

ag-ing (ā'jīng)

The process of growing old or maturing.

in-fra-struc-ture (īn'frə-strūk'cher)

The basic facilities, services, and installations needed for the functioning of a community, such as mechanical or communications systems, water and power lines.

The basic, fundamental architecture of any system (electronic, mechanical, social, political, financial, etc.) determines how it functions and how flexible it is to meet future requirements.

Example: Aging Plumbing Infrastructure

It's not uncommon to pick up a newspaper today and read of the rupture of a water main that was installed 100 years ago. Similarly, sanitary sewer line blockages or storm water catch basins that drain little or no water are not unusual occurrences. These events are symptoms of either neglect and/or aging of a plumbing infrastructure system.

Relating this issue to an older homeowners association, we can identify some of the symptoms of a failing plumbing infrastructure. ***Unlike many mechanical and electrical systems which provide comfort or convenience, the failure of a plumbing infrastructure system can render a property uninhabitable until repairs are made.*** It is important to be able to identify the symptoms and early warning signs of a failing plumbing infrastructure so that a master plan for modernization and/or replacement can be developed and implemented.

The development of a master plan starts with a survey to assess the extent and condition of the existing systems and in many instances will recreate the systems "on paper". The investigation can include such procedures as water quality analysis, pipe sampling and analysis, ultrasonic thickness testing of pipe and pressure vessels, video inspection of drainage lines, smoke and dye tests for drainage lines and systems, and equipment performance tests. Once the systems are documented and their condition verified, remedial solutions and associated costs can be developed.

It should also be noted that some of the warning signs stated earlier may not indicate a plumbing infrastructure that is failing, but may also be indicative of one that is incapable of meeting the demands placed upon it. A building's plumbing infrastructure is designed based on use and occupancy. As the use and occupancy change with new owners or new tenants, so may the demands on the plumbing infrastructure. Increases in domestic hot and cold water usage, frequent shutdowns of systems, sanitary discharge and natural gas usage can overtax the building systems resulting in poor performance, or worse, failure.

As with most mechanical problems the longer the condition is allowed to exist the worse the problem will become and the higher the cost to correct the situation. Neglecting a failing infrastructure can only complicate the remedy. Quick decisive action and the implementation of a master plan, over several years, will reduce the risk of complete system failure, limit surprises and control costs.