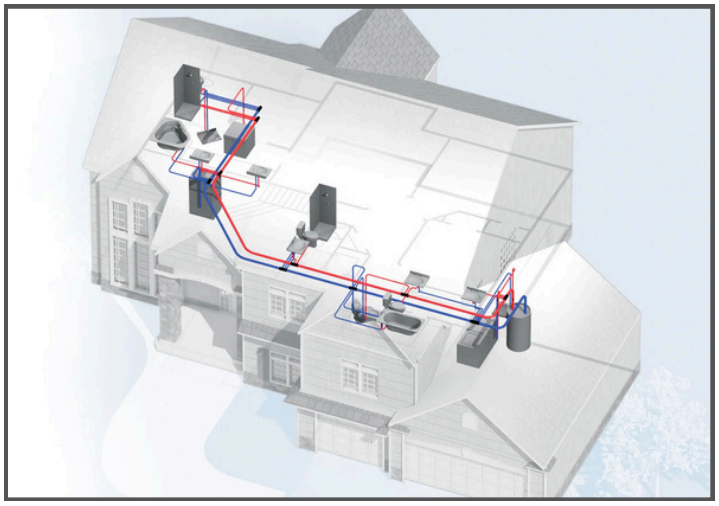
Traditional Plumbing Systems

Historically traditional plumbing systems were designed on what is typically known as the '**Trunk & Branch**' system. This system was based on the type of pipe materials that were commonly available at the time (i.e. initially iron, steel, copper, and later plastic PVC, CPVC and PPR), which were essentially various types of rigid pipes sold in straight lengths and connected together with a combination of straight, elbow, tee and other junction fittings.

Major advancements in materials technology towards the end of the last century led to the development of non-rigid polyethylene piping materials such as PEX (Cross-Linked Polyethylene) and MLCP (Multi-Layer Composite Pipe) that are flexible enough to be supplied in coils, and can be laid in straight or curved profiles over long distances without the need for joints.

This new flexible piping material resulted in a major innovation in the design of modern plumbing systems that saw a move away from the traditional Trunk & Branch approach to a more direct '**Home Run**' system that sought to eliminate as much as possible the need for intermediate pipe joints between the source/ supply point of the water and the outlet/ fixture (i.e. bath, shower, toilet, faucet, sink, dishwasher and washing machine).



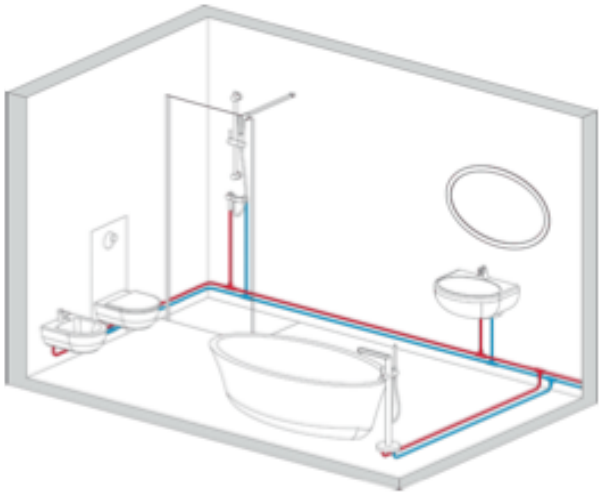
By comparison the Trunk & Branch system has many intermediate pipe joints that are typically hidden and inaccessible in floors, walls and ceilings, resulting in a greater risk of leakage and making repair difficult and expensive to carry out.

In truth the consequential damage to property from such plumbing failures are often several orders of magnitude more than the original cost of the installation.

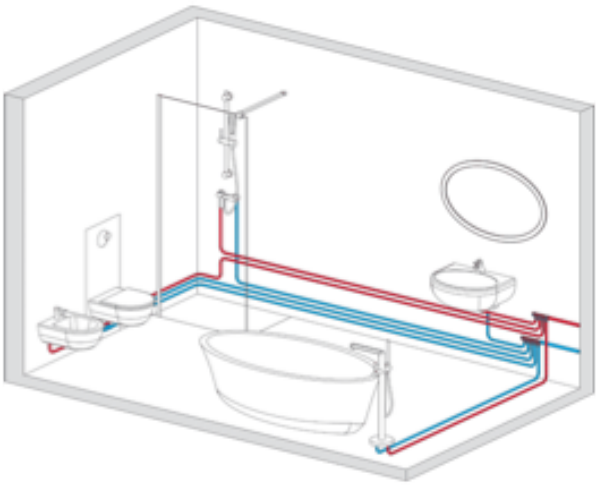
Traditional Plumbing Systems

Today the two predominant schools of thought for plumbing residential buildings are still the Home Run (**HR**) and Trunk & Branch (**T&B**) systems. Both have their positives and negatives, depending on what you're trying to accomplish with the plumbing system. The Home Run carries the distinct advantage of having far fewer joints and potential leakage points, but uses a considerably greater total length of PEX piping as the hot and cold water supply for each appliance or fixture has to run directly to it from the central supply point and control manifold. On the other hand the Trunk & Branch as already mentioned carries far more joints and therefore generally shall require more labour and installation time to complete, in addition to being more inaccessible for repairs and maintenance. Other considerations include the pressure losses and sudden changes in mixed water temperature that are associated more with the T&B than the HR system.

There is however a third and more recent innovative plumbing system, that draws on the unique characteristics of flexible PEX piping and the best features of both the T&B and HR systems. This new approach is known as the Logic System and is at the heart of the way we advocate the use of Speedfit Plumbing here in Nigeria and across sub-Saharan Africa. So what exactly is the '**Logic Plumbing System**'?



Schematic diagram of a typical T&B bathroom installation



Schematic diagram of a Speedfit Logic Manifold bathroom installation

It's quite simple: a main line connects to an **accessible pipe manifold** which then distributes water via individual lines to all the outlets or fixtures in a single zone or adjacent grouping.

This design uses significantly less pipe than a HR layout, with just a few more connections. It also requires considerably fewer connections compared to a T&B installation. In summary the Logic Manifold (**LM**) system offers an overall material economy and a superior performance efficiency over the other 2 legacy systems.