

AN OFFICIAL PUBLICATION OF THE INTERNATIONAL DISTRICT HEATING ASSOCIATION

District Heating



A NEW PLANT ON TOP OF THE OLD

The Illuminating Company's Canal Road Plant today . . . one of the two steam plants which provide a nominal capacity of 1,500,000 lb per hr for today's Cleveland . . . Page 13.

PUBLISHED QUARTERLY SINCE 1915



WINTER 1969 — VOL. LIV, No. 3

STEAM SERVICE IN DOWNTOWN CLEVELAND

The Illuminating Company: from grandpa's day to the bigger, better way

FROM THE QUIANT CLIP-CLOP of the horse-drawn buggy to the cosmopolitan clamor that is Cleveland now, The Illuminating Company has developed a district-steam service that now heats some 500 buildings in the downtown area.

Though Cleveland ranks as the eighth largest city in the U. S., The Illuminating Company's steam complex is the seventh largest in the nation. This system serves an area of 1.14 square miles and is still growing to meet the central city's expanding needs.

Objective: dependable steam heat for Cleveland's heartland, tomorrow as well as today. But the story begins in a yesterday all but vanished in the receding mists of 1894.

It begins in the Canal Road Plant, which stands between Cleveland's Terminal Tower and the Cuyahoga River, just south of Public Square. This facility, built to generate electricity, was The Illuminating Company's sole generating plant until 1911.

A New Plant On Top Of The Old

The Canal Road Plant produced electric power while Cleveland moved forward out of the gay nineties and into the twentieth century.

Steam, as a by-product of this operation, was first harnessed here in vertical turbines in 1906, and piped to a customer's neighboring warehouse for comfort heat.

With 25 boilers and a steam capacity of 675,000 lb per hr, this plant continued in service through the late 1940's and early 1950's, when an all-new plant was literally superimposed on the old. This was necessitated by the long, narrow shape of the site: 150 ft wide by 500 ft long.

Engineering studies were completed in 1945 and the decision was made to replace the Canal Road Plant completely: boilers, structure and auxiliary plant equipment. Average age of the 25 boilers at this time was about 40 years.

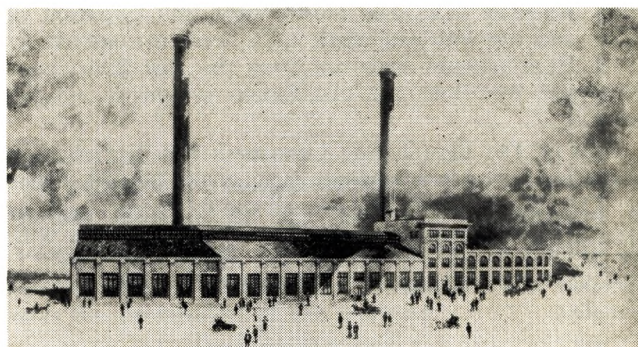


FIGURE 1

The Cleveland Electric Illuminating Company's original Canal Road Plant, built in 1894 to generate electricity. Rebuilt in the late forties, it now serves exclusively as the nerve center for a steam system serving some 500 buildings in downtown Cleveland.

Building the present plant without disrupting the service being rendered by the venerable structure of 1894 entailed planning of the highest order, extremely close scheduling and careful control of tolerances.

The big picture involved six strides along the tightrope of time and space — strides which were mapped out long before the term "critical path scheduling" came into common usage. With the beguiling simplicity of retrospect, the 1945 plan reads:

1. Clear the old engine room. Lay a new foundation mat.
2. Erect three new boilers with enclosing structure. Connect them to existing steam distribution lines.
3. Dismantle ten of the old boilers in the north end of the old boiler room. Complete the foundation mat.
4. Erect the last two new boilers and complete the building structure.
5. Dismantle the remaining 15 boilers and the building structure at the south end of the plant.
6. Build a coal storage pit.

Construction began in February 1946. The fifth and final new boiler went on the line in April 1950, and the coal storage and yard area were finished in December 1951.

The five new boilers have a combined steam generating capacity of 750,000 lb per hr — an increase of 75,000 lb per hr over the old — and require substantially less space. The present plant provides space for a sixth boiler, and the building can be extended to accommodate a total of 12 boilers on this site.

(Continued on Next Page)

Total cost of rebuilding the Canal Road steam plant was over \$5 million. Plant structure accounted for 45 per cent of this total; plant equipment, 50 per cent; and removal of the old plant, 5 per cent. Performance has been highly satisfactory. Upon inaugurating the new plant, operation and maintenance efficiency improved substantially.

Our Second Plant . . . Doubles The Capacity

Back in the early twenties, before the rebuilding of the Canal plant when Euclid Avenue beyond East 9th Street began to develop, it became evident that a new source of steam was necessary. In 1924 it was decided to build a new steam heating plant on East 20th Street, about three-quarters of a mile east of Public Square, at the northeastern corner of the system. The first three boilers went into operation the same year. The fourth went into operation in 1926, and the fifth and sixth units were operational by 1928. High-pressure lines run from the East 20th Street Plant and feed into the distribution system at reduced pressure.

Each of The Illuminating Company's two district-steam plants has a nominal send-out capacity of 750,000 lb per hr: The Canal Road Plant (over-all control center) with its five stoker-fired boilers and the East 20th Street Plant with six pulverized-coal-fired boilers. The distribution system is operated as a combination high-pressure and low-pressure complex.

Over the years this district-steam facility has undergone various refinements in instrumentation, computerization and hardware. Expansion and improvement continue to pace the growing commercial activity of downtown Cleveland.

Several high-pressure extensions will be completed in the next few years, assuring continued over-all system reliability. This multimillion-dollar modernization and expansion activity is being developed to make The Illuminating Company's steam service available to all downtown building owners and occupants.



FIGURE 2

Erievue Urban Renewal Project in downtown Cleveland will need, upon completion, steam service totaling some 600,000 lb per hr.

Increased Steam Business—Actual And Projected

The investment has been undertaken not only to assure highest standard steam service for present customers, but also in anticipation of Cleveland's giant downtown rejuvenation program. Major facets of this program include the Erievue Urban Renewal Project and the newly launched Cleveland State University.

Erievue encompasses an area of some 163 acres on the shores of Lake Erie between East 9th and East 17th Streets.

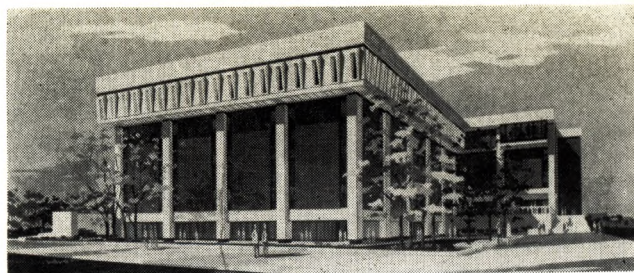


FIGURE 3

The Basic Science Building on the campus of the new Cleveland State University typifies the growing potential for The Illuminating Company's district-steam service.

This development will comprise both commercial and residential high rise buildings. Estimated steam load in the Erievue development is expected to reach some 600,000 lb per hr. Other large potential steam users are also being developed.

The huge steam potential is an ambitious objective. But it is one which, in the view of The Illuminating Company, justifies such major improvements as the new million-dollar zeolite water treatment system recently completed in both steam plants. (Zeolites are alumino-silicates containing very loosely held water which is removed by heating and regained by exposure to a moist atmosphere.) This equipment assures the production of steam of a much higher degree of purity than can be generated by the average on-site boiler plant.

Telemetering facilities in the Canal Road Plant have been expanded and improved. The additional pressure data obtained by this monitoring equipment provides around-the-clock information on the entire system. Additional remote and automatic operating equipment is constantly being installed to keep The Illuminating Company's steam system out ahead of the dramatically increasing needs for steam heating in downtown Cleveland.

And, as even the oldest of the old timers will agree . . . those needs have come a long, long way since grandpa's day. ●

The Right Way to Delegate Authority

Ted Pollock, *New Jersey Business*, Aug., p. 31

Work piling up too fast? Swamped by details? Bringing home work nights and weekends? Then perhaps you're not delegating properly. Here are some tips that might help:

1) Draw up a *complete* list of the duties you perform daily. You'll be amazed at the length of this list. Now, separate those details which *only* you can do from those that someone else might do. Rewrite this list monthly. If you're delegating properly, it will change and grow.

2) Delegate to the right people. Screen your people carefully. Before you relinquish work to a subordinate, ask yourself: Does he *want* more responsibility? Does he have the self-discipline to do the job? Is he well-organized? Can he win the cooperation of others?

3) Delegate at the right time. The right time, of course, is whenever you can. But there are occasions when delegation is especially important. For example: *When your work load is too heavy.* When you don't have time to do a thorough job, doesn't it make sense to delegate the job to a subordinate who *does* have time? *When you expect to be absent.* If you're going on a business trip or vacation, isn't it wise to brief your associates and subordinates on what must be done while you are gone, and to explain priorities? *When you are in line for a promotion.* You are not likely to move up the management ladder unless someone is ready to step into your shoes. Training a replacement is essential, and proper training requires that you delegate, delegate, delegate. ●