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# THE WISCONSIN ARCHITECT

THE OFFICIAL PUBLICATION OF
THE STATE ASSOCIATION OF WISCONSIN ARCHITECTS
WISCONSIN CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS

THE SEAL OF THE STATE ASSOCIATION OF WISCONSIN ARCHITECTS · MCMXXXII
UNITED ACTION

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RECEIVED
JUL 16 1938
THE A. I. A.
THE OCTAGON

*Henry Foeller, Architect*

*Waukesha Plant Expands*

*The Control of Sound in Buildings*

Vol. 6 July, 1938 No. 7

THE SEVENTH ANNUAL

# STATE ARCHITECTS' STAG OUTING

WILL BE HELD ON

# SATURDAY AFTERNOON, JULY 16

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1:00 to 2:00—Arrival and Parking

2:00—Grand Opening of the Kegs

2:30—Games

3:00—Bridge
Rowing and Canoeing

4:30—Swimming
Ordinary Swimming
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5:30—Supper
Committee in Charge

6:00—Informal Talks, Officers
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Evening—Launch Rides
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# THE STATE ASSOCIATION OF WISCONSIN ARCHITECTS

## Henry Foeller, Architect, Dies at Green Bay

Henry A. Foeller, one of Wisconsin's foremost architects, senior member of the firm of Foeller, Schober & Berners of Green Bay, died June 18 in St. Vincent Hospital of a heart ailment. Although he had suffered to some extent from the disease the last few years, Mr. Foeller had not been seriously ill until June 9 when he was taken to the hospital. He was 67 years of age.

A native of Alsace where he was born in Wittesheim on February 27, 1871, Mr. Foeller came alone to this country at the age of 14, going to Oshkosh, Wis., where he attended high school and the Oshkosh Teachers' college. While there he was tutored and served his architectural apprenticeship under the late William Wauters, designer of some of the buildings for the Columbian Exposition of Chicago in 1893. In 1895 he moved to Green Bay and became a partner in the architectural firm of Clancy & Foeller. He was associated with a number of other architects during the next 30 years and at the time of his death headed the firm of Foeller, Schober & Berners, which was formed in 1930 with Noel Safford and Clarence Jahn as associates.

During his long career as an architect, Mr. Foeller attained prominence throughout Wisconsin in designing ecclesiastical, educational and institutional buildings. He became a member of the A. I. A., December, 1901. Last year he was enrolled as a Fellow in the American Institute of Architects at the organization's convention in Boston, the highest honor that the profession can confer upon one of its members. He was also a member of the Wisconsin chapter, A. I. A., and was for many years a member of the State Association of Wisconsin Architects. At the time of his death he was chairman of the third district, comprising the Green Bay area. Since 1917 he had been a member of the state registration board of architects and engineers and was a member of the committee which drafted the first state building code.

Active in the civic life of his community, Mr. Foeller was instrumental in the organization of the municipal planning and zoning commission of Green Bay. He was president of the park commission from 1933 to 1935, during which time the city's park and playground systems were greatly extended and improved. He was a leader of the City Beautiful committee which did much to beautify the City of Green Bay.

The most important of the public structures designed by Mr. Foeller was the hospital for the criminal insane and the southwest wing of the state prison at Waupun. He also designed St. John's church, Kellogg public library, East High school, Columbus Community club, St. Vincent and St. Mary's hospitals and many other buildings in Green Bay and other buildings in various parts of the state.

Surviving Mr. Foeller are his wife, two sons, a daughter, a brother, J. N. Foeller, a Green Bay contractor, and six sisters.

## Waukesha Plant Expands

The Federal Steel Sash Co., Waukesha, Wis., has acquired the exclusive American manufacturing rights of Crittall Manufacturing Company, Limited, of England. Federal is taking over the facilities of the former American Company and moving the stock and machinery to its plant in Waukesha. The Company name is being changed to Crittall-Federal, Inc., to conform with the broader scope of this business.

This company will now add to its original line of steel industrial windows and doors a complete line of steel casements, including Light and Intermediate types in standard industry sizes, together with Custom Built casements in the Intermediate and Heavy classifications.

In keeping with this expansion, Mr. Clark M. Robertson, President, has announced the appointment of Ralph H. Sartor, commissioner of the Metal Window Institute since 1929, as Sales Manager.

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The Building Congress of Wisconsin

•

Wisconsin Chapter, The American Institute of Architects

LEIGH HUNT, Editor
152 W. Wisconsin Avenue, Milwaukee

JOHN S. HOLBROOK, Publisher
724 E. Mason Street, Milwaukee

Published Monthly Subscription, $1.00 per year

Address all communications for publication to Editor at 152 W. Wisconsin Ave., Milwaukee.

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## The Control of Sound in Buildings

It is the business of engineering science to leave nothing to guesswork or chance. The planning of a modern building demands precise, definite knowledge on scores of details that the old-time builder never admitted to his program. Ventilation, lighting, heating, transportation and sanitation must all be taken care of in the architect's drawings, and by methods based on accurate scientific data.

The control of sound in a building is as important to the comfort and the health of its occupants as are any of the other features for which the architect must provide. The nervous tension and irritation resulting from prolonged effort to hear under poor hearing conditions, the wear and tear on nerves of the interminable racket of a modern office are just as destructive to human efficiency as is improper lighting or poor ventilation. Nervous fatigue results just as surely from a constant assault upon the auditory sense as upon any other of our perceptive faculties. Office managers, in large numbers of cases, have found that errors are surprisingly reduced, and nervous fatigue among typists and machine accountants are almost eliminated by reducing the noise in large office units. An auditorium in which people cannot hear and understand is a sheer contradiction in terms.

Only in very recent years, however, have architects considered that acoustic conditions are a part of their problem. This state of affairs has been due not to failure to recognize that good acoustic conditions are essential so much as to lack of knowledge of what to do to secure such conditions. Only within the last twenty-five years has the subject been scientifically investigated. Before that time, the literature on the subject contained only unsupported opinion based on limited observation and inadequate theory. Nobody *knew* anything more about the control of sound in buildings than did the old Greeks and Romans; Architectural Acoustics as an accredited branch of engineering science had not *arrived*. Rules of thumb for what were considered ideal proportions, acoustically "good shapes" deduced from inapplicable optical analogies, general conclusions based on isolated cases are the sort of things which older books on the subject contain. The stringing of absurd lengths of wire, the weaving of invisible silken webs, the use of so-called resonators were proposed as cures for acoustic defects.

As Americans, we may well be proud that this hodgepodge of guesswork has been replaced by a real science as a result of the work of American physicists. The pioneer work of Wallace Clement Sabine in Architectural acoustics is an outstanding contribution to science.

Even a brief summary of his work would surpass the limits of this pamphlet. Perhaps the most important general conclusion to be drawn from this work is the fact that, while *shape* is a factor in the acoustics of a room, it is not the most important factor. Doubtless, to the average person, good acoustics suggests the elliptical dome of the Salt Lake Tabernacle or the paraboloid reflector of an out-door band-stand. The result of this recent work indicates that while good acoustics is possible with such shapes, it is equally possible with more common architectural forms. A second fact of great importance is that the character of interior surfaces is of prime importance in determining acoustic condi-

tions, and that these conditions can be controlled by providing surfaces having the proper physical properties. In other words, the *absorption* of excess sound is the most effective means of controlling sound within a room. By absorption is meant the physical process by which the energy of alternate condensations and rarefactions which constitute sound are converted into other forms of energy. Thus when sound energy is incident upon a surface, a part of that energy is reflected as sound, the balance is converted into heat by doing work against non-elastic forces, either frictional or viscous in the reflecting surfaces. The fraction of the energy thus converted has been called the *Coefficient of Absorption* of the particular surface in question. It is a matter of common experience that audience rooms may present undesirable acoustic conditions with a small audience, and yet be entirely satisfactory when filled. This is explained by the fact that the clothing of the audience absorbs a large fraction of the sound that strikes it and reflects very little. An audience thus constitutes an almost perfect absorber. On the other hand, ordinary masonry walls are almost perfect reflectors, absorbing only from 1.0 to 3.5 per cent of the energy that falls upon them. This means that such surfaces are better reflectors of sound than the best mirrors are of light. Consequently, on account of the relatively small velocity of sound, as compared with light, if sound energy is produced within a closed space, it persists for an appreciable length of time after the source has stopped. This persistence is called *Reverberation*, and in rooms in which it is excessive, causes the overlapping of the separate elements of speech or music with resultant confusion and lack of intelligibility. For the same reason, the single click of a typewriter, in an office room of modern construction, say thirty feet square, may persist as audible sound for four or five seconds. Hence if a machine is operated at an ordinary rate in such a room, the residual sound from twenty to twenty-five blows will be present at one time, so that the actual amount of sound within the room will be four or five times that produced by a single blow. Street noises coming in at an open window may thus be actually louder in the room than in the open air outside. Modern school rooms with hard walls and ceilings and composition floors increase the noise of restless children and decrease the clearness of the teacher's words. Hospital rooms with their meager furnishings become sound traps, and corridors with their sound-mirror walls convey undiminished the cries of patients and the clatter of dishes.

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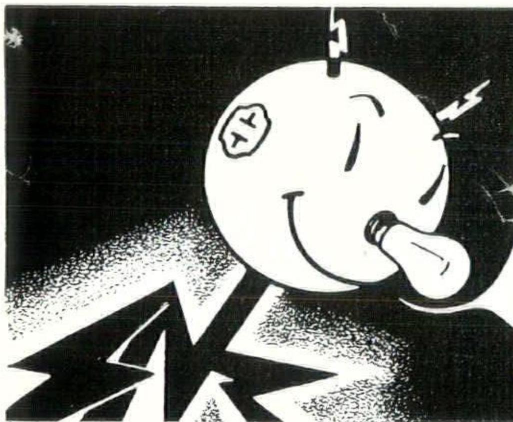

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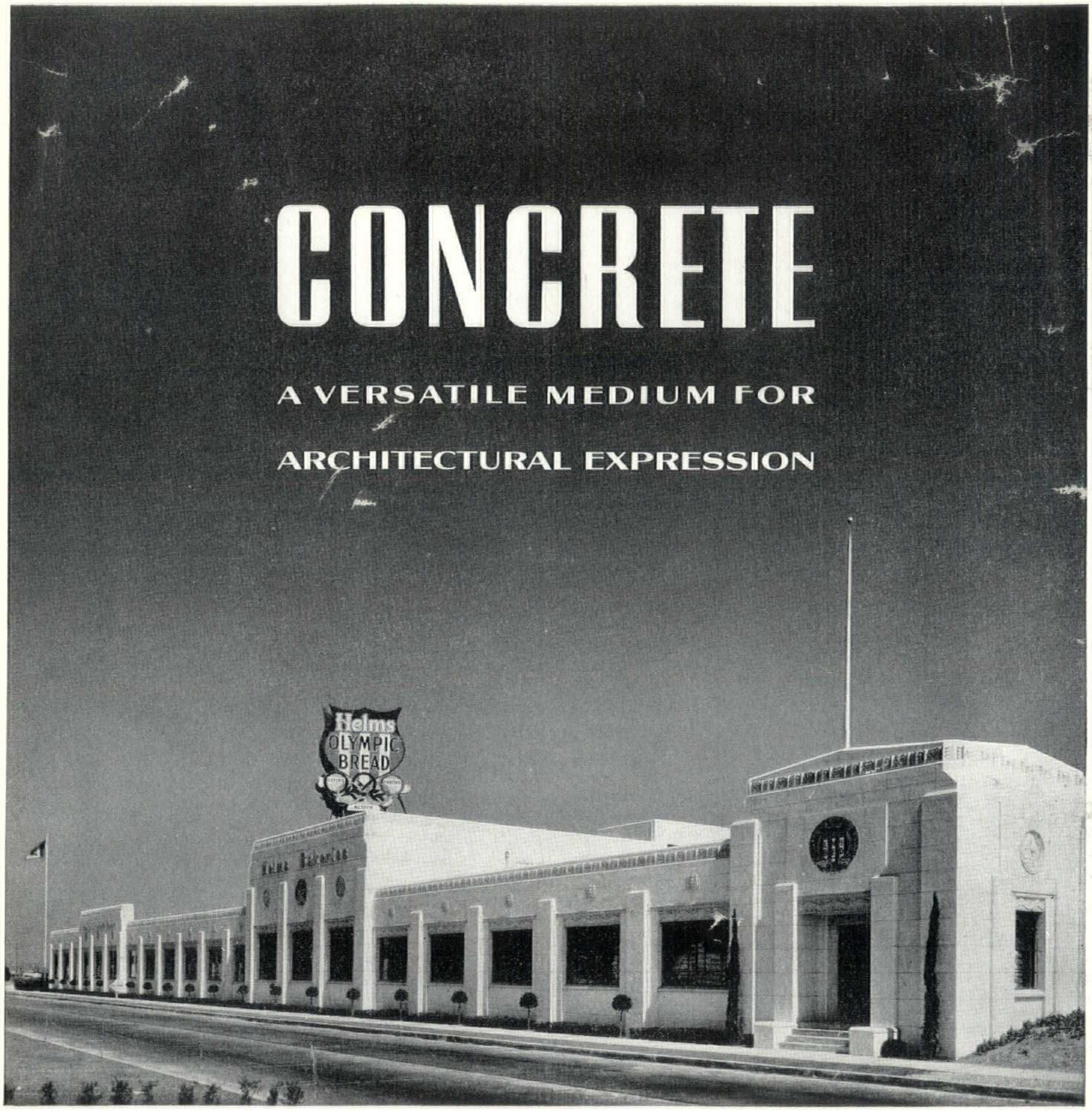


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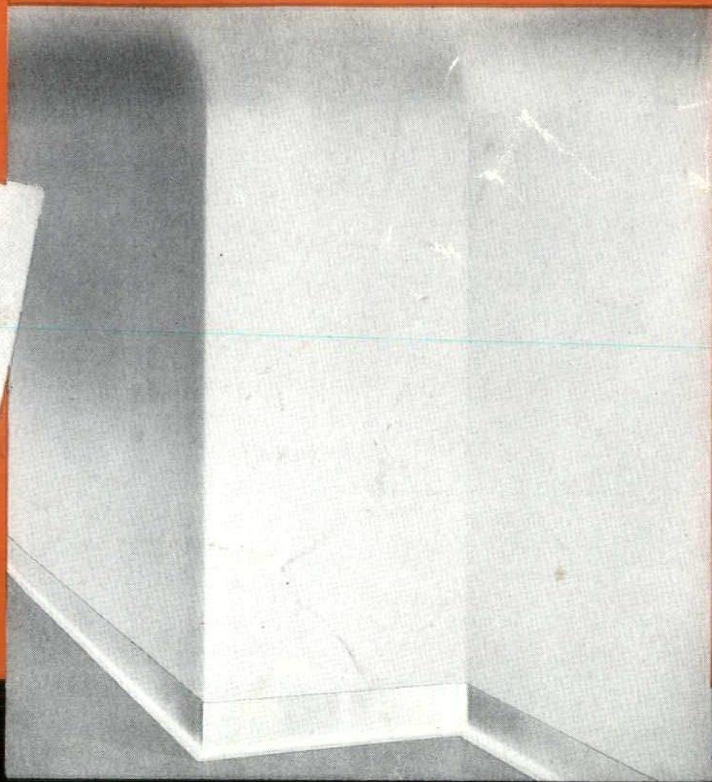

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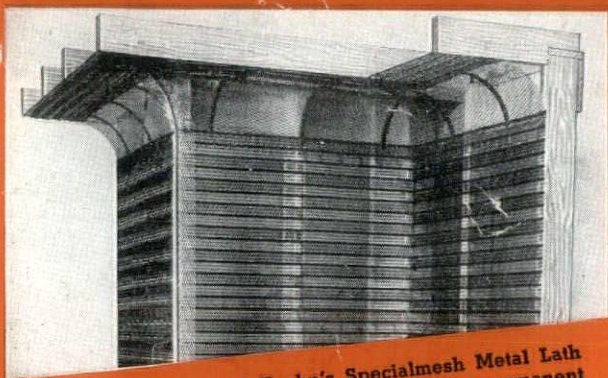

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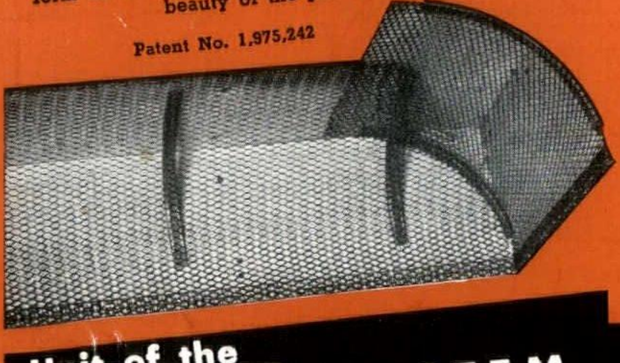

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