pools, showers	50
Special rooms	51
Libraries	51
Dispensaries	52
Provision for community center activities	52
Stairs and exits	52
IV. Safety and Sanitation	57
Fire protection	57
Toilets	60
Heating and ventilation	66
V. Costs	71
Cost per pupil	71
Cost per classroom	72
Cost per cubic foot	72
Cost of school buildings in Cleveland	73
Comparative costs in the five cities	86
The rank of the cities in schoolhouse cost	88
School costs and school values	90
Cost and value in Cleveland buildings	92
VI. Building Problem of the Board	93
Modernization of old buildings	95
School census returns and the building policy	99
Rooms should be built for use	100
The test of educational activities	101
VII. Summary	103

## LIST OF TABLES AND LISTS

TABLE	PAGE
1. Cost data for nine fireproof elementary school buildings in Boston	76
2. Cost data for 11 fireproof elementary school buildings in Cleveland	78
3. Cost data for 10 fireproof elementary school buildings in Detroit	80
4. Cost data for nine fireproof elementary school buildings in Newark	82
5. Cost data for seven fireproof elementary school buildings in St. Louis	84
6. Cost data for 46 fireproof elementary school buildings in five cities	86
7. Rank of each of five groups of elementary school buildings in five cities in six items of comparative cost data	89
<div style="font-weight: normal; font-size: small;">LIST</div>	
A. Special rooms in nine fireproof elementary school buildings in Boston	77
B. Special rooms in 11 elementary school buildings in Cleveland	79
C. Special rooms in 10 elementary school buildings in Detroit	81
D. Special rooms in nine elementary school buildings in Newark	83
E. Special rooms in seven elementary school buildings in St. Louis	85

## LIST OF ILLUSTRATIONS

	PAGE
Earliest and latest Cleveland school buildings.	
1816-1916	<i>Frontispiece</i>
Rosedale School garden	17
Alabama School	22
Sterling School	24
Dike School	26
Giddings School	28
Transverse section of Giddings School	29
Lawn School	30
Memphis School	32
Empire School	34
Treatment of grounds at Doan School	41
Schoolroom showing bad lighting	43
Plan of classroom and cloak room	47
Expanded hall	49
Some standards used in judging buildings	54
Panic bolt	56
Fire drill at East Madison School	61
Map of Cleveland showing railroads and runs	96

# SCHOOL BUILDINGS AND EQUIPMENT

## CHAPTER I

### ADVANCING STANDARDS IN SCHOOL- HOUSE CONSTRUCTION

Cleveland has been building schools for 100 years. In 1816 the inhabitants of the village erected a wooden school building in a grove of oak trees on St. Clair Street. This building was about 30 feet long by 24 feet wide and its appearance is probably represented with fair accuracy by the illustration in the frontispiece of this volume. The cost of this building was \$198.70 and this sum was contributed by 25 citizens in amounts ranging from \$2.50 to \$20 apiece.

During the decades which have elapsed since this early beginning, Cleveland has increasingly devoted its money and its energies to the task of supplying adequate buildings for its school children. Two conditions have been steadily present during this century of effort and ex-

penditure. No matter how rapidly new buildings were erected, and how generously funds were supplied, the demands for more buildings and more money have always rapidly increased.

The school of 100 years ago cost \$200 and had one classroom; those erected now cost 1000 times as much although they have only 20 classrooms. In the 10 years from 1840 through 1850, Cleveland spent \$12,000 for school buildings. During the decade from 1905 through 1915, the city has spent over \$9,000,000 for the same purpose. The population now is 40 times as large as it was then, but the expenditures for school buildings have been nearly 800 times as great.

It is the purpose of this volume to report on the causes of this immensely rapid increase in the cost of school accommodations and to consider what the community is receiving in return for its great investments.

## CHANGES DUE TO NEWER EDUCATIONAL METHODS

The enormous increases in expenditures for school buildings are due in part to the steady growth in population; but much more to changing ideals on the part of the people as to what they want for their children. The school build-

ing policy of the American people is being shaped by five watchwords of progress: Education, Economy, Safety, Health, and Happiness.

George Watkins, one of the pioneers of Cleveland, has described for us the Giddings Avenue School, built in 1822. "The building was about 15 by 20 feet. It was called a block house because the logs were hewn out between the sides. It was lighted by five windows. The old stone fireplace was six feet wide across. On three sides of the room was a platform seven or eight feet wide and about one foot high. An upright board was placed one foot away from the edge of the platform. Here the little children sat, the board serving for the back of their seats. On the platform and against the wall at the proper height was the writing desk of the older pupils. The desk was continuous around three sides of the room. The seats, like the desks, were of unplanned slabs each running parallel with the desk. When it was writing time, the boys and girls had to swing their feet over and proceed to business. We wrote with a goose quill, and every morning the master set our copies and mended our pens. We had school but three months in the winter."

In most of the early schools a long bench was placed in the center of the floor, somewhat near the front, and classes about to recite were called

out to the bench. There were no blackboards and few books. Windows were on each side of the building, and,—as the old records show,—“were built of sufficient height so that the children could not look out of them.”

Most of the earlier developments in planning were those which had to do with the actual processes of teaching and learning. Thus, we find the recitation bench abolished, and individual chairs gradually taking the place of plank and platform. Buildings were provided with different rooms for different groups of children. Window space was enlarged in order to secure better lighting. Blackboards were early introduced. School libraries were started in 1850, and special provision was soon made for library rooms.

The movement has continued until today we find buildings filled with special rooms for special purposes; classroom furniture built, placed, and adjusted with a view towards greatest usefulness; every vestige of the platform (even that under the teacher's desk) removed; bulletin boards in classrooms; moving picture apparatus in auditoriums; and constantly increasing thought for aesthetic training through beautiful architecture, pictures, statuary, and mural decorations.

Compared with other cities, Cleveland has

had very little to unlearn in the matter of building economy. Only rarely has the city had to retrace its steps; and for the most part progress has been steadily forward. Brick and wood combinations have given place to fireproof construction. Plans have been elaborated as needs have grown. Architects and engineers have been employed as members of the permanent staff, and uniform standards of building construction are gradually being adopted to secure beauty, durability, and usefulness at the lowest ultimate cost.

#### CHANGES MAKING FOR SAFETY

Ten years ago there was comparatively little concern about the safety of school buildings. Today the attitude of school officials has changed from indifference to active interest. In 1908 the Lakeview School in the town of Collinwood burned down and 173 children and two teachers lost their lives. It was a brick and wood structure of the "expanded central hall" type, with wooden stairs, doors swinging outwards, and fire escapes. It was a better, safer building than many still in use in most of the large cities of the United States. It was merely chance that made Collinwood the scene of the tragedy. A gale of wind, wood floors and stairs, strong draughts, an awkward exit, and the rush



of panic-stricken children combined to produce a horror for which no single person could be held responsible.

Today, there are only a few cities in the country where the Collinwood disaster could not be repeated. Cleveland stands high among these few. Every old building in the system is safeguarded; every new building fireproof. Fire drills are regular and frequent and involve use of fire escapes and changes in stairs and exits. Cleveland parents may entrust their children to the public schools without anxiety as to their safety.

#### CHANGES MAKING FOR HEALTH

One of the influences most potent in changing types of school architecture during recent years has been an increasing realization that the health of the children is a public trust; and as such provision for its care is properly a function of the public school.

As a result of this changed conception we find specialists whose sole duty it is to study matters of sanitation,—toilets, washstands, shower baths, drinking fountains; and others who are conducting extensive experiments with different forms of ventilation, air washing, heating, and automatic controls. In all the newer buildings of this city classrooms are lighted from