

ENGINEERING DEPARTMENT.

A. W. CAMPBELL,

O.L.S., C.E., A.M.C.S., C.E.

EDITOR

Sewers.

The methods employed in assessing for sewers in different cities and towns vary greatly, and the problem of making a sewer assessment that shall be exactly just to each one assessed is one that perhaps may never be solved.

But if we cannot fully solve the problem, we should still endeavor to adopt a plan of assessment that shall be as fair and equitable as possible.

Among the many plans the following are perhaps the most prominent for assessing the costs of sewers:

1. In proportion to the benefit received by the adjoining property.
2. In proportion to the value of the adjoining lot.
3. According to the area of the adjoining lot.
4. According to the frontage of the adjoining lot.

To these might be added the plan of spreading all or a part of the cost on the general tax-roll.

In considering the various methods of assessment it must be remembered that a properly planned and constructed sewer is a permanent improvement and that a piece of property may receive a benefit from the sewers several years after construction even though it may be of no particular advantage to it at the time of building.

The objection to an assessment according to the benefits received lies in the difficulty of determining just how much each adjoining property is benefitted, and in the fact that the benefits may vary from year to year.

The judgment of different persons will differ so greatly as to the benefit each property receives that a great deal of dissatisfaction and ill-feeling will be engendered no matter what amount is decided upon. The difficulty of assessing according to the value of the lot lies in the fact that lots in the suburbs or residence portion of the town are worth only a fraction as much as those in the business centre, and perhaps receive just as much benefit. Again the value of a lot changes from year to year. Also the sewer is apt to cost just as much on a street in the outskirts of a town as in the very centre. When only one method of assessment is employed the plan of assessing in proportion to the area of the lot drained is a very equitable way of imposing a tax for sewer purposes.

The entire cost of the sewers for the district to be drained including cost of outlet, main sewers, lateral sewers, and any other items that may occur should be taken and the cost assessed against any lot should be in proportion to the area of that lot to the total area of district sewered.

Assessments made in proportion to the frontage is the simplest and possibly the

most equitable system; the same plan as above is followed with the exception that the frontage of the lot is taken instead of the area. Here an injustice arises on account of a difference in the depth of the lots, the irregular shape of such lots and because some lots are on a corner. In the case of a corner lot, the unfairness can be adjusted by assessing against only one-half of the frontage, limiting the size of a corner lot to within certain dimensions. Probably the most satisfactory results can be obtained by judiciously combining two or more methods as local conditions may require, thus correcting any injustice that might arise from using and one method singly. Especially is this true of a combination of the plans of assessing according to the area and frontage of the adjoining lots.

The above methods of assessing apply particularly where the sewers for the whole district are built at the same time.

Where the sewers are built piecemeal the plans and estimates should be made for the whole town or district to be drained. A sewer fund could then be created by either a general or a special tax for enough to build the outlet and the main sewers. As the lateral sewers are built, the remaining part of the estimated cost could be assessed against the adjoining property. The remaining part of the cost due from the property adjoining the main sewers could be assessed when the mains are built, when the property is connected or when the whole system has been built.

In designing a system of sewers very often deep cuts are necessary in some places in order to accommodate other portions of the district.

In assessing for the connecting sewers by which is meant that portion of the house-drains lying in the street, it is manifestly unjust for those adjoining a deep cut to pay more than those for whose benefit the deep cut was made, but who perchance adjoin a shallow cut. Either the average cost of a connecting sewer should be assessed against each property connected, or the average cost per foot should be taken and the cost assessed according to that.

In the latter case the length of the connecting sewer should be reckoned from the centre of the street on which the sewer is built; this is to equalize matters when for some reason the main lateral sewer is thrown to one side of the street.

There are many other plans of sewer assessment which are perhaps, according to some people's judgment, fully as good or better than those mentioned above.

The above methods must be taken in a general sense, and they may be modified or altogether changed by local circumstances.

In many places there is a very good practice in vogue of dividing the total assessment into several parts and spreading them over a series of years making one part payable each year; of course, charging interest for the parts carried over the

first payment. By this means those whose income is small are enabled to easily pay their assessment, which might be quite a hardship if they were compelled to pay it all at one time.

If any one wishes to pay the assessment at once and thus save interest he is allowed to do so.

Salvage Corps.

The bustle and excitement incident to a fire create a need for something besides water and fire apparatus. Cool heads, and ability rapidly to organize all available assistance in removing or protecting endangered chattels, with a knowledge how best to act, are of great value. These advantages can be best obtained by previous preparation, and by creating a salvage corps connected with or independent of a fire department.

Such an organization, independent of the other department, is undoubtedly the best in large towns; but if the authorities do not provide for it, then the department itself, even if it consists only of one company, ought to detail a squad of its own members, whose duty it should be to give particular attention to this branch of the service. They should be men of character, so that they may influence or control those who may be present; and they should be familiar with the best mode of handling furniture and other property of weight and value, and should possess ability to decide promptly and retain their presence of mind. They should be clothed with special police authority, and should have absolute control of the imperilled property, and should have power to call upon and direct such other citizens as may be needed to give their service.

Such a corps, if it has no appliances, but simply the brains and hands of its members, will be invaluable; but it in addition, it shall be furnished with a light wagon or cart loaded with apparatus and tools, its ability and value will be largely increased. It should have a supply of common axes and pickaxes, crowbars, handtrucks, pails, lanterns, short ladders, step-ladders, and plenty of rope with stakes to form a cordon around property removed or across streets. Especially should it be provided with rubber, canvas or oil-cloth covers varying in size from twelve to thirty feet square. At least one of these blankets should be about twelve feet square, of canvas bound with small rope and with a number of looped handles, thus forming a catch-all both for person and property. One or two chemical extinguishers may be added for use in the absence of the other department of the service.—*Canadian Fire Light and Water.*

In France, wagon tires are from three to ten inches wide, usually from four to six, depending upon the weight of the load. In Germany, the law prescribes that wagons for heavy loads must have a width of tire of not less than four inches.