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A STUDY ON MODERN BATHROOM THROUGH SANITARY WARE
AFTER THE NINETEENTH CENTURY

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AFTER THE NINETEENTH CENTURY**

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ABSTRACT

A STUDY ON MODERN BATHROOM THROUGH SANITARY WARE AFTER THE NINETEENTH CENTURY

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In this study the design of the sanitary ware and bathrooms are examined, concentrating on small bathrooms and changing design aspects of bathrooms. The design considerations of bathrooms and the design of the bath tub, wash basin and toilet which forms the sanitary ware sets in bathrooms is reviewed as for being dominant elements of bathroom design.

Keywords: Bathroom Design, Sanitary Ware, Small Bathrooms, Evolution of Modern Bathrooms

ÖZ

ONDOKUZUNCU YÜZYIL SONRASI MODERN BANYOLARIN SERAMİK SAĞLIK GEREÇLERİ ÜZERİNDEN İNCELENMESİ

Baran, Gülsüm

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Bu çalışmada seramik sağlık gereçlerinin ve banyoların tasarımı, küçük banyo hacimleri ve değişen tasarım eğilimlerinin doğrultusunda incelenmiştir. Banyoların tasarım ilkeleri ve banyolarda kullanılan seramik sağlık gereçleri setlerini oluşturan küvet, lavabo ve tuvalet tasarımları banyo tasarımındaki baskın etkileri sebebiyle gözden geçirilmiştir.

Anahtar kelimeler: Banyo Tasarımı, Seramik Sağlık Gereçleri, Küçük Banyolar, Modern Banyoların Gelişimi

To my parents,
for their endless support.

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CHAPTER 1

INTRODUCTION

1.1 Problem Definition

Throughout the course of history, the meanings, purposes and methods of bathing have changed. Ancient civilizations considered water as symbol of purity and immortality of the soul, cleaning the body was a requirement prior to entering sacred spaces. In ancient Greece bathing and sports were complementary activities. According to Roman culture bathing was a social duty in addition to body refreshment and relaxation extents. Roman baths were meeting places with various entertainment facilities. In Islam body hygiene is essential and established in the Quran. Turkish baths (hammam) provide not only the body hygiene but also a relaxation and rejuvenation fulfilling the Islamic hygiene regulations. In Europe, during the Middle Ages bathing was restricted to rich people and through the 20th century it was implied as medical treatment. Then in early 1900s with the rise of cleanliness bathing gained importance again. With the advent of the Industrial Revolution, developments in plumbing technology and mechanization brought bathrooms into homes. The brief history of bathing shows us the importance of bathing; it has a close link with the changes in definition of cleanliness which depends on time and cultural effects.

After the existence of the bathroom as a separate “clean room” in the house, sanitary ware and spatial organizations of bathrooms were defined based on providing the basic needs with low cost, in order to make this relatively expensive room a part of every house. By this determinative attitude, the basics of bathroom design and plumbing technologies were established. In the meantime, ceramic industry and building industry framed the bathroom standards. The standard bathroom within this frame has the sanitary ware sets consisting of bathtub,

washbasin and a toilet to set off the quality of the bathroom space. These sets are generally designed to match each other within a popular style and the specs of dynamic consumer values. The relation between the units forming these standard product sets seems to be 'being closer or separate' according to the size of the room.

Nowadays, bathrooms are not considered as spaces just for performing hygienic requirements; they are expected to serve for refreshing ourselves spiritually as well as physically. Andreas Dornbract points out this issue as:

A bathroom that, in its entirety, is a kind of interface for our physical and spiritual needs and which also reflects them. This gives rise to a new way of looking at things, one that frees the bathroom from its acquired limitations and re-defines it as a space for living. The role we play is changing from that of "bathroom user" to "bathroom occupant" (Hebel and Stollmann 2005).

Thus, their design has to go far beyond fulfilling the standard requirements. As they are usually the smallest and the most task specific rooms consisting of dominant elements like ceramic sanitary ware, bathrooms need creative design in order to improve the quality of the bathroom space to respond to expectations. However, the bathroom design is performed as placing the sanitary ware as appropriate as possible due to the dominant character of the sanitary ware. The dominant character of the sanitary ware is the natural result of sanitary ware's functions and the circulation areas that they define as a part of a set.

The architect restricted by the standard sanitary ware sets' rigid presence cannot form the space organization he/she idealized and see his/hers ideas put in to practice. The designers also have constrictions in developing the sanitary ware products and they keep designing new products for the new seasons. In most cases there are not any apparent collaboration between designers and architects. The bathroom design process usually works as the designer designs the products, the

architect designs the bathrooms and the user chooses the products from catalogues for their bathroom with or without the supervision of an architect.

On the other hand, besides dynamic consumer values and interaction between designer, architect and consumer, the environmental considerations have become vital. There is more waste water generated and dispersed today than at any other time in the history of our planet: more than one out of six people lack access to safe drinking water, and more than two out of six people lack adequate sanitation (WHO/UNICEF JMP, 2004).

According to Silva and Rodrigues:

As water is a limited resource which has to be safeguarded and conserved, its efficient use is an environmental imperative in every country in the world. It may be recalled that, according to forecasts by the World Water Council, 23 countries will be facing absolute water shortage in 2025, and between 46 and 52 countries (encompassing 3000 million people) could be suffering "hydric stress" by then (Silva and Rodrigues 2009).

In terms of sustainability, the priority measure is obviously to increase efficiency in the use of water. The major water consumption in the homes is in the bathrooms. Therefore as an inevitable fact, the sanitary ware design and bathroom rituals will be affected to preserve this precious source for future generations.

1.2 The Scope of the Study

This study aims to examine the modern bathroom design, emphasizing spatial limitations and concentrating on sanitary ware sets consisting of bathtub, wash basin and toilet.

The questions to be addressed in this study are:

- How has the design of the sanitary ware changed and sanitary ware sets evolved?
- What constitutes the basics of bathroom design? What will be the basics of bathroom design in the future?
- What are the special design solutions for small bathrooms rather than using standard sanitary ware sets?

1.3 Method

Aiming to examine the design of the bathrooms, concentrating on the sanitary ware due to their dominancy in bathroom design; the history of the bathtub, wash basin and toilet which forms the sanitary ware sets in bathrooms is reviewed individually in Chapter 2.

In Chapter 3 evolution of modern bathroom is reviewed through the evolution of the sanitary ware sets from late 1800s to 2000s via magazine ads and company catalogues. The products diverging from standard sanitary ware sets are also reviewed in this chapter.

Chapter 4 concentrates on bathroom design principles and the arrangements for small bathrooms. Small bathroom examples are examined.

Finally, conclusions of the research carried out will be evaluated in order to improve basics of bathroom design in the future.

CHAPTER 2

HISTORY AND DEFINITION OF; BATHTUB ANDSHOWER, WASH BASIN, TOILET AND BIDET

2.1 History of Bathtub

The first personal sized bathtub was found on the Isle of Crete, in the Queen's bathroom at The Palace of King Minos in Knossos. The bathtub was made of painted terracotta and had ornaments on it. It was filled and emptied by hand (Cook J.M. 1959). This tub, which was made 3600 years ago, is told to be the most likely fore father of the classic 19th century claw foot tub. In the book Clean and Decent, Lawrence Wright ironically asks which is which by two bathtub figures; The Queen's bathtub and a bathtub of 1891 (See in figure 2).

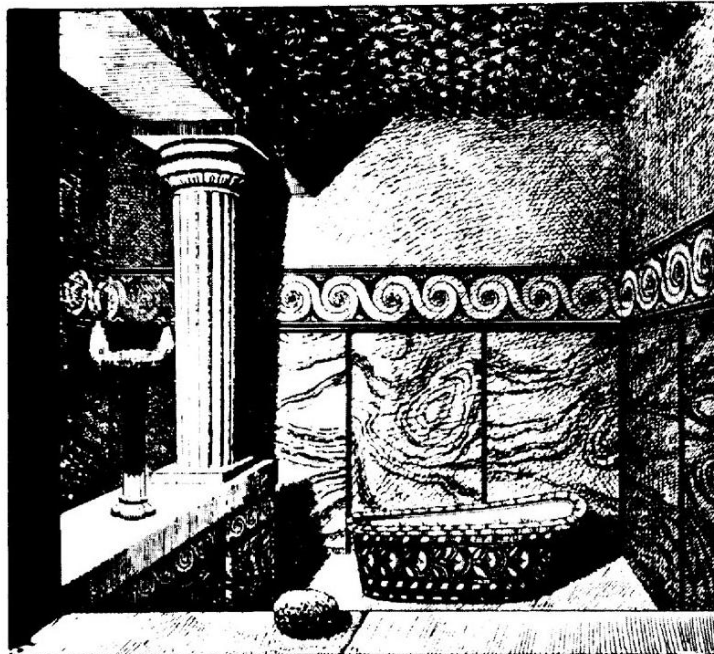


FIGURE 1 Queen's Bathroom (Source: Wright 1960)



FIGURE 2 Which is which? (Source: Wright 1960)

The Roman Empire is very well known for its public baths. By the help of their complex sewage system, private baths were also found in some homes. Private bathing rooms had a shallow swimming pool covering most of the room as a bathtub. Marble was used in these rooms.

After the Roman Empire, during the dark ages, bathing and sanitation were rejected in Europe. The use of perfume replaced the bathing. European families in the middle ages had a bath in every three weeks in a wooden barrel. At the end of 14th century Turkish Baths were seen in Paris and London but, by the rejection of the church and contagious diseases they disappeared (Wright 1960, Kira 1975, Asensio 2003, Fitöz 1995).

In renaissance, sanitation started to be important by the effect of massive deaths by plague. In the 19th and 20th centuries, bathrooms started to become a separate room by the development of the plumbing technologies.

Lawrence Wright claims that:

Perhaps the first advertisement offering a house with a bathroom is one in a Paris paper of 1765. Soon after this ,such advertisements are frequent, ... (Wright 1960,126).

In those days, baths were made as fine furniture and copper was a favourite material for being malleable and rustproof. But for its high cost, sometimes tin was used (Mott 1888, Wright 1960).



FIGURE 3 Bathtubs of late 1800s (Source: New York Public Library Digital Catalogue)

After the First World War bathtubs started to be used widely. In USA and Great Britain large amounts of enamelled sanitary ware were produced (Wright 1960).

2.2 History of Shower

Early examples of showers seen on Greek vase-paintings are from the public baths adjunct to the gymnasium. Lawrence Wright says that “The Greek public bath, whether shower or plunge, is brief and cold; for athletes rather than for sybarites (Wright 1960).”

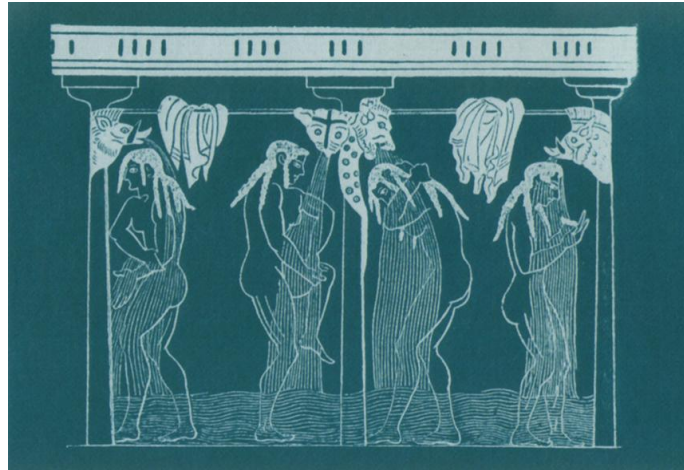


FIGURE 4 Greek showers (Source: Asensio 2003)

Later the shower baths started to be used again in 19th century for medical treatment and usually cold water was used to cure the patients. The Douche Bath taken with pressured water and the Rain Bath which is milder were the types of shower bath (Gideon 1955, Wright 1960).



The Rain Bath for Medical Purposes

FIGURE 5 Rain Bath (Wright 1960)

Then in late 1800s showers started to be used widely in high class apartment houses.

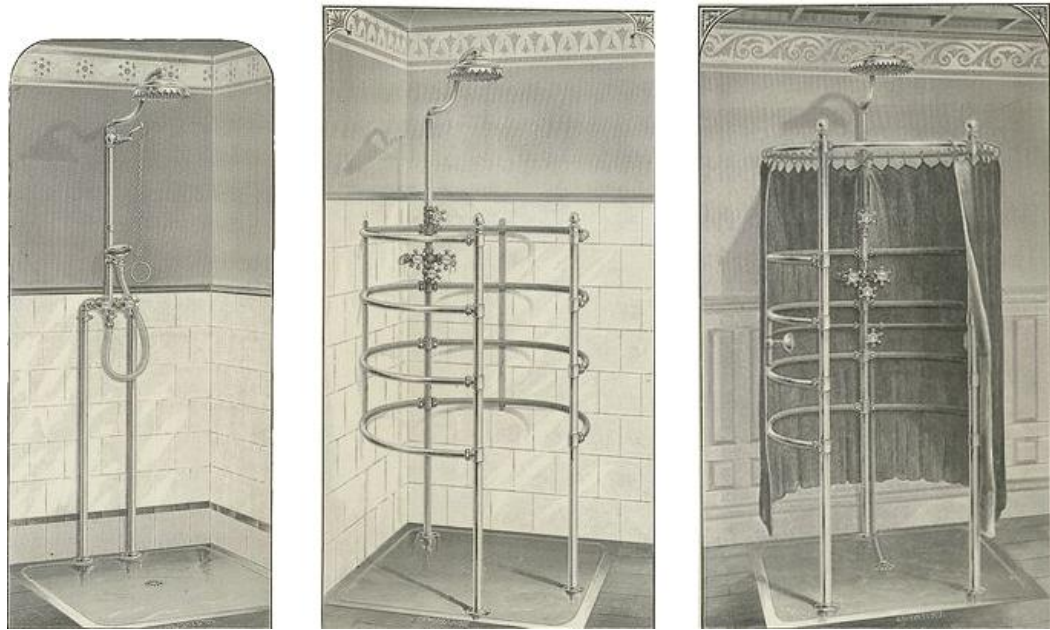


FIGURE 6 Shower Examples of 1880s (Source: New York Public Library Digital Catalogue)

2.3 Definition and Types of Bathtubs

One of the three main elements of the modern bathroom is the bathtub. Its form has not changed much in time, until the use of acrylic. Nowadays Bathtubs are generally made of acrylic. According to Asensio the standard measurements of bath tubs are:

The standard measurement for a conventional bathtub is 1.60m or 1.70 m long x 70 cm wide. Smaller models (1.40 m or 1.20 m long x 70 cm wide) are designed for more limited spaces (Asensio 2003).

Bath showers are used as a good solution in small bathrooms where installing a separate shower is not possible. By fitting a shower head above the bathtub a satisfactory result can also be provided, but a shower curtain or sliding or folding doors is needed to protect the bathroom from splashing water (Swift 1988,24).

The types of bathtubs are:

2.3.1 Built-in Bathtubs

When bathrooms became separate rooms, Built in bathtubs started to be used by the help of developments in plumbing techniques.

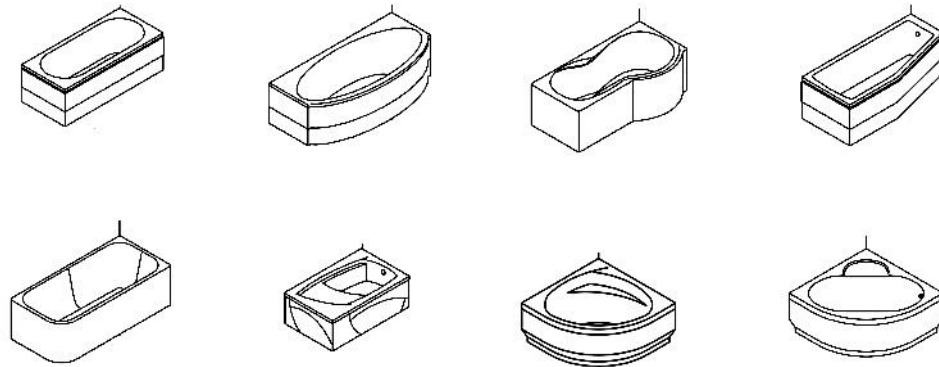


FIGURE 7 Examples of Built-in Bathtubs

2.3.2 Free-standing Bathtubs

Early examples of the free-standing bathtubs were filled and emptied by hand and they were mobile. By the development of plumbing technology their use is more practical.

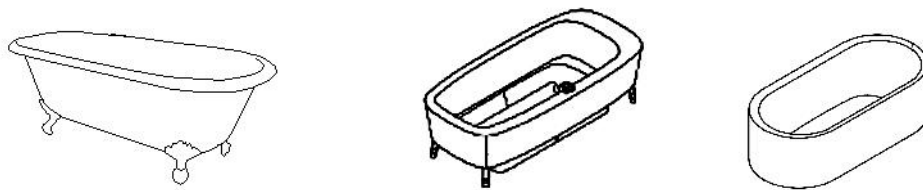


FIGURE 8 Examples of Free Standing Bathtubs

2.3.3 Hydro Massage Bathtubs

Hydro massage bathtubs are bathtubs containing a series of nozzles and jets at various levels on the inside of the tub which provides body massage.



FIGURE 9 Examples of Hydro Massage Bathtubs

2.4 Definition and Types of Showers

2.4.1 Shower Basins

Shower basins are usually constructed from molded acrylic, fiberglass, pressed steel or vitreous china (Asensio 2003,24). The shower basins should have a minimum measurement of 60X60 cm (Asensio 2003,108). Shower basins are covered by shower cubicles or shower curtains in order to avoid splashing water.



FIGURE 10 Examples of Shower Basins

2.4.2 Steam Showers

Basically, steam showers have a humidifying steam generator which produces water vapour in addition to the standard shower features. But nowadays they may provide additional features such as ceiling rain showers, radios, telephones, audio input from an MP3 or CD player, chromatherapy or aromatherapy and even foot massagers.

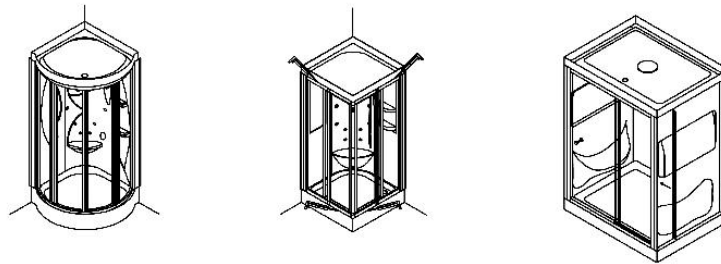


FIGURE 11 Examples of Steam Showers

2.5 History of Wash Basin

Early wash basins consisted of a jug and a bowl. In medieval times, portable wash stands with a metal bowl, a reservoir and a tap were used. There were also fixed stone basins for “private washing” which consisted of a basin and a reservoir hung over the basin with heated water in it. They were called lavatoria, lavabos, lavers and sometimes benitiers (Wright, 1960).



FIGURE 12 Examples of Medieval Washstands (Source: Wright 1960)

Lawrence Wright describes the evolution of the wash- basin as:

Here we may trace the evolution of the wash-basin from the medieval lavabo. About 1740, this reappears as a dainty tripod with a tiny china bowl fitting into a round recess or hole. Below is a shelf for a tiny jug of water, perhaps scented toilet-water. In between there may be another shelf, or tiny drawers for the innocent trifles.... About 1770, the wash-stand is moved into a corner. The top becomes a quadrant, with an up stand, is enlarged to take a bigger basin, and has extra holes or round soap-dishes (Wright 1960).

In 1830, wash stands had the form of a table which had a wooden or marble upstand and a marble countertop with a bowl on it. Then they got bigger by the addition of the tiled backsplash. When the running water technology started to be used the bowl became a built in fixture to the countertop in 1870s. They looked like complete furniture for bathrooms or bedrooms which were made to look expensive and they were expensive (Wright 1960).

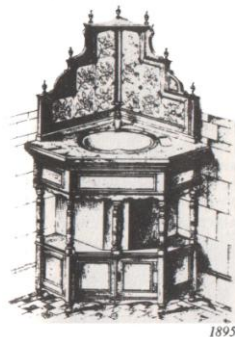


FIGURE 13 Examples of Washstands (Source: Wright 1960)

The use of cast iron washstands enabled mass production and the production of more ornamented products for half the price in 1850s. Then in 1900s, one piece basins were made as a complete countertop with recess for soap by fireclay or white ware (Wright, 1960).

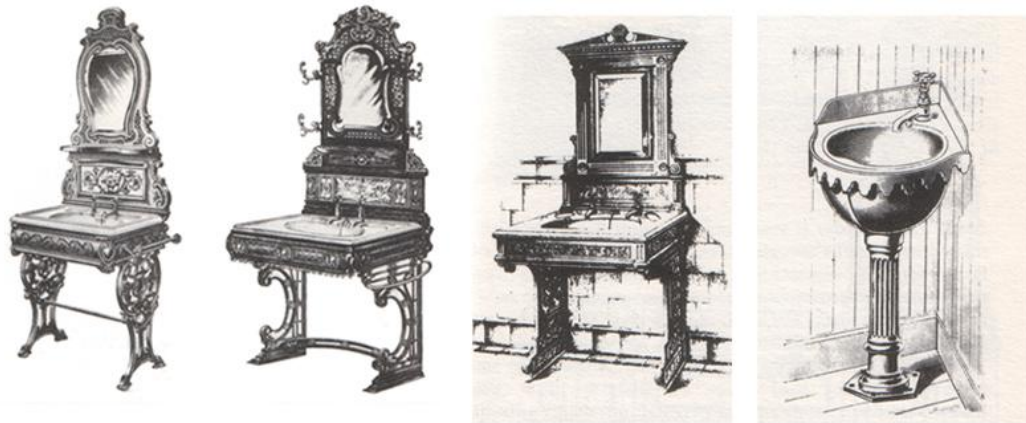


FIGURE 14 Examples of Cast Iron Washstands (Source: Wright 1960)

2.6 Definition and Types of Wash Basins

2.6.1 Pedestal Wash Basins

A pedestal washbasin consists of a basin mounted on a pedestal base. In this kind of wash basin the plumbing is covered by the pedestal and the basin is also fitted to the wall in addition to the pedestals support.

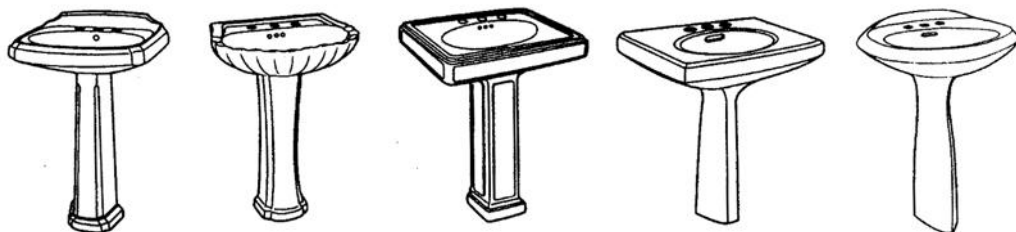


FIGURE 15 Examples of Pedestal Wash Basins (Source: Korejvo 2000)

2.6.2 Wall hung Wash Basins

Wall hung basins are mounted on to the wall and the plumbing is usually not covered.



FIGURE 16 Examples of Wall Hung Wash Basins (Source: Korejvo 2000)

2.6.3 Built-in Wash Basins

Built-in wash basins are sunk into the countertops providing a large countertop space and storage space. The cabinetry also serves as a cover to the plumbing below the wash basin.

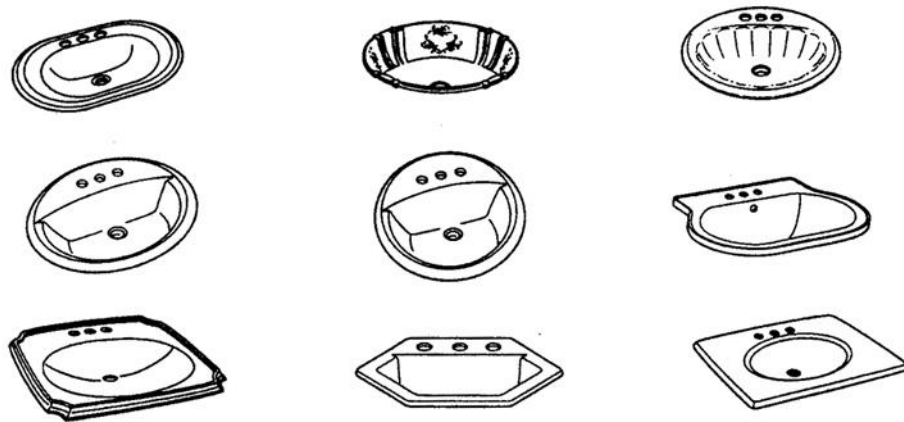


FIGURE 17 Examples of Built-in Wash Basins (Source: Korejvo 2000)

2.6.4 Countertop Basins

This type of wash basins are mounted on countertops. They are popular nowadays with a range of choices.

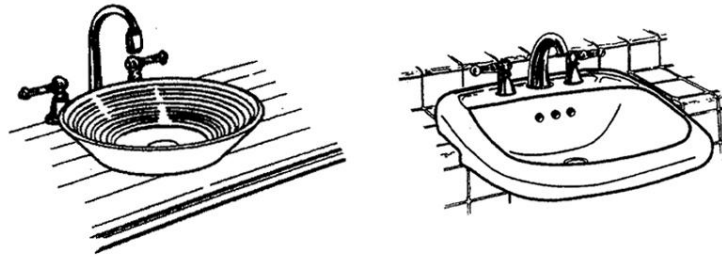


FIGURE 18 Examples of Countertop and Semi Recessed Countertop Wash Basins (Source: Korejvo 2000)

2.7 History of Toilet and Bidet

2.7.1 History of Toilet

In the ancient times, in Indus Valley Civilization 2600 BC, Minoan Civilization 1500 BC and in the Roman Empire the toilets were used and sewage systems were made (Wright 1960, Kira 1976, Pathak 1995, Fitöz 1995, Asensio 2003).

After the collapse of the Roman Empire by the effect of the Roman Catholic Christian fundamentalism in Europe, a regression in personal hygiene caused the loss of technology. In the medieval times, chamber pots were used and the contents were thrown on the streets by warning cries “gardez l’eau” or “gardy-loo ! ”. A kind of rest room in the medieval castles called garderobe and royal close stools which are portable boxes, are other toilet types of those days. By the invention of the porcelain in China, porcelain pots started to be used and assembled in ornamented furniture (Wright 1960, Kira 1976, Fitöz 1995, Asensio 2003).



FIGURE 19 A Royal Stool (Source: Wright 1960)

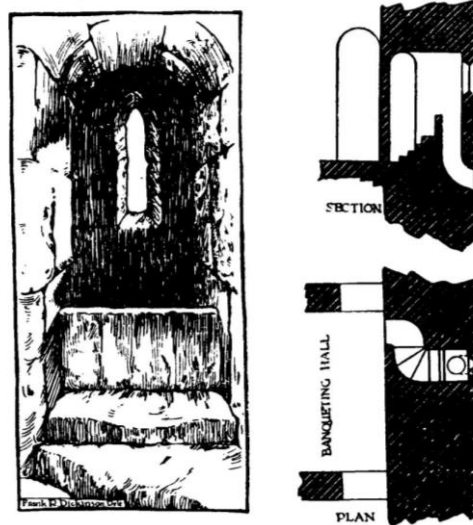


FIGURE 20 A Garderobe in London Tower (Source: Wright 1960)

In 1596, Sir John Harrington designed a flush toilet which he named “The Ajax” and wrote the book “Metamorphosis of Ajax” describing the details of the construction, cost and maintenance of The Ajax. Although its whole charge was thirty shillings and eight pence only two Ajax toilets were produced. His design was ridiculed in England and it took nearly 200 years to see a new toilet after Harrington’s valve toilet (Wright 1960, Fitöz 1995, Asensio 2003, Twyford Bathrooms digital database).

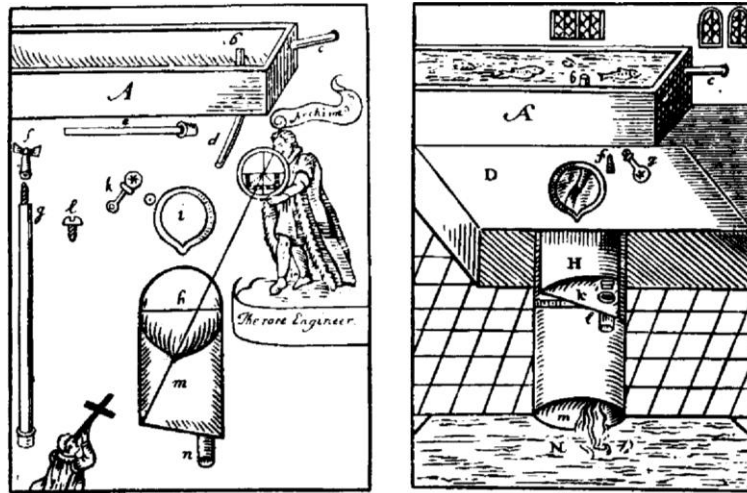


FIGURE 21 The drawings of Ajax from the *Metamorphosis of Ajax* by Sir John Harrington (Source: Wright 1960)

The first notable development of flush toilet is considered to be a valve toilet designed by Alexander Cummings, a watchmaker from Bond Street, in 1775. Cummings' design had an s-trap, a flush tank and a valve interconnected with the flush by a pull-up handle. In 1778, Joseph Brammah improved Cummings' valve toilet by a hinged valve that seated itself with a cranking motion. Brammah was a cabinet maker whose one of jobs was fitting up toilets, after taking his patent in 1778, he made about 6000 toilets until 1797. The Brammah's valve toilet was used for the next 80 to 100 years and its only rival was Hopper Toilet. Hopper toilet was made of two pieces of fireclay and it was not complex and expensive like Brammah's valve toilet. Its disadvantage was its inadequate flush with a thin spiral of water (Wright 1960, Fitöz 1995, Twyford Bathrooms digital database).

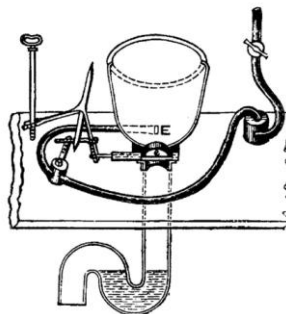


FIGURE 22 Cumming's Valve Toilet (Source: Wright 1960)

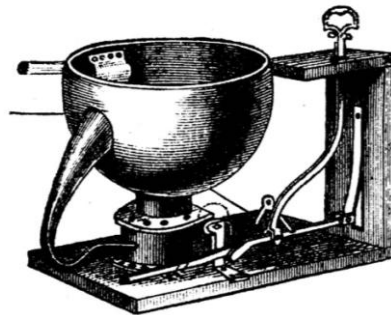
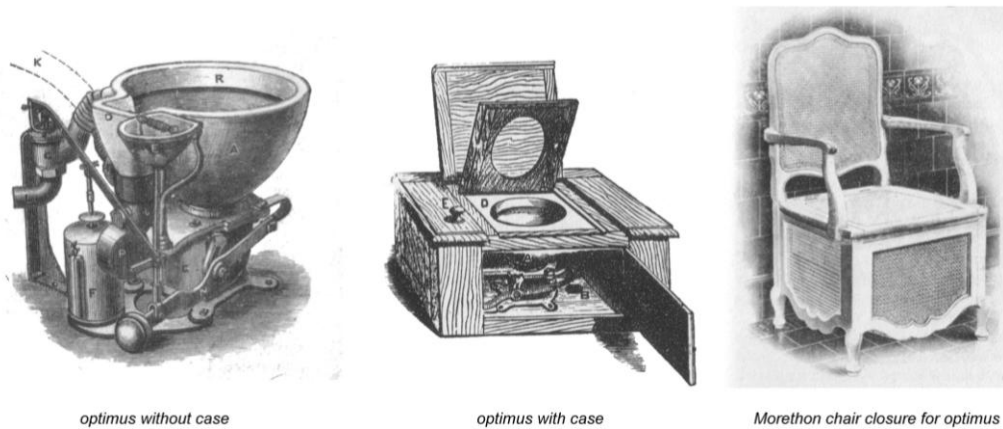


FIGURE 23 Brammah's Valve Toilet (Source: Wright 1960)

In 1870 T.W.Twyford's washout toilet with a shallow bowl and Hellyer's valve toilet "Optimus" an improved valve toilet and the Syphonic Toilet of J.R. Mann were introduced. Thomas Crapper popularized the siphon system for emptying the tank and his name became synonymous with flush toilets even though he is not the inventor (Wright 1960, Fitöz 1995, Twyford Bathrooms digital database).



optimus without case

optimus with case

Morethon chair closure for optimus

FIGURE 24 Hellyer's Valve Toilet Optimus With and Without Case and With Morethon Chair Closure. (Source: Wright 1960)

Then in 1885 Twyford introduced "Unitas" first one piece ceramic pedestal toilet (see in figure25) and in 1900 Twyford made wall hung toilet. At the end of 1950s vitreous china bodies started to be used instead of earthenware bodies (Twyford Bathrooms digital database).



FIGURE 25 Unitas by Twyford (Source: Twyford Bathrooms digital database)



FIGURE 26 Unitas in Twyford's Catalogue in 1883 (Source: Twyford Bathrooms digital database)

Pathak proves that:

From 1880 onwards, however, the emphasis has been more on aesthetics to make cisterns and bowls decorative. The bowls were so

colourful that some suggested using these as soup bowls. It was in 1880 that the toilet curtains made their appearance. The trend was called the age of “Bellepoque” in France and Edwardian (opulence) in England. During 1890 we had the first cantilever type of toilet. Since then the world has not witnessed any significant technical change except some change in shape of toilets and reduction in quantity of water per use (Pathak 1995).

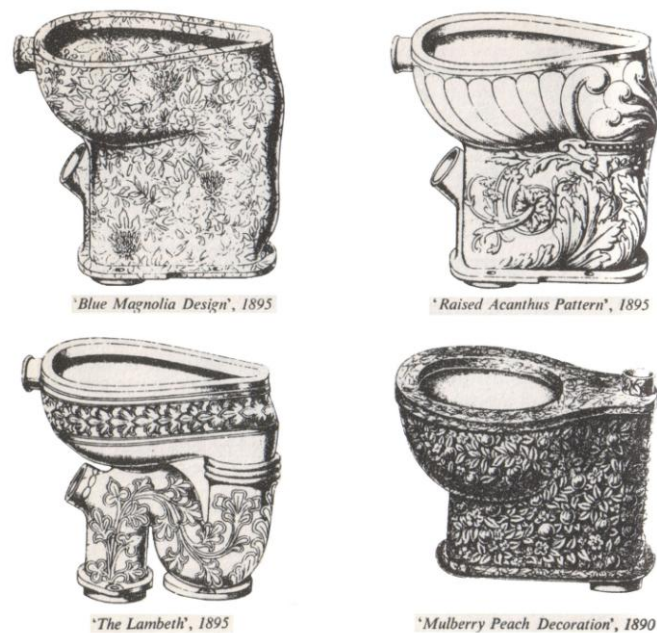


FIGURE 27 Examples of Decorative Toilet Bowls from 1800s (Source: Wright 1960)

According to Bathroom Manufacturer’s Association’s Water Wise Fact Sheet, toilets are still one of the largest water users in the home, even though the amount of water used to flush WCs today has tumbled from 13 litres in the 1950’s, to today’s ultra efficient dual flush, using less than 4.5 litres per flush. Water regulations of Britain state that water consumption can not be more than 6 litres per flush (BMA).

United States Environmental Protection Agency states that:

Over the course of your lifetime, you will likely flush the toilet nearly 140,000 times. If you replace older, existing toilets with Water Sense

labelled models, you can save 4,000 gallons per year with this simpler, greener choice (EPA 2010).

The toilet is a major water consuming device in homes so that using water efficient toilets gains more importance in saving water. Using water efficient sanitary ware is encouraged among consumers and the production of water efficient sanitary ware is also encouraged among industry. This is made by the help of water efficiency labelling systems.

Many developed countries have Water Efficiency Labelling System “WELS” in different stages of development and implemented in several forms. In some countries, it is a compulsory requirement to provide water efficiency labels for certain kinds of plumbing fixtures and appliances before they can be put on sale in the market. For others, the WELS is implemented on a voluntary basis so as to allow a lead time for the market to transform towards more water efficient products (WSDHK 2010).

The implementation of WELS aims to; provide consumers with information on the levels of water consumption and efficiency ratings of plumbing fixtures and water consuming appliances, to facilitate consumers to select water efficient plumbing fixtures and water-consuming appliances, to promote public awareness on water conservation and efficiency issues and to achieve actual water savings (WSDHK 2010). The following ranges of measures are important in order to achieve the aims; water efficiency labelling, technological improvements, community awareness and education, social marketing, regulation and legislation, research and development, water efficiency accreditation and trials of new initiatives (Water Corporation).

The examples of water efficiency labels from different countries can be seen in Appendix B.

2.7.2 History of Bidet

The bidet was first mentioned in 1710 and in Paris it was advertised in 1739. Lawrence Wright ridicules an early dealer for misunderstanding its characteristic shape and offering it as a porcelain violin-case with four legs. The bidet is generally misunderstood or found useless by many nations rather than its French inventors (Wright 1960).

2.8 Definition and Types of Toilet and Bidet

Toilets are the most important devices for hygiene, as the disposal of the body wastes had been a big problem for centuries. Toilets are basically consisting of a bowl and a flush and with various bowl shapes and flushing types they offer a wide range of designs. Toilets can be made of fireclay, glazed earthenware or vitreous china; stainless steel can also be used but preferred in public WCs to be vandal-proof. For being easily cleaned and hygienic vitreous china is the most popular material (Snow and Hopewell 1978).

The word bidet means pony or nag in French, and the fixture is so named because one sits astride it. Bidet looking like another pair of toilet indeed acts more like a wash basin than a toilet. Bidet is used sitting astride it and contrary to the toilet the user sits facing the faucet handles. Swift judges that, 'primarily it is an invaluable aid to personal hygiene, although it can certainly be used for other purposes- to rinse small items, as a place to dump wet washing, or for washing feet (Swift 1988).

A nozzle attached to an existing toilet can also be a bidet. This kind of toilet is like the union of bidet and toilet, providing hygiene in smaller space. They were made in 1960s for the lack of space for a separate toilet and bidet. They are started to be called as “washlet” by Japanese manufacturer TOTO's product Washlet which is basically a toilet seat with an integrated nozzle for bidet functions with a heated seat and warm-water. Turkish manufacturers, to satisfy the Islamic hygiene customs

embedded a pipe with an ascending spray of water to the toilet in 1980s (Yakuboğlu 2002).

2.8.1 Floor Standing Toilet

Floor standing toilets have a pedestal mounted on the floor. The soil pipe of the toilet may connect to the main stack through the wall or the floor.



FIGURE 28 Examples of Floor Standing Toilets (Source: Korejvo 2000)

2.8.2 Wall-hung Toilet

Wall-hung toilets are mounted on the wall. They are advantageous for cleaning the bathroom floor. They may need reinforcement in the wall they are mounted on. Wall-hung toilets usually have flush tanks built in the wall which supports the clean look.



FIGURE 29 Wall-Hung Toilet Examples

By considering the flush tank types of the toilet we can add to the types; one-piece toilet which has the tank part and the bowl in a single moulded unit, two-piece toilet which has the bowl and the tank separately. Two-piece toilet may also vary with flush tank types as; built in the wall, high on the wall or wall mounted. The examples of one-piece toilet and two-piece toilet are below.

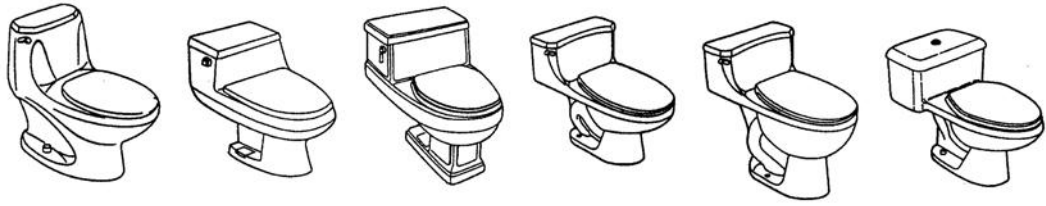


FIGURE 30 Examples of One-Piece Toilets (Source: Korejvo 2000)



FIGURE 31 Examples of Two-Piece Toilets (Source: Korejvo 2000)

2.8.3 Floor Standing Bidet

Floor Standing Bidets are bidets with pedestals.



FIGURE 32 Examples Floor Standing Bidets (Source: Korejvo 2000)

2.8.4 Wall-hung bidet

Wall-hung bidets are bidets mounted on the wall.



FIGURE 33 Examples Wall-Hung Bidets (Source: Korejvo 2000)

CHAPTER 3

EVOLUTION OF MODERN BATHROOMS

When the bathrooms first appeared as separate rooms in the 19th century they were generally converted bedrooms which were very large compared to modern bathrooms. At the beginning of the 20th century, the bathrooms started to get smaller accommodating basic sanitary ware. Wright and Giedion note that space saving in the bathrooms and conversion from a large room into a compact bath shell begun with American Hotels. The shrinkage of the bathroom can be examined through catalogue prints of the firm J.L. Motts Iron Works shown in figure 34 and figure 35.

In the early 1900s, the basic sanitary fixtures acquired their basic shapes and the space requirements for the bathrooms were determined as reviewed in Chapter 2. Kira states the standardization of bathroom size and equipment in early 1920's as the normal three-fixture and 5 foot by 7 foot bathroom (Kira 1976). The three-fixture sets that Kira mentions are the main elements of a bathroom which define the character of a bathroom. The three-fixture in these sets are; bathtub, wash basin and toilet.

Modern bathrooms started to take their places in homes complete with bathtub, wash basin and toilet. The existence of the bathroom in homes and the rise of the cleanliness correlatively changed bathing rituals. The bathroom took its place in daily life.



FIGURE 34 Bathroom Interior by the J.L. Mott Iron Works 1888 (Source: New York Public Library Digital Catalogue)

In the above example from 1888, the sanitary ware set consists of; a washstand with oval wash basin, a porcelain lined cast iron bathtub, a porcelain lined cast iron seat bath, a porcelain lined cast iron foot bath and a cistern toilet. The colour of the set is white and the wood work cabinets have the options; black walnut, ash or cherry. The sanitary ware set is all installed with wood work cabinets along two walls of the large bathroom. There are also two storage cabinets in the bathroom. The walls have ceramic tiling and decorative paint. The ceiling has decorative woodwork and a chandelier. The floor is parquet with carpets on it.

This bathroom was too large according to the modern bathrooms, the sanitary ware is considered as furniture. The plumbing fixtures are all hidden even the pipe of the toilet's cistern.



FIGURE 35 Bathroom Interior by the J.L. Mott Iron Works 1911 (Source: New York Public Library Digital Catalogue)

The sanitary ware set consists of; a pedestal wash basin, a porcelain lined cast iron bathtub and a toilet in the above bathroom example of 1911. The bathtub also served as a shower by the help of shower curtain. The colour of the set is white. The walls are window high ceramic tiled and the rest is painted. The ceiling has decorative gypsum cornice moulding and a plafonier. The floor is also ceramic tiled with a row of dark border tiles. The sanitary ware set is designed thinking of small bathroom installations.

This bathroom is an early example of modern bathrooms. The fixtures require minimum space.

3.1 A Review of the Sanitary Ware Sets

Sanitary ware is generally produced as sets composed of vitreous china toilet, vitreous china wash basin and a matching acrylic bathtub. This chapter is a review of sanitary ware sets in order to examine the changing design aspects of these basic elements of bathrooms.

A timeline of standard elements of modern bathrooms will be observed for a laminar assessment via magazine ads and company catalogues through late 1800s to 2010s.

The examples are chosen from various manufacturing companies products published in various publications to provide a wide range. The early examples are from America where the modern bathrooms started to be seen first at the hotel rooms and then in homes. The following examples are chosen considering their characteristic properties which reflect the features of their era. The examples are differing from middle class bathrooms to luxury bathrooms at homes. The changes by the technological developments, trends, needs and expectations are pursued through decades. The drifting between the decades is reviewed in the discussion part at the end of the section 3.1.

3.1.1 Examples of Sanitary Ware Products in late 1800s

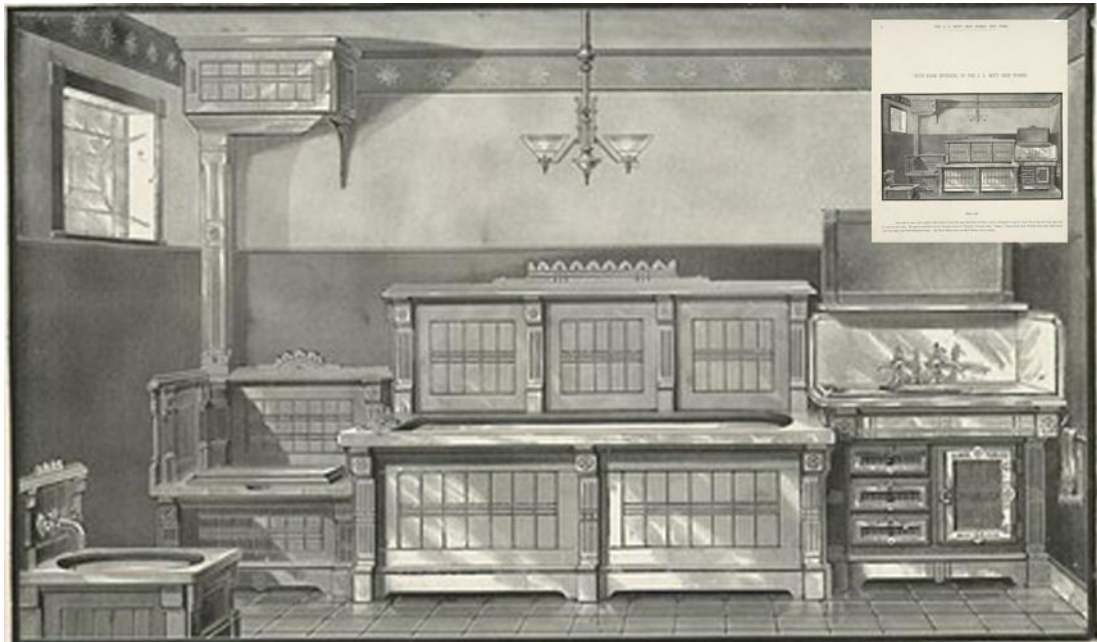


FIGURE 36 Bathroom Interior by the J.L. Mott Iron Works 1884 (Source: New York Public Library Digital Catalogue)

The sanitary ware set consists of; a washstand with oval wash basin, a porcelain lined cast iron bathtub, oval porcelain foot bath and a cistern toilet. The sanitary ware set is all installed with wood work cabinets along one wall of the bathroom, except for the foot bath installed on the other wall. The colours of the set are white and the wood work of the cabinets can be black walnut, ash or cherry. The walls are painted and there's decorative painted border. The ceiling is painted and a chandelier is used as lighting fixture. The floor is ceramic tiled.

In late 1800's the sanitary ware were often preferred closed by the cabinetry. There were also open set up sanitary ware sets as seen in the below example.

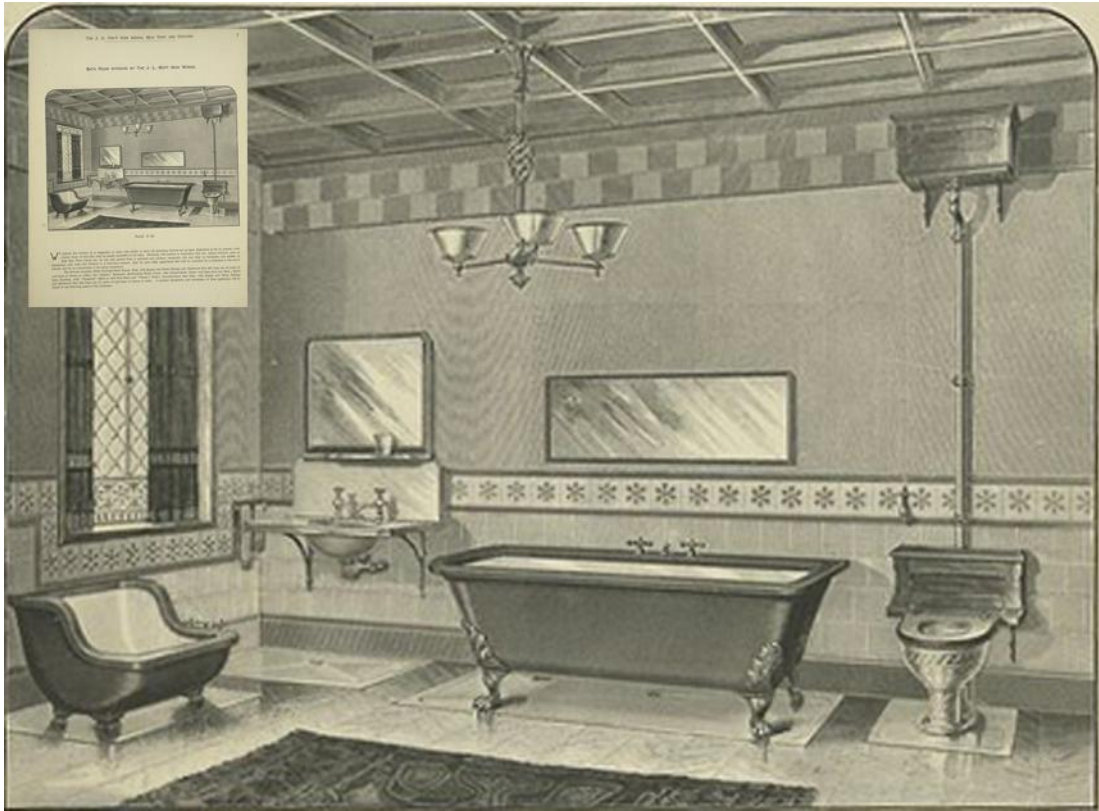


FIGURE 37 Bathroom Interior by the J.L. Mott Iron Works 1888 (Source: New York Public Library Digital Catalogue)

In the catalogue of Mott Iron Works it is noted that this set was designed for the ones who prefer all plumbing fittings set up open and it is possible to use it with cabinet work.

The sanitary ware set consists of; a wall hung oval wash basin, porcelain lined cast iron claw foot bathtub, porcelain lined cast iron seat bath and a cistern toilet with ornaments on it. The colours of the set are white and black. The sanitary ware set is installed along two walls. The walls are tile wainscot with a row of floral border tiles and the rest is painted with a chequered border on top. The ceiling has decorative woodwork and a chandelier. The floor is parquet with embedded ceramic bases for sanitary ware and also with a carpet on it.

3.1.2 Examples of Sanitary Ware Products in 1900

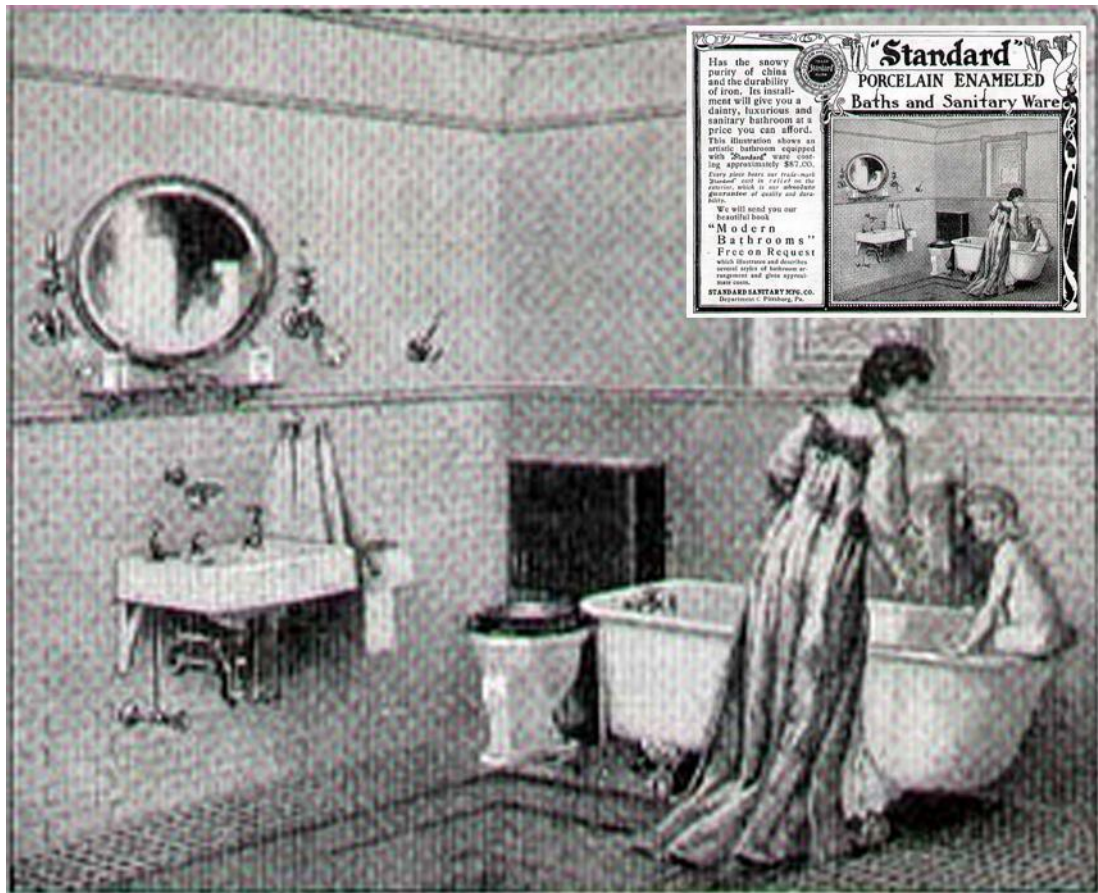


FIGURE 38 Standard Sanitary Mfg. Co.'s ad published in 1903 (Source: Vintage Stitches)

This is an example of middle class bathrooms of 1903. The wall hung rolled rim china wash basin was a standard bathroom solution especially suited to the small bathrooms found in middle-class homes.

The sanitary ware set consists of; a wall hung china wash basin, an enameled cast iron claw foot bathtub and a china toilet. The colours of the set are white and black. The sanitary ware set is installed along two walls of the bathroom. The walls are tile wainscot and above the wainscot are painted. The ceiling has decorative gypsum cornice moulding. The floor is also ceramic tiled.



FIGURE 39 A picture from Standard Sanitary Mfg.Co.'s Catalogue published in 1903 (Source: Asensio 2003)

This is a luxury bathroom example of 1903. It accommodates both bathtub and shower. It also accommodates the fixtures seat bath and foot bath which are not among standard bathroom fixtures.

The sanitary ware set consists of; a pedestal china wash basin, an enamelled cast iron claw foot bath with ornaments, an enamelled cast iron shower, an enamelled cast iron seat bath with ornaments, an enamelled cast iron foot bath with ornaments and a china toilet in its own private enclosure. The colour of the set is white. The sanitary ware set is installed along three walls of the bathroom. The walls are tile wainscot and the rest is decorated with pilasters, murals and lighting fixtures. The ceiling has decorative gypsum cornice moulding. The floor is also tiled.

3.1.3 Examples of Sanitary Ware Products in 1910s



FIGURE 40 Bathroom Interior by the J.L. Mott Iron Works 1911 (Source: New York Public Library Digital Catalogue)

In the above bathroom from 1911, the sanitary ware set consists of; a pedestal lavatory with two wash basins, a porcelain enamelled cast iron bathtub, a porcelain enamelled cast iron seat bath, a porcelain bidet and toilet. The colour of the set is white. The bathtub also serves as a shower by the help of the shower curtain. The sanitary ware set is installed along three walls of the bathroom. The walls are tile wainscot and above are painted. The ceiling has decorative gypsum cornice moulding and a pendant lighting fixture. There are also appliquéés at the sides of the mirror for additional lighting. The floor is tiled with carpet laid on it. This is a luxury bathroom example differentiating with the use of bidet.

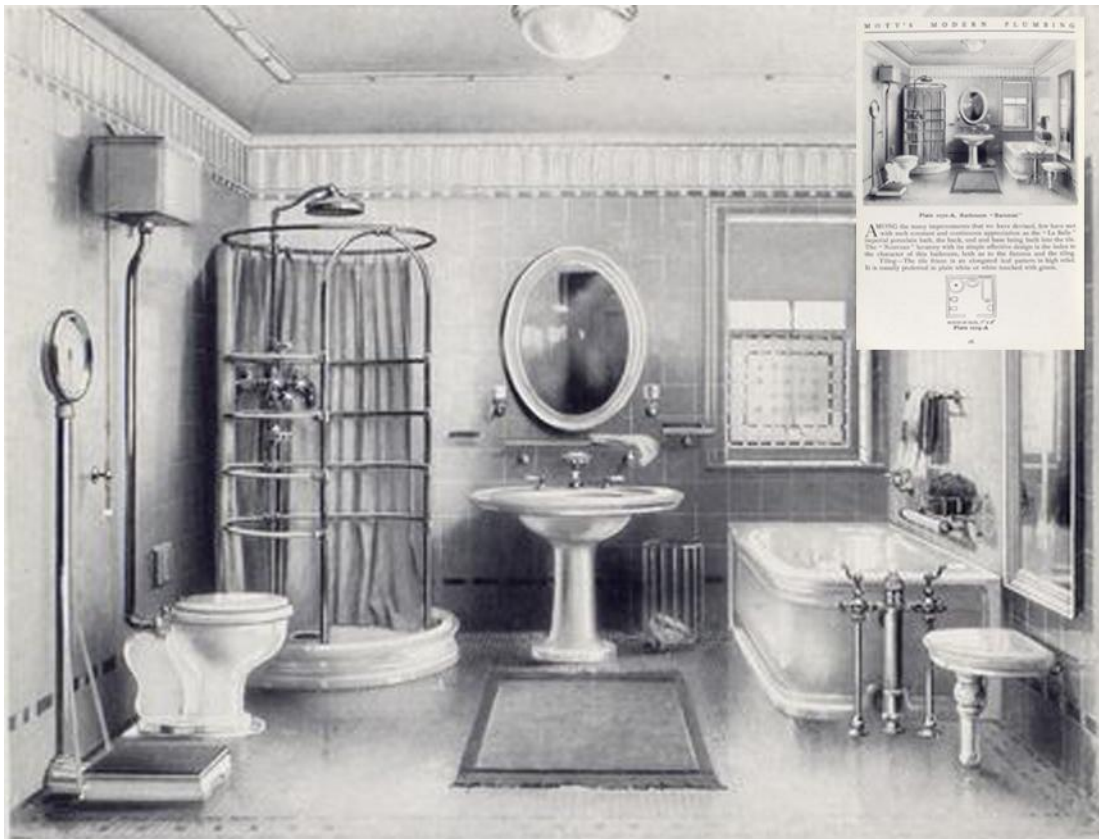


FIGURE 41 Bathroom Interior by the J.L. Mott Iron Works 1911 (Source: New York Public Library Digital Catalogue)

Another bathroom from 1911 seen above has the sanitary ware set consisting of; a pedestal wash basin, a porcelain enamelled cast iron bathtub which is fixed to the wall, a porcelain enamelled cast iron shower and a porcelain toilet with cistern. The colour of the set is white. The bathroom also occupies a scale and a porcelain dressing table. The sanitary ware set is installed along three walls of the bathroom. The walls are tiled floor to ceiling. The ceiling has decorative gypsum cornice moulding and a ceiling lighting fixture. There are also appliques at the sides of the mirror for additional lighting. The floor is tiled with rug laid on it. This example is a luxury bathroom differentiating with the use of dressing table, the existence of scale and the shape of the pedestal washbasin.

3.1.4 Examples of Sanitary Ware Products in 1920s



FIGURE 42 Standard Sanitary Mfg. Co.'s ad published in 1923 (Source: Vintage Stitches)

The sanitary ware set consists of; a wall hung wash basin, a porcelain enamelled cast iron bathtub and a porcelain toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The basic fixtures are used in a small bathroom providing the basic needs. The wash basin seems to be produced especially for small bathrooms. The walls are tile wainscot and above are painted. The floor is tiled with a small rug laid on it. The appliquéés at the sides of the mirror are used for lighting. This is a small bathroom example of 1920s.

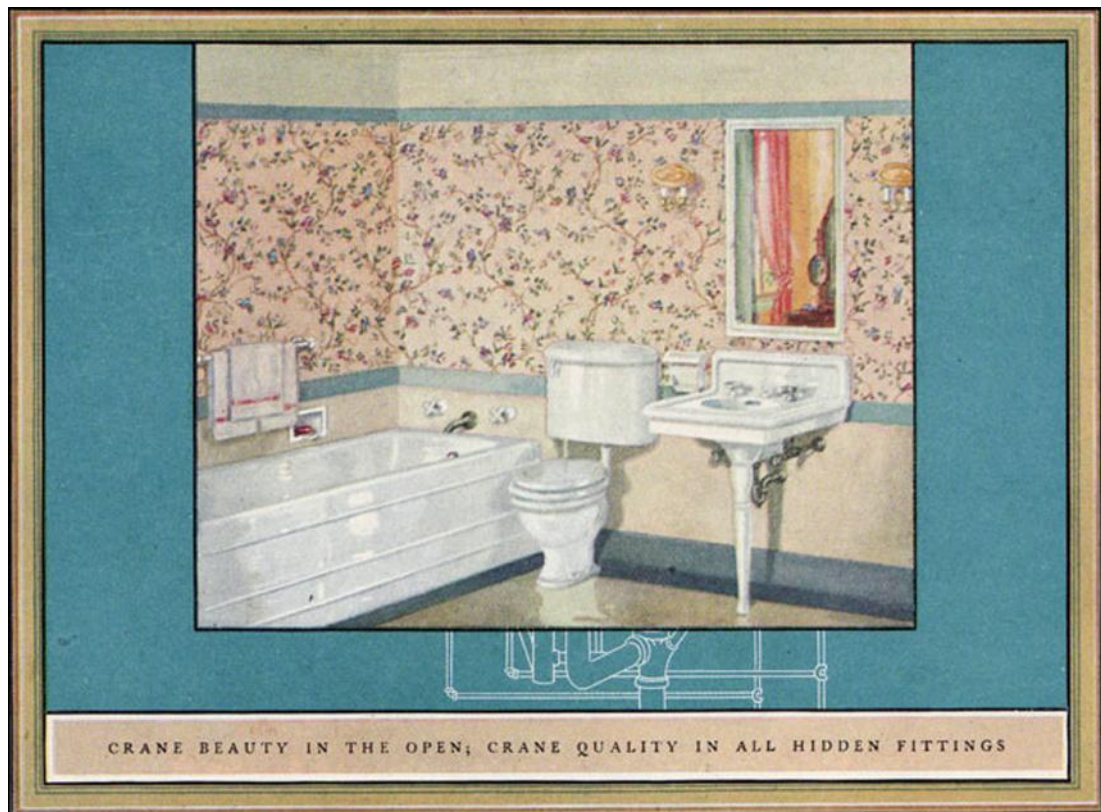


FIGURE 43 Crane Bathroom Ad 1925 (Source: Antique Home Style)

The illustration above is an example of middle class bathrooms of 1920s. The sanitary ware set consists of; a pedestal wash basin, an enameled bathtub and a vitreous china toilet. The colour of the set is white. The sanitary ware set is all installed along one wall of the bathroom. The walls are painted in dual colours and floral wallpaper is used. There's linoleum flooring. Appliqués are used at the sides of the mirror for lighting. Minor accessories like towel rack and soap dish are used supporting functionality. The basic fixtures are put in a simple order suiting the needs. Shiny clean surfaces are emphasized in the illustration.

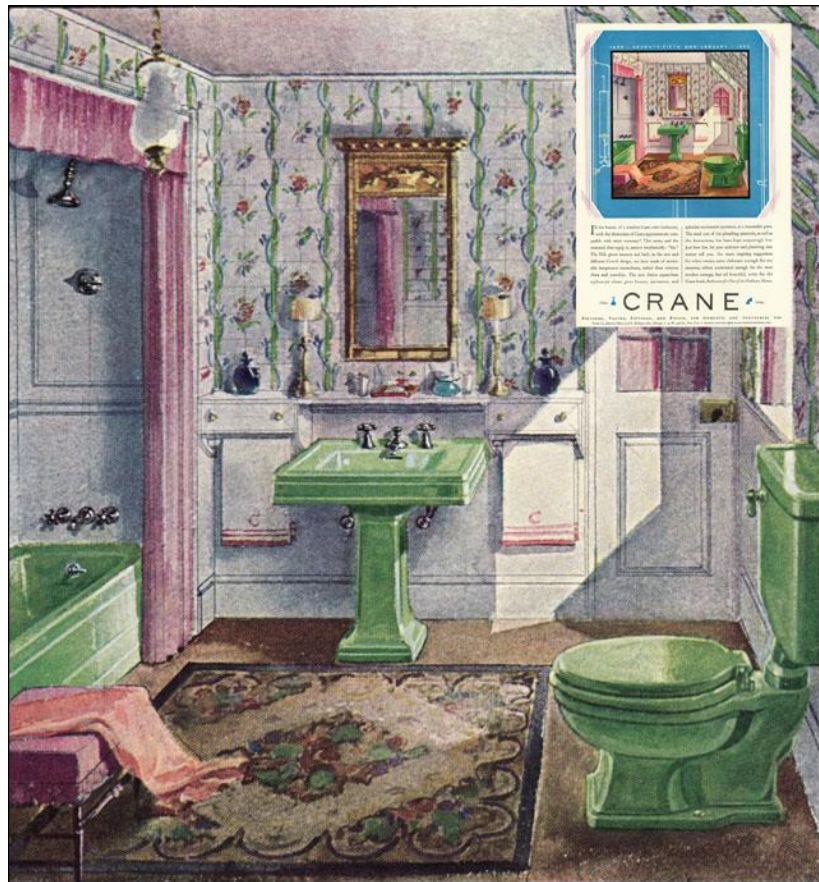


FIGURE 44 Crane Bathroom 1929 (Source: Antique Home Style, Vintage Stitches, American Vintage Home)

The sanitary ware set consists of an enamelled pedestal wash basin, an enamelled bathtub and a square based siphon-jet vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is green. The sanitary ware set is installed along three walls of the bathroom. The walls are tile wainscot and above are covered with floral wallpaper. The ceiling is painted white and has a pendant lighting fixture. The floor is linoleum covered with a large carpet laid on it. Table lamps are used over the shelves at the sides of the mirror for additional lighting.

This ad was published in American Home Magazine in 1929 and it was also published in company catalogue in 1930.



FIGURE 45 Wolff Bathroom 1929 (Source: Antique Home Style)

Another bathroom example from 1929 shows us, a sanitary ware set consisting of; a pedestal wash basin, an enamelled bathtub and a vitreous china toilet. The toilet is located in a niche and the bathtub has a round corner for installing the tub on the corner. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is ivory. The sanitary ware set is installed along two walls of the bathroom. The walls are tile wainscot which is higher in the bathtub area at shower curtain height. Wallpaper is covered above the tile wainscot. Appliqués are used at the sides of the mirror for lighting. The floor is also tiled a carpet and a rug are laid on it.

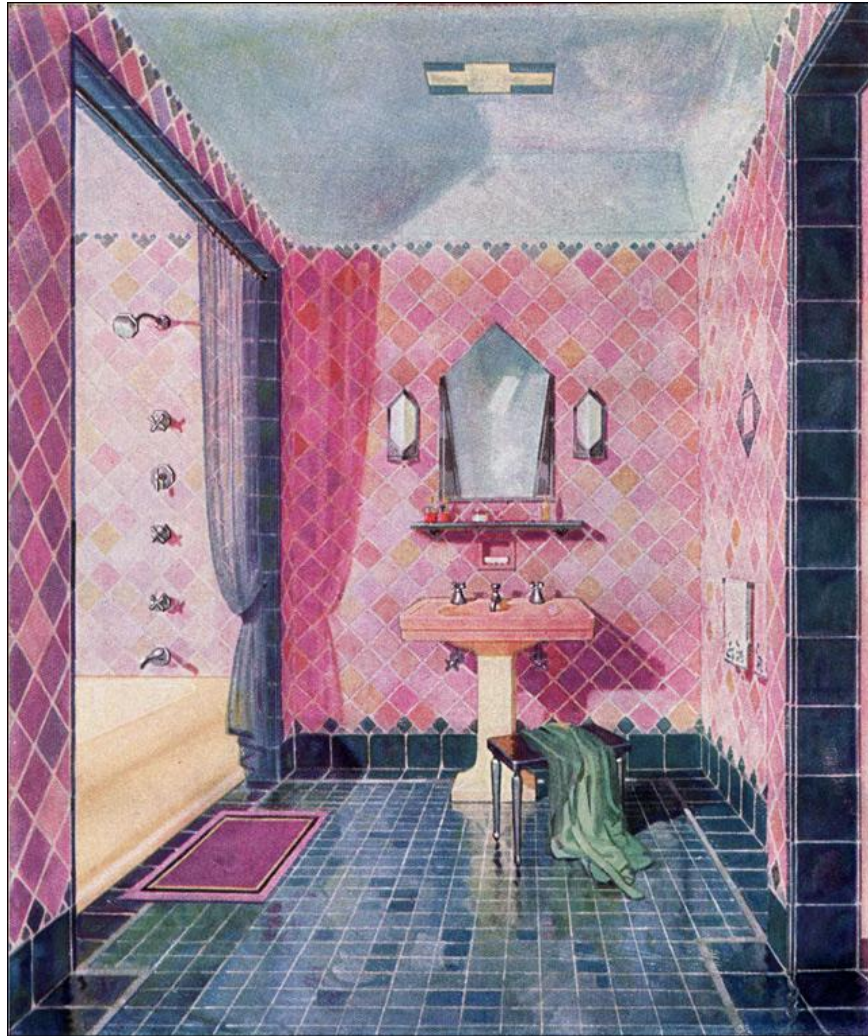


FIGURE 46 Kohler Bathroom 1929 (Source: Skinner 1998)

The sanitary ware set consists of a pedestal wash basin, an enamelled cast iron bathtub. The bathtub is located in a niche and it also serves as a shower by the help of the shower curtain. The toilet is probably located in its own private enclosure. The colour of the set is pink. The sanitary ware set is installed along one wall of the bathroom. The walls are floor to ceiling vibrant pink tiled. Appliqués which match the shape of the mirror are used at the sides of the mirror for lighting. An embedded soap dish under the shelf companies the wash basin. The floor is also tiled. The ceiling is light blue painted with light blue gypsum cornice moulding.



FIGURE 47 Crane Bathroom 1929 (Source: Antique Home Style)

A classical style influenced bathroom of 1929 has the sanitary ware set consisting of; a pedestal wash basin, an enameled bathtub and a vitreous china toilet. The bathtub is located in a niche and it also serves as a shower by the help of the shower curtain. The toilet is located in its own private enclosure. The colour of the set is black. The sanitary ware set is installed along two walls of the bathroom. The walls are marble in wet and painted. The ceiling is vaulted and decorated with murals. The floor is marble with a carpet laid on it.

3.1.5 Examples of Sanitary Ware Products in 1930s



FIGURE 48 Standard Sanitary Mfg. Co.'s ad published in 1930 (Source: Vintage Stitches)

In the above example from 1930, the sanitary ware set consists of; a pedestal wash basin, an enamelled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is Ming Green. The sanitary ware set is installed along two walls of the bathroom. The walls are tile wainscot which is higher in the bathtub area at shower curtain height. Above the green tile wainscot are painted pale pink. Appliqués are used at the sides of the mirror for lighting. The ceiling is painted pink and it has green gypsum cornice moulding which matches the green sanitary ware and wall tiling. The floor is also tiled but not in green.

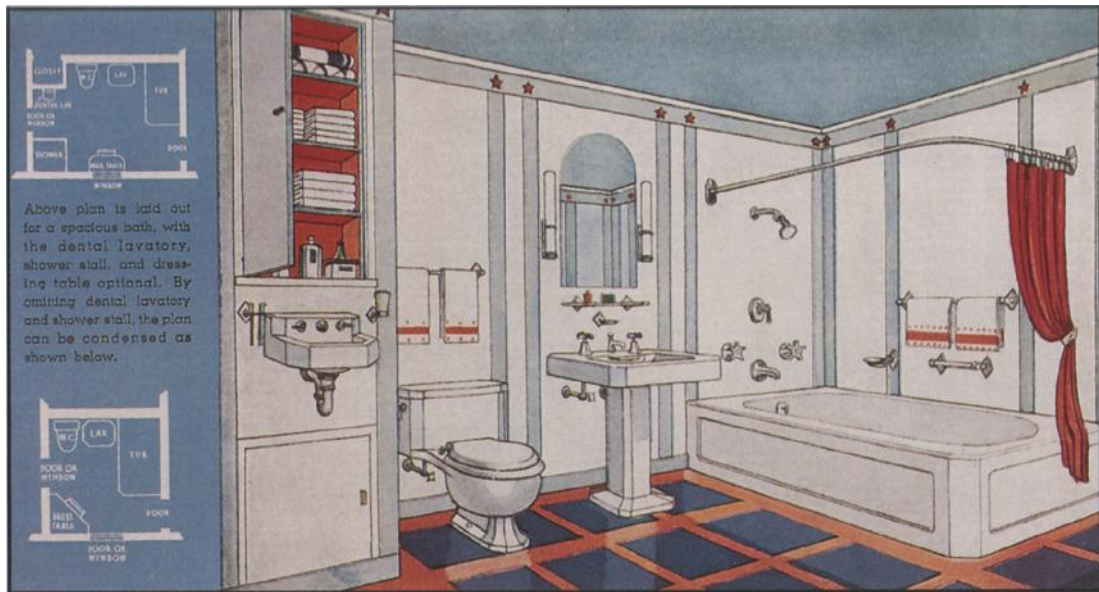


FIGURE 49 Kohler Bathroom1936 (Source: Skinner 1998)

In the example above, the sanitary ware set has optional layouts. The bathroom can accommodate dental lavatory and shower in larger version and in the condensed version only has the basic fixtures.

The sanitary ware set consists of; a pedestal wash basin, a wall hung dental wash basin, an enamelled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The walls are painted white with blue vertical stripes. Appliqués are used at the sides of the mirror for lighting. The ceiling is painted blue. The floor is linoleum.

The dental lavatory is introduced by Kohler in 1930s as a modern necessity; they were small sinks providing “double bathroom usefulness” and aiding children in the quest for healthier teeth and gum (Skinner 1998).

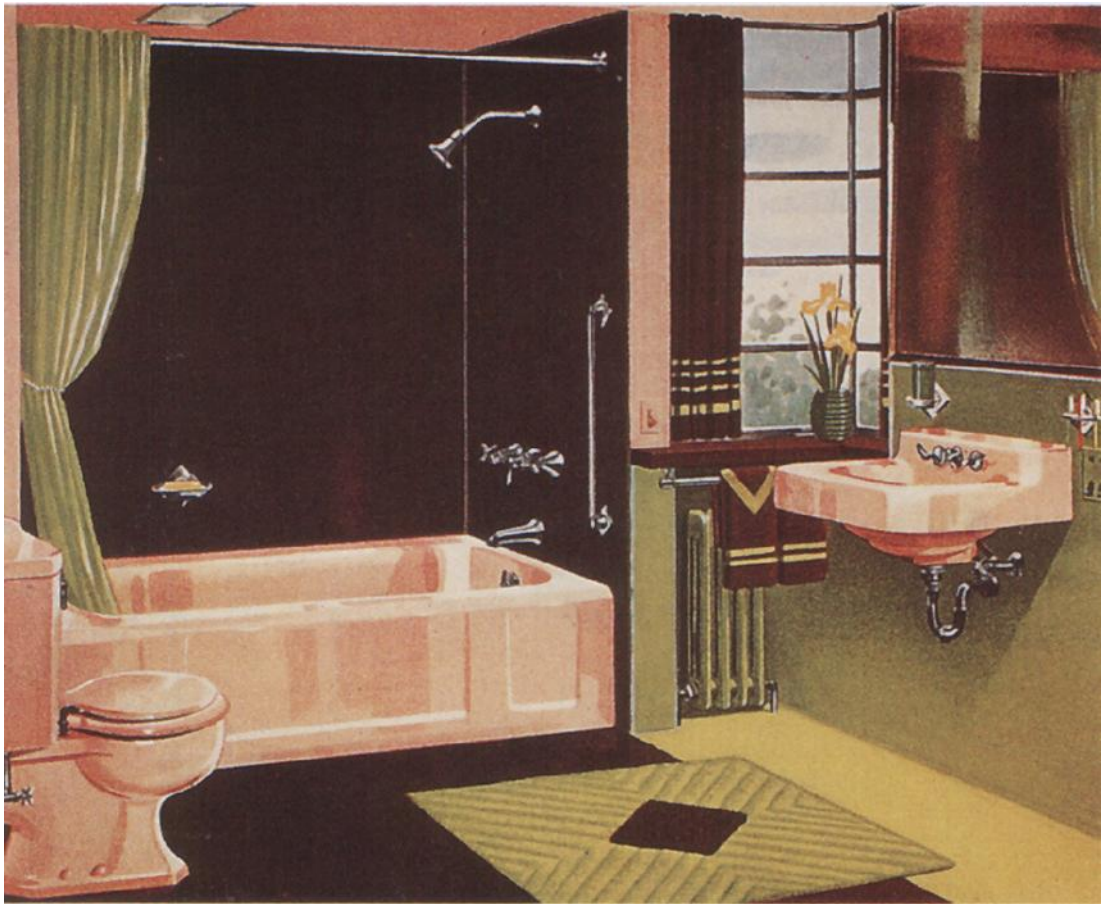


FIGURE 50 Kohler Bathroom 1938 (Source: Skinner 1998)

This bathroom was defined by Kohler as “A good example of what can be done with medium-priced fixtures”.

The sanitary ware set consists of; a wall hung wash basin, an enameled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is pink. The sanitary ware set is installed along two walls of the bathroom. The basic fixtures are used in the bathroom providing the basic needs. The walls are painted in three colours; olive green, pink and maroon, the ceiling is also painted pink. The floor is olive green and black linoleum with a matching rug laid on it.

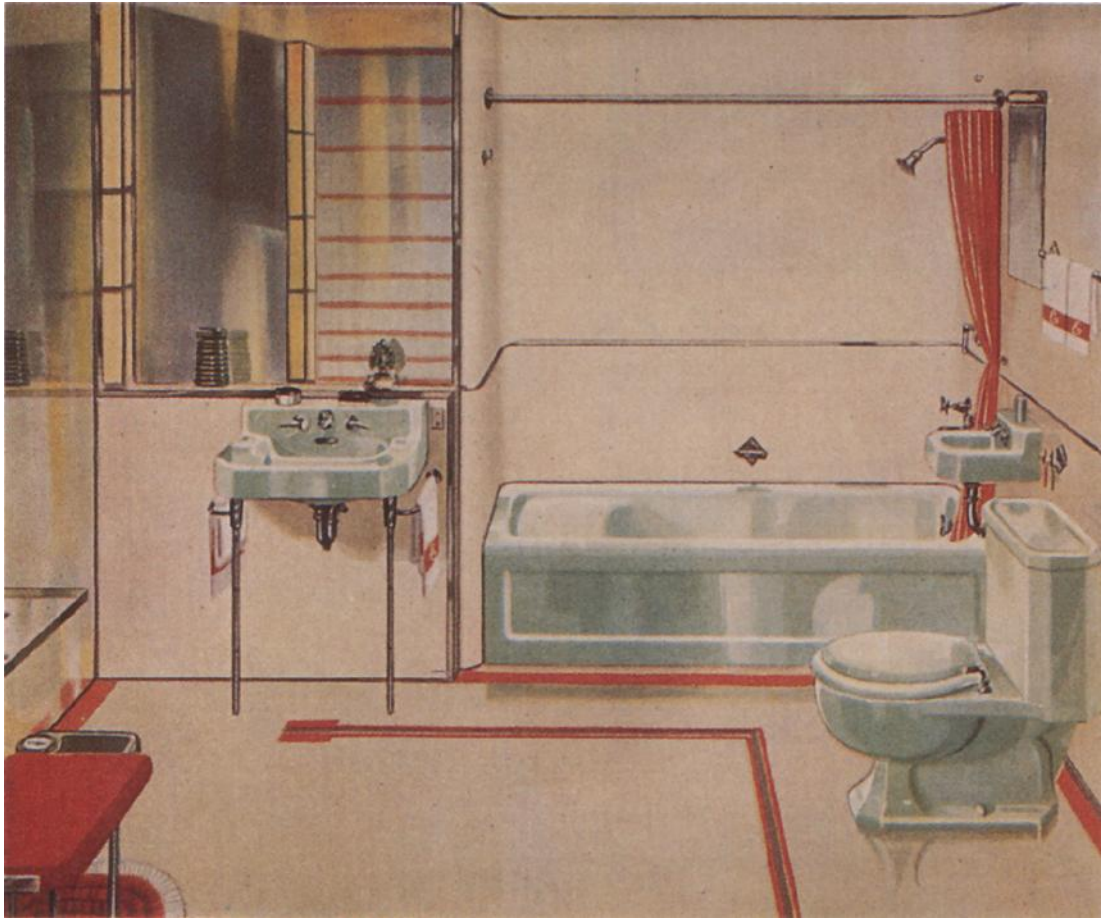


FIGURE 51 Kohler Bathroom1938 (Source: Skinner 1998)

The sanitary ware set consists of; a wash basin with metal legs and towel rack, a wall hung dental wash basin, an enameled metric bathtub with recessed seat and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is pale blue. The sanitary ware set is installed along two walls of the bathroom. Large mirrors are used on the walls. The floor is linoleum. There are also a vanity desk and a bathroom scale in the room. A rug is placed under the vanity desk.

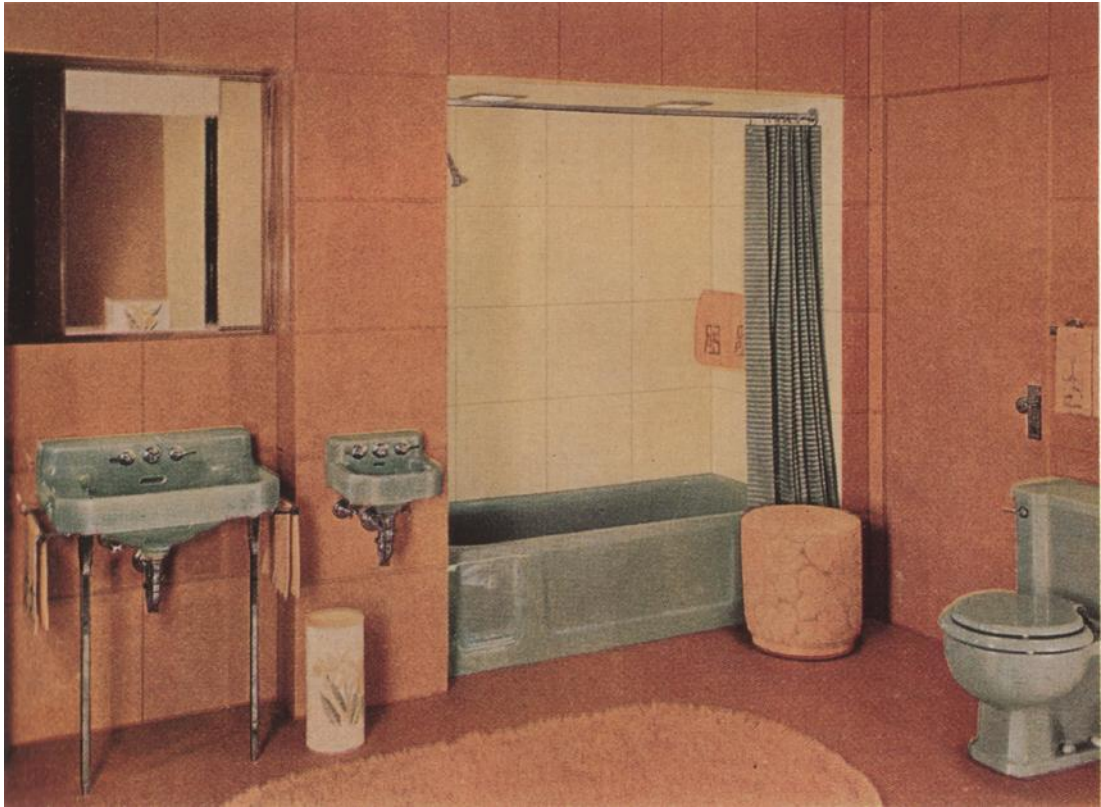


FIGURE 52 Kohler Bathroom1939 (Source: Skinner 1998)

The bathroom example from the late 1930s accommodates a sanitary ware set consisting of; a wash basin with metal legs and towel rack, a wall hung dental wash basin, an enameled bathtub and a vitreous china toilet. The bathtub is placed in a niche and it serves as a shower by the help of the shower curtain. The colour of the set is pale blue. The sanitary ware set is installed along two walls of the bathroom. The walls are tiled from floor to ceiling. The floor is pink linoleum and the rug on it is also pink.



FIGURE 53 Kohler Bathroom1939 (Source: Skinner 1998)

The sanitary ware set consists of a wall hung wash basin, an enamelled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The walls are paint wainscot and above are covered with wallpaper. The floor is linoleum. The appliqués at the sides of the mirror are used for lighting. The disappearing step helps children to reach the wash basin.

3.1.6 Examples of Sanitary Ware Products in 1940s

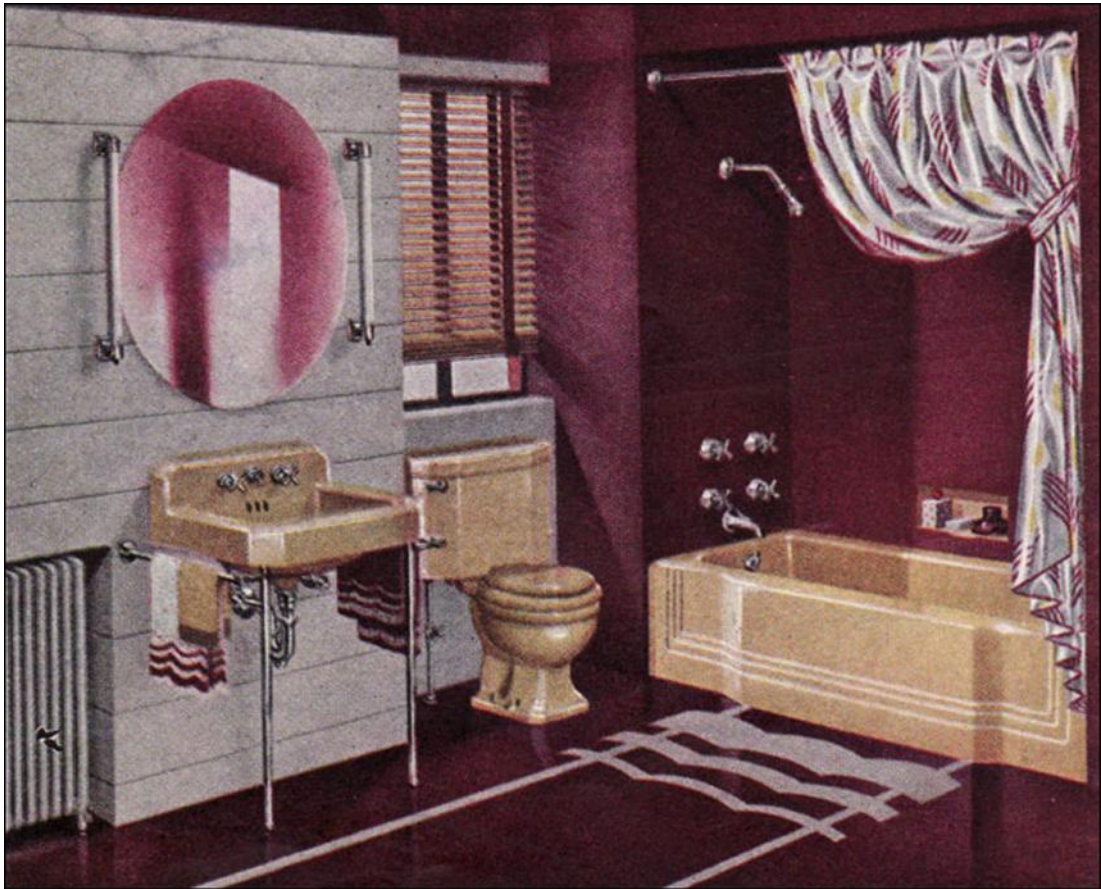


FIGURE 54 American Standard Bathroom 1941 (Source: Mid Century Home Style)

In the above example from 1941, the sanitary ware set consists of; a wash basin with metal legs and towel rack, an enamelled bathtub and a vitreous china toilet. The bathtub is placed in a niche and it serves as a shower by the help of the shower curtain. The colour of the set is beige. The sanitary ware set is installed along one wall of the bathroom. Some parts of the wall are tiled horizontally in grey, from floor to ceiling and the other parts including the ceiling are painted in eggplant colour. Appliqués are used at the sides of the round shaped mirror for lighting. The floor is patterned linoleum. A radiator is installed in a niche. This ad has appeared in *American Home* magazine in 1941.

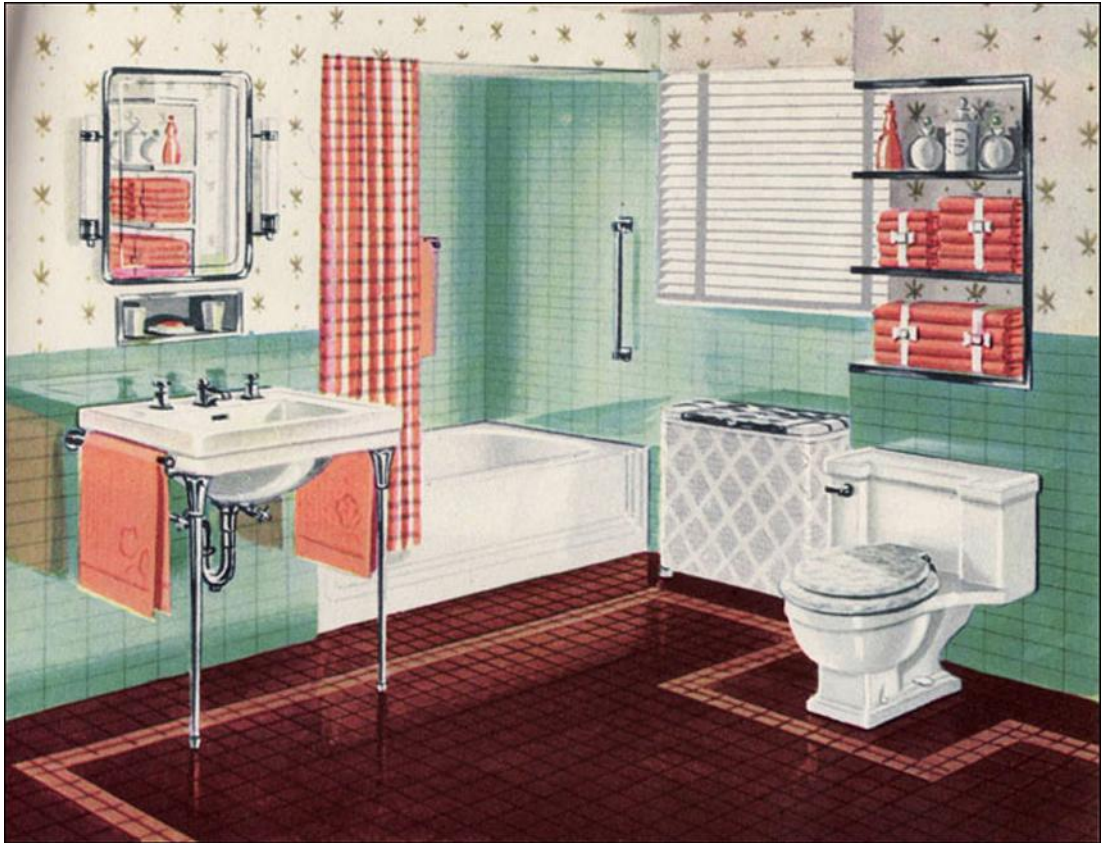


FIGURE 55 American Standard Bathroom 1942 (Source: Mid Century Home Style)

The sanitary ware set consists of; a wash basin with metal legs and towel rack, an enamelled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The walls are tile wainscot which is higher in the bathtub area at shower curtain height. Above the tile wainscot are covered with wallpaper. Appliqués are used at the sides of the mirror for lighting. The floor is tiled in maroon with pink border tiles. This image was from an article in American Home Magazine.



FIGURE 56 Briggs Bathroom 1945 (Source: Mid Century Home Style)

The large bathroom example from 1945 which is illustrated above accommodates a sanitary ware set consisting of; two wash basins with metal legs and towel rack, an enameled bathtub and a vitreous china toilet in its private enclosure which is separated by a folding sliding door. The bathtub also serves as a shower by the help of the sliding glass door. A special soap dish is installed above the wash basin below the sink. The colour of the set is blue. The sanitary ware set is installed along two walls of the bathroom. The walls are peachy yellow decorated with horizontal lines. Appliqués are used at the sides of the huge mirrors and canister lighting is preferred on the ceiling. The ceiling is painted white. The floor is patterned linoleum in bright red and dark blue with peachy yellow stripes. A round white rug which has blue and red striped border is placed by the bathtub.



FIGURE 57 Crane Bathroom 1946 (Source: Mid Century Home Style)

The sanitary ware set of Crane Bathrooms from 1946 consists of; a wash basin with metal legs and towel rack, an enamelled bathtub and a vitreous china toilet. The bathtub is installed in a niche surrounded by wood cabinetry and it also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The walls are covered with wallpaper except for the bathtub area. The bathtub area is a tiled in yellow and has a glass brick window to bring the sun light in. Appliqués are used at the sides of the mirror for lighting. The ceiling is painted in white and it has black wood cornice with yellow stripes. The floor is gray marbled linoleum tile with gray and black bordering.

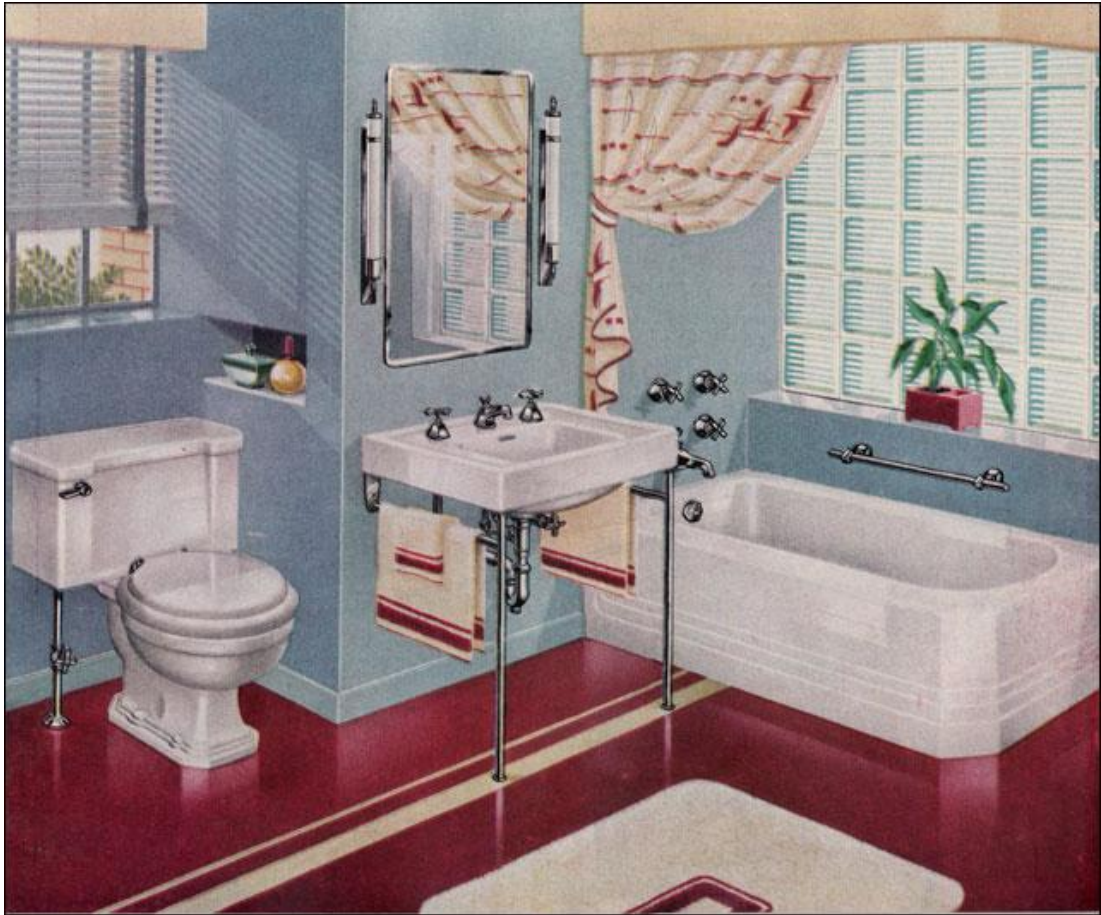


FIGURE 58 American Standard Bathroom 1947 (Source: Mid Century Home Style)

A simple bathroom solution example from 1947 is illustrated above. American Standard sanitary ware set consists of a wash basin with metal legs and towel rack, an enameled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along one wall of the bathroom. The walls are painted in blue. A glass brick window brings the sun light in the bathtub area. The window over the toilet also brings sunlight in ensuring privacy by venetian blinds. Appliqués are used at the sides of the mirror for lighting. The floor is burgundy coloured linoleum with beige stripes.



FIGURE 59 American Standard Bathroom 1948 (Source: Mid Century Home Style)

The American Standard sanitary ware set from 1948 consists of; a wash basin with metal legs and towel rack, an enamelled corner bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is pink. The sanitary ware set is installed along one wall of the bathroom. The walls have built-in cabinetry designed as a complete set with vanity desk. The floor and one wall is grainy patterned gray linoleum. A light green tufted rug is placed in the middle of the bathroom. A medicine cabinet which has sliding mirror doors is placed above the wash basin.

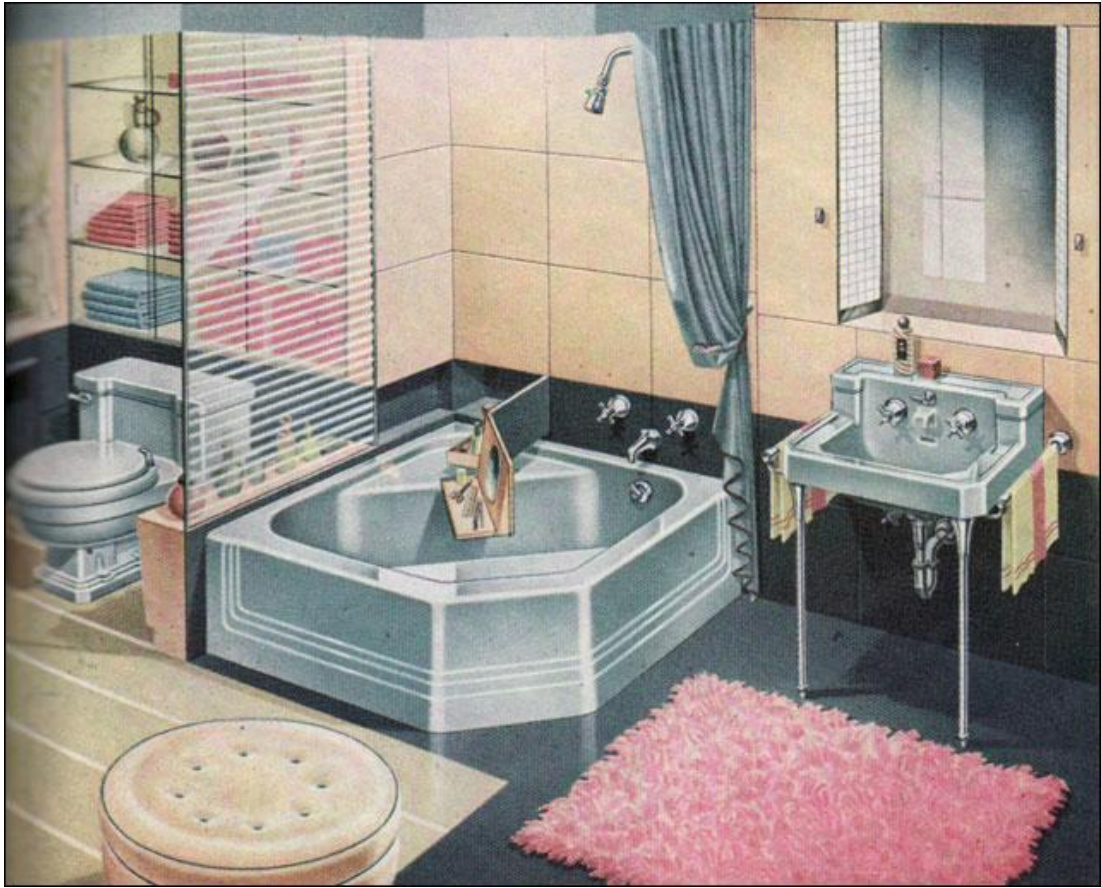


FIGURE 60 American Standard Bathroom 1948 (Source: Mid Century Home Style)

The sanitary ware set consists of; a wash basin with metal legs and towel rack, an enamelled corner bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is blue. The sanitary ware set is installed along one wall of the bathroom. The walls are black and pink tiled. The floor is partially solid black linoleum and partially beige and white striped linoleum. The room is decorated with a pink ottoman, a tufted rug and built-in glass shelving unit; displaying and storing perfume bottles and towels. The mirror is in a niche which has embedded lighting at the sides. A striped glass separator between the bathtub and toilet gives the toilet some privacy.

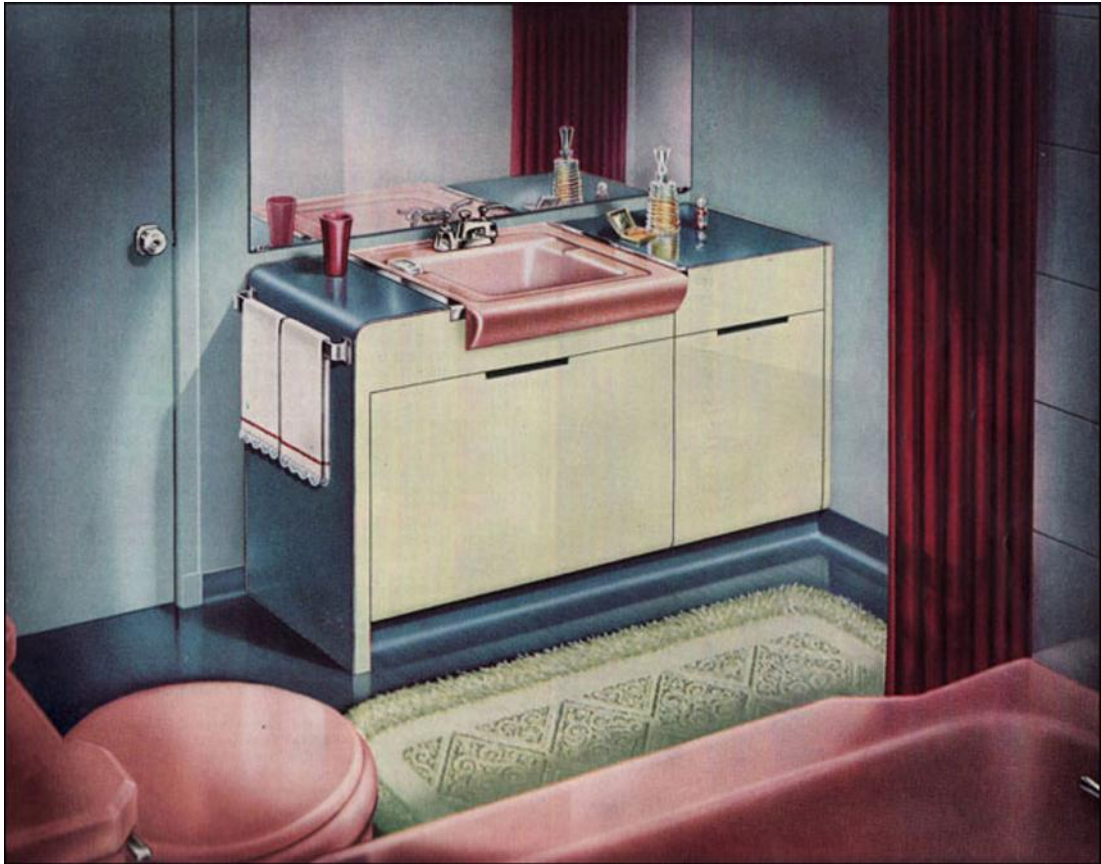


FIGURE 61 American Standard Bathroom 1949 (Source: Mid Century Home Style)

The above illustration of American Standard Bathroom from 1949 differs with its remarkable built-in wash basin and the modern cabinet design. The sanitary ware set consists of; a semi recessed built-in wash basin, an enamelled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is pink. The sanitary ware set is installed along two walls of the bathroom. The walls are painted in blue except for the tiled bathtub area. The floor is dark blue linoleum and with a decorative rug laid on it.



FIGURE 62 Crane Bathroom 1949 (Source: Mid Century Home Style)

In the above example from 1949, the sanitary ware set consists of; a wall hung wash basin, an enamelled bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The wash basin seems to be produced especially for small bathrooms. The bathtub is installed in a niche which is entirely tiled. The walls are tile wainscot and above are striped wallpaper except for the bathtub niche and the window region. The floor is black linoleum which has bright pink border. A red tufted rug is put on the floor. An appliqué placed over mirror is used for lighting. A radiator is installed in a niche under the window. This bathroom is moderately decorated fulfilling the basic needs.

3.1.7 Examples of Sanitary Ware Products in 1950s

**FOUR'S NOT A CROWD
IN THIS BATHROOM**



CRANE'S "T" bathroom combines eye-appeal with economy and provides maximum privacy for the one-bathroom home.



For members of your family in this picture and imagine how wonderful it would be to have a bathroom that is three rooms in one. The use of concealable sliding doors permits you to achieve privacy in any section. Six can bathe while dad shaves and mother dresses her hair! No traffic problems at breakfast time for this family. This is but one of endless possibilities in bathroom arrangement that the "T" plan makes practical. Crane fixtures are styled and priced to match any of these possibilities, as well as any other different bathroom plans you may have. But, don't settle for less than the finest—visit us Crane, the preferred plumbing. Crane Co., General Office, 336 N. Michigan Ave., Chicago 5, Ill.

For more information? For "T" bathroom specifications sheets that show floor plans, elevations and the materials used in the room shown here, see your local Crane Plumbing Dealer or mail a card to Crane Co., No obligation.

COME TO CRANE FOR IDEAS

FIGURE 63 Crane Bathroom 1952 (Source: American Vintage Home)

The Crane bathroom from 1952 is designed for providing maximum privacy in one bathroom for the whole family. It presents a practical solution for the morning traffic in the bathroom cleverly.

The sanitary ware set consists of two wash basins with metal legs which are combined with a vanity desk, an enamelled bathtub which has sliding glass doors and a vitreous china toilet. The colour of the set is white. The sanitary ware set is installed along a T shaped wall. The walls are tiled in the bathtub section and the wash basin section has wood veneered walls. Appliqués are used at the sides of the mirrors for lighting. The floor is linoleum.



FIGURE 64 Crane Bathroom 1953 (Source: Mid Century Home Style)

In the above award winning bathroom, the simple layout allows multi tasking in a definite space. It also has a spacious effect upon existence of daylight invigorated by mirrors.

The sanitary ware set consists of; two built-in wash basins, an enamelled square bathtub which also serves as a shower and a vitreous china toilet. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom accommodating bathtub and the toilet in their own partitions. The walls are tiled in the bathtub section and the rest is painted. The floor is tiled.



FIGURE 65 American Standard Bathroom 1953 (Source: Mid Century Home Style)

The American Standard sanitary ware set seen above consists of; a wall hung wash basin, an enameled corner bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is pink. The sanitary ware set is installed along two walls of the bathroom. The walls are blue tiled. The floor is grainy patterned gray linoleum. There's a built-in storage cabinet over the toilet and a shelving system integrated with the window and mirror is placed over the wash basin. This bathroom offers a simple and compact solution.



FIGURE 66 Crane Bathroom 1953 (Source: Mid Century Home Style)

The Crane Bathroom illustration above shows a bathroom solution which is designed to be divided into a master bathroom and a family bathroom; by building a wall between the bathtubs in the future.

The sanitary ware set consists of; a built-in wash basin, an enamelled corner bathtub, an enamelled regular bathtub and a vitreous china toilet. The bathtub also serves as a shower by the help of the shower curtain. The colour of the set is white. The sanitary ware set is installed along two walls of the bathroom. The walls are tiled in the bathtub area, there's tile wainscot in some parts and the rest is painted. The floor is tiled linoleum. There's a shelving system over the countertop. A diaper changing table is placed by the glass separator of the square bathtub.

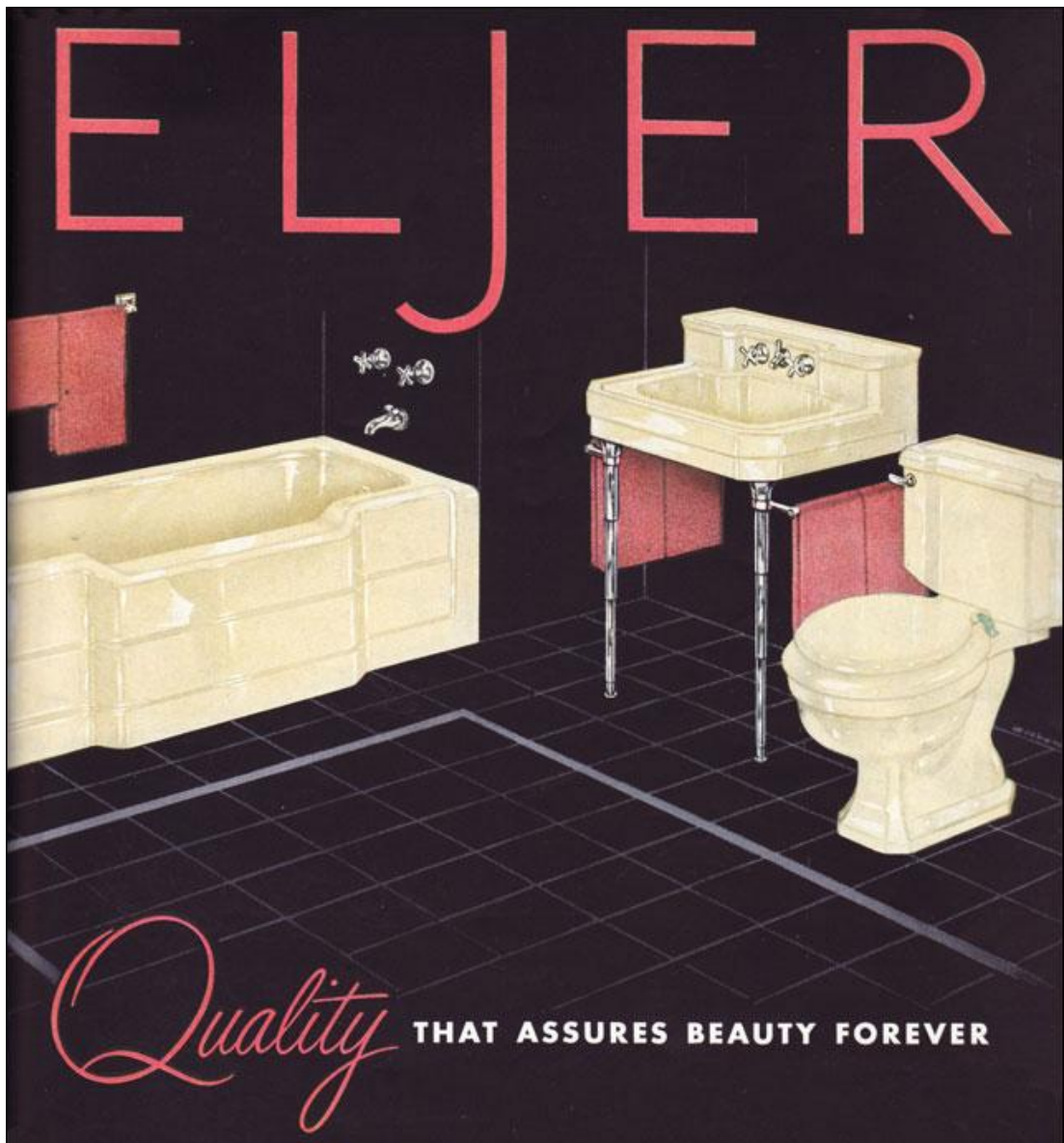


FIGURE 67 Eljer Bathroom 1953 (Source: Mid Century Home Style, American Vintage Home)

This bathroom illustration simply focuses on the sanitary ware. The white fixtures are highlighted by placing on a black background and the typography supports the simple effective presentation of the products. The Eljer sanitary ware set consists of; a wash basin with metal legs and towel rack, an enamelled bathtub and a vitreous china toilet. The colour of the set is white. The sanitary ware set is installed along one wall of the bathroom.



FIGURE 68 Eljer Bathroom 1956 (Source: The American Home magazine 1956 August)

The bathroom in the above illustration was designed as a guest bathroom and an extra bathroom for everyday use.

The sanitary ware set consists of; a built-in wash basin, an enameled bathtub and a vitreous china toilet. Bathtub also serves as a shower by the help of the sliding glass door. The colour of the set is blue. The sanitary ware set is installed along two walls of the bathroom. Bathroom is separated by a folding sliding door to maintain privacy. The walls are tiled in the bathtub area and the rest is painted. The floor is tiled and a carpet is laid on the floor. There's a shelving system over the countertop and there are cabinets under the countertop for storage needs.



FIGURE 69 Crane Bathroom 1958 (Source: Miss Retro Modern)

In the above example from Crane Bathroom in 1958, the sanitary ware set consists of; a built-in wash basin, an enamelled bathtub and a vitreous china toilet. Bathtub also serves as a shower by the help of the curtain. The colour of the set is pink. The sanitary ware set is installed along one wall of the bathroom. The walls are tiled. The floor is also tiled and a tufted pink carpet is laid on the floor.

3.1.8 Examples of Sanitary Ware Products in 1960s

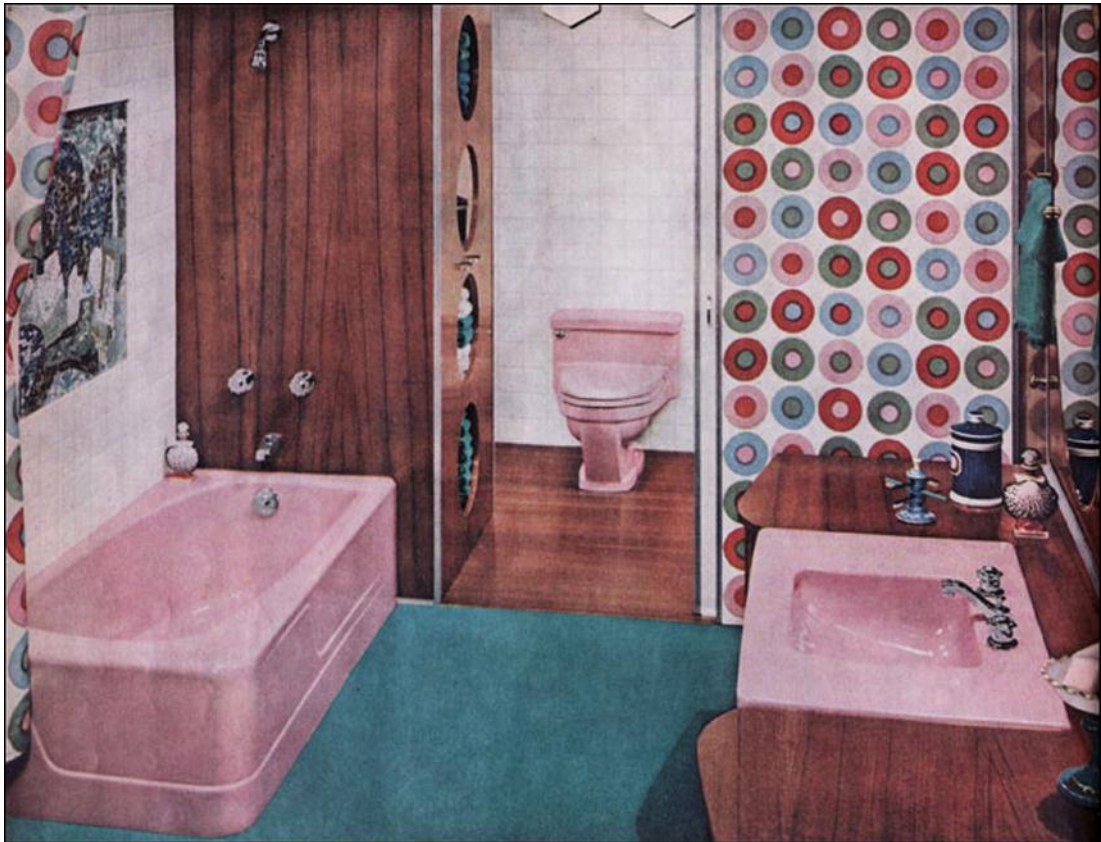


FIGURE 70 American Standard Bathroom 1960 (Source: Mid Century Home Style)

The American Standard sanitary ware set from 1960 consists of; a built-in wash basin, an enamelled bathtub and a vitreous china toilet. Bathtub also serves as a shower by the help of the curtain. The colour of the set is pink. The sanitary ware set is installed along three walls of the bathroom. The walls are tiled and covered with wallpaper. The floor is linoleum and wood. There's a wood veneered cabinet and the countertop is also wood veneered. The toilet is installed in a separate section which has a sliding door.



FIGURE 71 American Standard Bathroom 1960 (Source: Mid Century Home Style)

Another example from American Standard in 1960 has the sanitary ware set that consists of; a built-in wash basin, an enameled bathtub and a vitreous china wall hung toilet. Bathtub also serves as a shower by the help of the curtain. The colour of the set is blue. The sanitary ware set is installed along two walls of the bathroom. The walls are glass mosaic tiled and covered with wallpaper in some parts. The floor is tiled. The countertop is covered with glass mosaic.

By the 1960s wall-hung toilets started to be used widespread.



FIGURE 72 American Standard Bathroom 1961 (Source: Mid Century Home Style)

In the above example from 1961, the sanitary ware set consists of; two wash basins, an enamelled bathtub and a vitreous china wall hung toilet which is located in its own private enclosure. Bathtub also serves as a shower by the help of the curtain. The colour of the set is blue. The sanitary ware set is installed along two walls of the bathroom. The walls are tiled in some parts, covered with wallpaper in some parts and wood veneered in some parts. The floor is linoleum. The wash basin and vanity base combo exemplifies the rise of the use of decorative elements in bathrooms of 1960s.

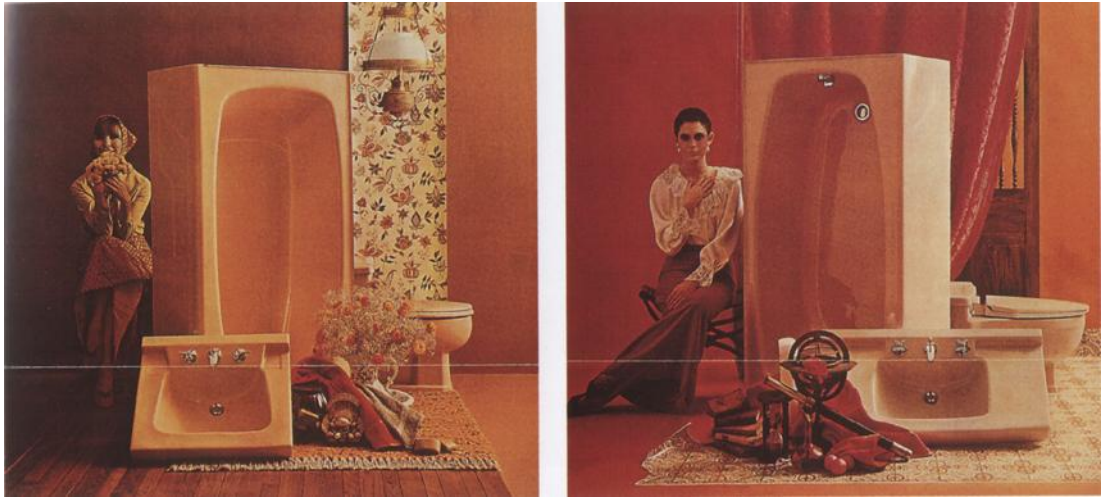


FIGURE 73 Kohler Bathroom 1965 (Source: Skinner 1998)

In Kohler's 1960s ads, the sanitary ware sets started to be displayed individually as an artistic composition rather than placing them in usual bathroom decors. In the above ads the sanitary ware sets are consisting of; a wash basin, an enamelled bathtub and a vitreous china toilet. The colours of the sets are pink.



FIGURE 74 A leaflet catalogue of Eczacıbaşı Vitra from late 1960s (Source: Chamber of Architects Ankara Branch Library)

The catalogue above is one of the first examples of Turkish sanitary ware product catalogues. The Turkish manufacturer Eczacıbaşı's brand Vitra's catalogue shows the product range of the company. The products in the catalogue have simple and clean lines. As seen in the catalogue wall hung toilets and bidets were not in the product range of the company. The products were shown generally in white and the colour options were listed as, pink, lilac, green, blue, yellow and gray.

3.1.9 Examples of Sanitary Ware Products in 1970's

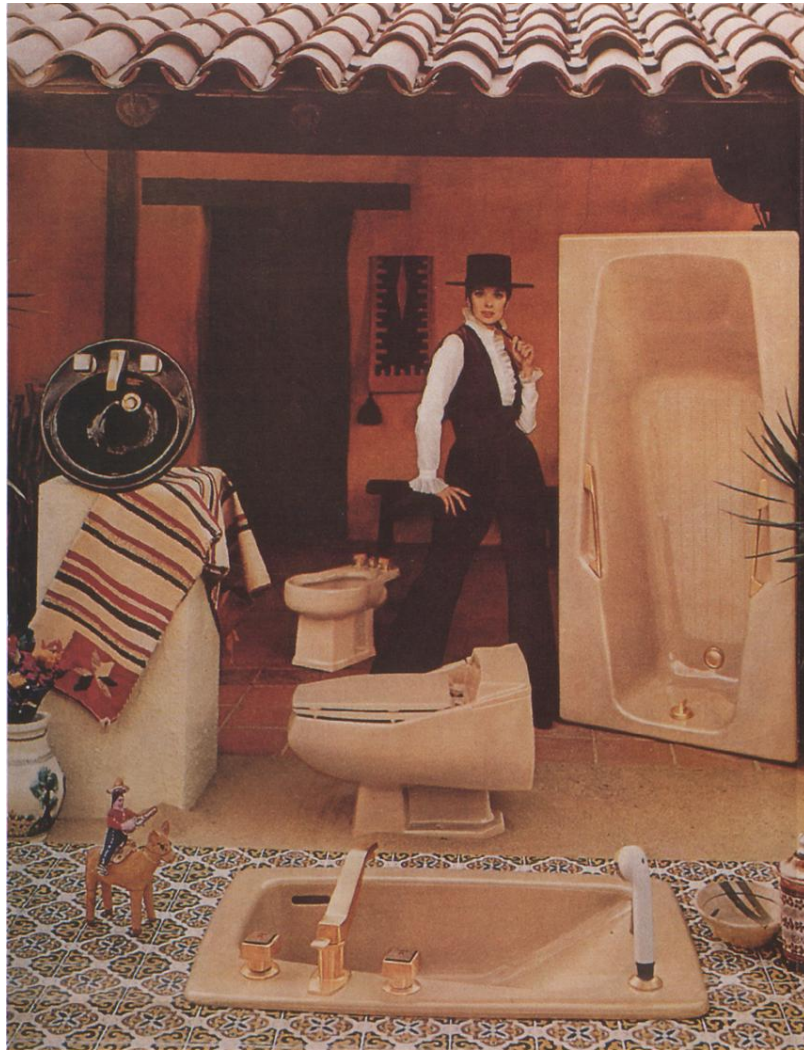


FIGURE 75 Kohler Bathroom 1970 (Source: Skinner 1998)

In the above example from Kohler Bathrooms, the sanitary ware set consists of; a built-in wash basin, an enameled bathtub, a vitreous china toilet and a vitreous china bidet. The colour of the set is pink. The sanitary ware set is displayed individually as an artistic composition as the previous Kohler ads.



FIGURE 76 Cesame Bathroom 1970 (Source: Domus 1970 April, Domus 1970 July)

The first sanitary ware set consists of a wall hung wash basin, a built-in bathtub, a vitreous china toilet and bidet. The colour of the set is beige. The toilet and bidet has an angular look and the wall hung wash basin's angles fit their sharp lines. The sanitary ware set is installed along two walls of the bathroom. The walls are tiled from floor to ceiling by decorative tiles. The floor is also tiled.

The second sanitary ware set consists of a pedestal wash basin, a built-in bathtub and a vitreous china wall hung toilet. The colour of the set is pale green and it has smooth lines. The sanitary ware set is installed along three walls of the bathroom. The walls are tiled from floor to ceiling by decorative tiles. The floor is also tiled.

Both sets are released in the same year offering different options within same context.



FIGURE 77 Kohler Bathroom 1971 (Source: Skinner 1998)

The sanitary ware set consists of; a built-in oval wash basin, a bathtub and a vitreous china toilet. Bathtub also serves as a shower by the help of the curtain. The sanitary ware set is installed along one wall of the bathroom. The walls are glass mosaic tiled and in the bathtub area regular white tiles are used. The floor is glass mosaic tiled. The options which can be made via colour changes are shown in same layout, same products but different colour schemes. Showing the variations by colour and layouts started to be seen in company presentations.



FIGURE 78 Cesame Bathroom 1974 (Source: Domus 1974 September, Domus 1974 November , Domus 1974 December)

In the above examples from 1974, the options which can be made via colour changes and different layouts are shown by same products with different colour

schemes. This is another example of showing the variations by colour and layouts in company presentations.

The Cesame sanitary ware sets consist of; two pedestal wash basins, a bathtub, a vitreous china toilet and a vitreous china bidet. The sanitary ware sets are installed along two walls of the bathrooms. The walls are white tiled. The floor is also white tiled. The whole set has round smooth lines.



FIGURE 79 Ceramica Dolomite Bathroom 1977 (Source: Domus 1977 January, Domus 1977 February, Domus 1977 July)

In the above examples of Ceramica Dolomite Bathrooms, the sanitary ware sets consist of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The options which can be made via colour changes are shown by same products. The products are shown without bathtub and a layout in a bathroom. When the bathtubs started to be produced from acrylic, the ads started to show just wash basin, toilet and bidet together. Bathtubs and shower basins were advertised separately and chosen according to the need.



FIGURE 80 Ideal Standard Bathroom Linda Line 1977 (Source: Domus 1977 September)

The sanitary ware set called Linda from Ideal Standard Bathrooms consists of; a wall hung wash basin, a vitreous china toilet and a vitreous china bidet. The sanitary ware set installed along one wall of the bathroom. The walls are white tiled. The floor is also white tiled. The whole set has round smooth lines. The bathtub is not shown with the set. The set is combined with green fixtures and accessories set.



FIGURE 81 Kohler Bathroom 1978 (Source: Skinner 1998)

The Kohler whirlpool baths of 1978 in the above example featured luxury fittings which were made of solid brass jets and fittings in brushed or polished chrome or 24 carat gold finishes. The built in bath tub is made of acrylic and it is located in the middle of the bathroom. A white vitreous china toilet is seen in a niche. The wash basin seems to be a built in washbasin in the countertop by the door.

The unit with sliding glass doors which is located on the left is called Habitat. It offers a 50 minute cycle of sun, steam and rain using approximately 160 liters of water and four kilowatt hours of electricity. The Habitat was one of the luxury line products of Kohler in late 1970s, there were also more complex and bigger versions offering more luxury (Skinner 1998).

3.1.10 Examples of Sanitary Ware Products in 1980s

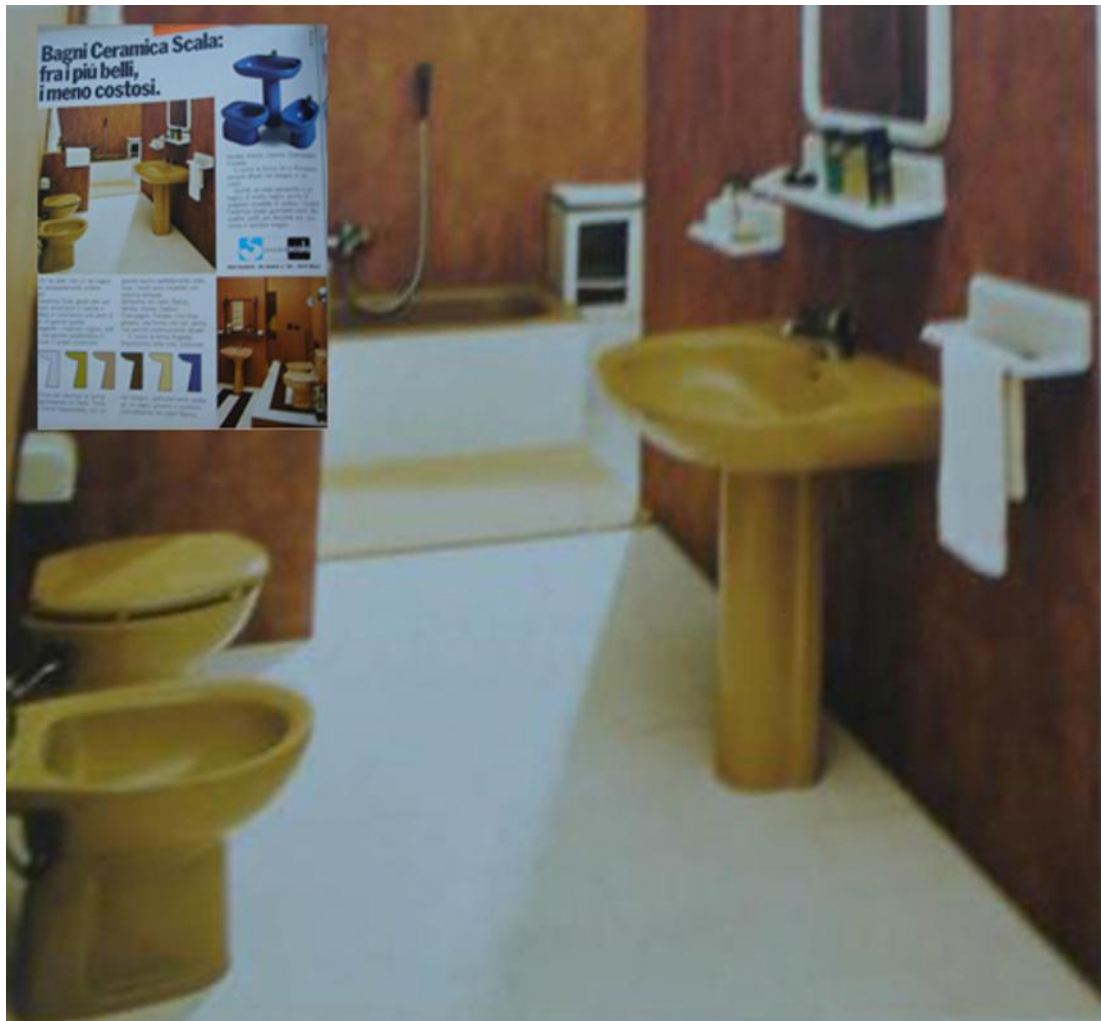


FIGURE 82 Ceramica Scala Bathroom 1980 (Source:DOMUS 1980 August)

The Ceramica Scala sanitary ware set consists of; a pedestal wash basin, a bathtub, a vitreous china toilet and a vitreous china bidet. The sanitary ware set is installed along two walls of the bathroom. The walls are tiled. The floor is also tiled. The colour options of the set are shown in the ad. The wash basin has a wide bowl.



FIGURE 83 Punto&Righe Bathroom 1983 (Source:DOMUS 1983 October)

In the above ad of Punto&Righe Bathroom, the sanitary ware set consists of; a semi recessed built-in wash basin, a bathtub, a vitreous china toilet and a vitreous china bidet. The sanitary ware set is installed along three walls of the bathroom. The walls are tiled. The floor is also tiled. The wash basin has a wide bowl and it is a part of a cabinet set including the mirror and lighting system.



FIGURE 84 Ideal Standard Bathroom (Source: Domus 1987 February)

The Ideal Standard sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white, the available colours listed are sky blue, grey, pink, green, champagne, mink and white. The wash basin is also wide as in the above examples.



FIGURE 85 Ceramica Dolomite Bathroom (Source: Domus 1987 February)

The Ceramica Dolomite sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white. The available colours listed are white, champagne, blue and sky grey. The round forms and dovetail connection of precise contoured volumes diversifies this set from majority of sets with similar lines. The wash basin has a characteristic asymmetrical shelf.



FIGURE 86 Cesame Bathroom (Source: Domus 1987 February)

The Cesame sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white. The available colours listed are white, amber and grey. The set has round peripheral edges which is a common style seen in 1980s among many brands. The wash basin was a wide bowl as seen in most of the wash basin examples of 1980s.



FIGURE 87 Alfana Bathroom (Source: Domus 1987 February)

The Alfana sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white. The set has rectangular top line and parabolic bowls which are trimmed at the sides underneath. The Bases are also rectangular completing the entire look.

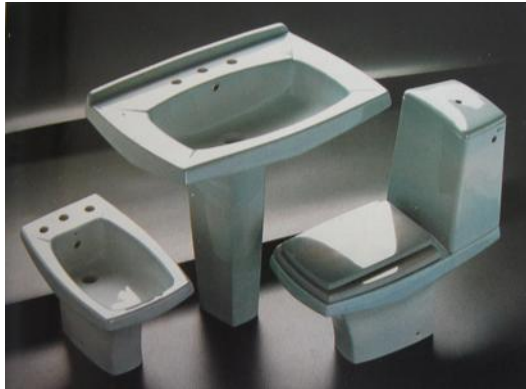


FIGURE 88 Luna Sbordoni Bathroom (Source: Domus 1987 February)

The Luna Sbordoni sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white and it has pastel colour options. The set has characteristic angular lines; the wash basin has a wide and shallow bowl.



FIGURE 89 Tenax Bathroom (Source: Domus 1987 February)

The sanitary ware set above consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white and it has pastel colour options. The set has rectangular lines with smooth curves on the corners; the wash basin has a wide and shallow bowl.



FIGURE 90 Wash basin-Vanity Base Combo Examples: Persona Novello, La perle Dress, Ergo (Source: Domus 1987 February)

The wash basin-vanity base combos started to be used more often in 1980s. In the above figure three examples are shown; two of them has a built in wash basin and one of them is semi recessed built in basin. The semi recessed one is used in small bathrooms allowing storage options in a small space. The combos in 1980s were generally designed as a complete set consisting of; built-in wash basin, cabinetry, mirror and shelves.



FIGURE 91 A leaflet catalogue of Eczacıbaşı Vitra from 1980s (Source: Chamber of Architects Ankara Branch Library)

The Turkish manufacturer Eczacıbaşı's brand Vitra's 1980s catalogue shows the product range of the company. The products in the catalogue are varied according to the firm's 1960s catalogue.

3.1.11 Examples of Ceramic Sanitary Ware Products in 1990s



FIGURE 92 Simi by Tenax (Source: Domus 1991 October)

In the above example from 1991, the sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white. The wash basin has a wide and deep bowl. The set is simple and it has round smooth finishes.



FIGURE 93 Sanitari Pozzi Bathroom Oasi (Source: Domus 1991 October)

The sanitary ware set called Oasi consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white. The wash basin has a wide and deep bowl. The set has sloped slim edges.



FIGURE 94 Vavid-Montini IO Series (Source: Domus 1991 October)

The IO Series sanitary ware set consists of; a wall hung wash basin, a wall hung vitreous china toilet and a wall hung vitreous china bidet. The bathtub is not shown with the set. The colour of the set is white. The wash basin has a wide and deep bowl. The set has sloped slim edges so similar with the above example. The whole set is designed wall hung so that they can be easily cleaned.



FIGURE 95 Villeroy&Boch Bathroom Collezione Zenith (Source: Domus 1991 October)

In the above example from Villeroy&Boch, the sanitary ware set consists of; a pedestal wash basin, a vitreous china toilet and a vitreous china bidet. The bathtub is not shown with the set. The colour of the set is beige. The wash basin has a wide and deep bowl. The wash basin has a metal towel rack attached to the bowl. Toilet has a flush tank has a similar shape with the wash basins pedestal. Circles, semicircles and half cylinders constitute the basic design elements of the set.

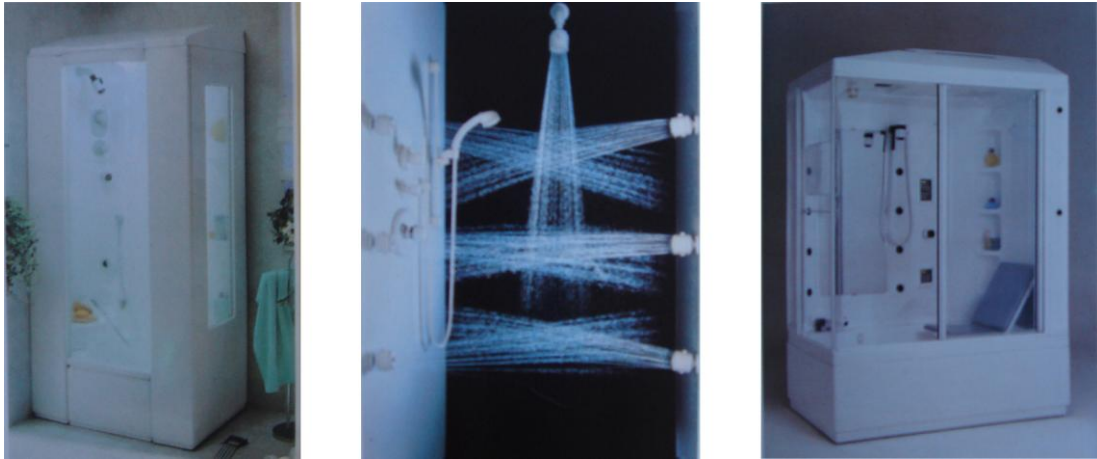


FIGURE 96 Shower examples: Ariston Vitavivva Atollo, Hansa Italiana Sistema Doccia, Teuco Guzzini Vasca Attrezzata Con Sauna (Source: Domus 1990 October)

The sanitary ware sets are completed with a shower or a bathtub. Two of the examples above are compact units and the other is multi nozzle shower jet installed on the walls. The compact shower cells accommodate shower jets, steam jets, radio and even TV. They serve as mini wellness centres in homes. The bathtubs below are also the elements of wellness concept at homes. Bathtubs with hydro massage systems started to be more common in the bathrooms of 1990s.



FIGURE 97 Bathtub Examples: Albatros Prelude Serie Must, Ceramica Dolomite Esedra (Source: Domus 1990 October)

3.1.12 Examples of Ceramic Sanitary Ware Products in 2000s



FIGURE 98 Eczacıbaşı Vitra Bathrooms Espace Series (Source: B+M 2000 April)

The sanitary ware set example from 2000 consists of; a countertop wash basin, a spacious bathtub, a wall hung vitreous china toilet and a wall hung vitreous china bidet. The colour of the set is white. The wash basin is located on a wall hung cabinet system. The washbasin's, toilet's and bidet's bowls has an asymmetrical set up on a rectangular prism base. Wall hung installation of the pieces brings easier cleaning. The room seems to be an advertisement decor hence it is so spacious and has big window with a view. The rooms design and the sanitary ware sets' design contradicts because the Espace Series are designed for saving space. The Espace Series are still in the company's product range in 2010.



FIGURE 99 Eczacıbaşı Vitra Bathrooms Think Hepi Series (Source: Vitra 2006)

In the above example from Vitra's 2006 catalogue, the sanitary ware set consists of; a semi recessed countertop wash basin, a shower basin, a vitreous china toilet and a vitreous china bidet. The colour of the set is white. The wash basin is located on a wall hung cabinet system. This room also seems to be an advertisement decor. It is so spacious and has big windows. The walls are black tiled and white painted.



FIGURE 100 Eczacıbaşı Vitra Bathrooms Form 300 Series (Source: Vitra 2006)

The Form 300 Series which is another example from Vitra's 2006 catalogue is still in the company's product range in 2010. The sanitary ware set consists of; a pedestal wash basin, a bathtub a vitreous china toilet and a vitreous china bidet. The bathtub also serves as a shower by the help of the sliding glass door. The colour of the set is white. The walls are tile wainscot which is higher in the bathtub area. Above the tile wainscot are painted white. The floor is also tiled.



FIGURE 101 Eczacıbaşı Vitra Bathrooms Pidue Series (Source: Vitra 2006)

Vitra Bathrooms Pidue Series sanitary ware set consists of; a semi recessed countertop wash basin, a free standing bathtub. The colour of the set is white. The wash basin is located on a wall hung cabinet system. This room also seems to be an advertisement decor. It is so spacious and has big windows. The walls are black tiled and white painted. The floor is also tiled. The counter top wash basin has a conic bowl with an elliptical base, the bathtub is also elliptical.



FIGURE 102 Laufen Bathroom Mimo Serie (Source: Laufen)

The Mimo Serie by Laufen consists of; a built-in wash basin, a vitreous china toilet and a vitreous china bidet. The colour of the set is white completed with black accessories. It has colour option pink instead of black and many other combinations in Mimo Series catalogue. The wash basin is located on in wall hung cabinet system. Next to the wash basin vanity combo another wall hung cabinet for storage is installed. The Mimo Serie has a compact and stylish look and it is suitable for small bathrooms. The defining phrase in Laufen's site for Mimo is "a small bathroom with a star personality".



FIGURE 103 Rapsel Bathroom Larch Wood Collection (Source: Rapsel)

Rapsel Bathroom Larch Wood Collection consists of; a wall hung wash basin a shower basin and a vitreous china toilet which is covered by wooden accessories. The fixtures are disappearing by the fine quality larch wood covers. The wash basin is made of stainless steel with cover in solid larch wood. The ceramic toilet has a drawer on its left side which also serves as bench. The shower basin is also made of stainless steel covered with solid larch wood. The wooden covers transform usual bathroom into a sophisticated minimalist bathroom.

3.1.13 Discussion

The ceramic sanitary ware design styles in the late 1800s were affected by eclecticism and the products were over decorated as seen in the figures 25, 26 and 27. This tendency disappeared through 1910s by the restrictions of mechanization and the changing design considerations, simple effective white sets were produced. It was hard to match the colour of vitreous china toilet and wash basin with enamelled bathtub. In the early examples of bathrooms placing the toilet in its own private enclosure or nook was preferred, but due to size constraints it was not so common in middle-class homes. Two examples in figures 38 and 39 depict the differences between middle-class bathrooms and luxury bathrooms.

By means of the developments in the colour matching technology vibrant colours started to be used in bathrooms starting from 1929. Formerly vitreous china glazes and cast iron enamels were not possibly matched perfectly. In late 1920s by the perfection of colour matching technology coloured sets started to be seen more as seen in the figures 44, 45, 46 and 47. The single post pedestal wash basins were popular in the bathrooms of 1920; different brands' pedestal wash basins had a similar look, they usually had a single pedestal which has a square base and a square shaped rolled rim top piece with an oval bowl (see in figures 44, 45, 46 and 47). The toilets matching the square based single post pedestal wash basins identically had square bases. In the middle-class home bathrooms wall-hung rolled-rim china sink was a standard bathroom solution suiting the small bathrooms. In 1920s, bathrooms started to be considered not in the grounds of cleanliness but on the grounds of style by the affect of using colour.

The longest, most widespread, and deepest depression of the 20th century started in about 1929 and lasted until the late 1930s or early 1940s (Encyclopaedia Britannica). The affects of the financial crisis were seen in the industry immediately, halted building industry caused reduction in the sanitary ware production. The colour trend continued in the bathrooms of 1930s with the popularity of vibrant colours. Wash basin with metal legs and towel rack was preferred as a new comer along with the wall hung and single post pedestal wash basins. Different brands produced

identical products with identical colour palettes. Kohler introduced the dental wash basin (see in figures 49, 51 and 52) for the multi use in family bathrooms, especially for children, but it did not take its place in bathrooms as a basic fixture.

In 1940s by the effect of the Second World War the industry slowed down. The style of the bathrooms was unchanged from the 1930s. Through the 1950s corner bathtub started to be used widespread (see figures 59 and 60) and different products like built in wash basin in figure 61 started to diverge from the 1930s style.

The sanitary ware design in 1950s had a wide range of products offering various shapes and colours on the grounds of a strong and experienced ceramic sanitary ware industry fortified by the post war housing projects. The companies were offering customers planning options for multi user privacy as seen in the figures 63 and 64. They even gave ideas for the future use of bathrooms by suggesting dividing into a master bathroom and a family bathroom like in figure 71.

1960s were the advent of moulded fibre glass and moulded cultured marble bathtubs; the cultured marbles were basically polyester surfaced with gel coating (Wilkes 1989). Built-in wash basins and products were popular. The wall-hung toilets started to be used widespread as seen in the examples in pages 71 and 72. There was an attitude of using decorative elements which can be exemplified by the wash basin and vanity base combo in figure 72.

The moulded fibre glass and moulded cultured marble bathtubs were followed by acrylic bathtubs in 1970s. The sets started to be advertised as the ceramic pieces wash basin, toilet, bidet shown together and the acrylic bathtub separately in late 1970s. In some ads the products were shown without a layout in a bathroom as seen figure 75. The use of vibrant colours was still popular. The hydro massage bathtubs and steam showers started to be advertised as luxury fixtures (see figure 81).

In 1980s bathroom furniture started to be seen integrated to the wash basins (see figures 83 and 90) in addition to the colourful and stylish sanitary ware designs.

Variety of products has increased and designer products started to be launched by sanitary ware manufacturers. Pedestal wash basins and wash basin-vanity base combos were both popular. Pedestal wash basins with wide bowls which can be seen in the figures 82, 84, 85, 86, 87, 88 and 89 were like the signature of the 1980s bathrooms.

In 1990s hydro massage bathtubs and steam showers started to be used as a part of bathtub, washbasin and toilet sets (see figure 96 and 97). The sets with simple and effective lines and the use of neutral or pale colours became popular. The tendency of using wash basins with wide bowls has continued.

By the 2000s simple contemporary shapes, retro look, products integrated to the bathroom furniture and the use of wash basins above the countertop became popular. And the ceramic sanitary ware producer's attitude of attracting consumer's interest by designer products has increased.

Today bathrooms are not just considered as spaces limited to hygienic requirements; the cleaning of the body is converted to refreshing of the body removing the stress of the modern life. Wellness is new trend in bathroom design. The hydro massage bathtubs and steam showers were first seen in the bathrooms in 1970s as luxury fixtures but nowadays they started to take their places in the bathrooms as basic fixtures starting from 1990s.

3.2 Exceptional Bathroom Designs

The standard ceramic sanitary ware product sets as reviewed in previous pages has not changed much in time except for their styles. But there have been different product designs and design ideas for the bathroom mainly after the 1st and 2nd World Wars, by the effect of massive housing projects and the industrialization.

In 1930's various patents of panel units for bathrooms to join on site, prefabricated bathroom cells and even completely prefabricated bathroom cells carried to the site as a whole were taken. In the figure below there's an example of prefabricated bathroom cells by Brevetto USA in 1934 (Domus 1977).

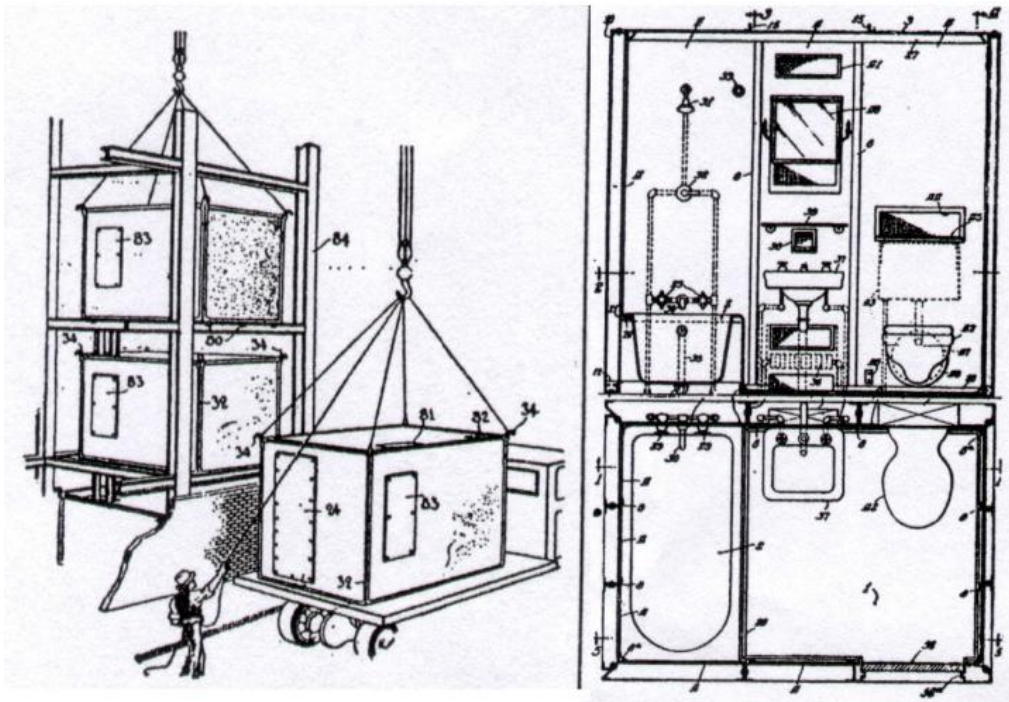


FIGURE 104 Brevetto USA prefabricated bathroom 1934 (Source: Domus 1977)

Buckminster Fuller designed a fully prefabricated bathroom unit called Dymaxion Bathroom in 1938 and a mechanical core consisting of bathroom, kitchen and a room for heating and electricity systems in 1943 (Giedion 1955, Wright 1960). His designs were extremely space saving, machine like compact cells which were too advanced for their times.

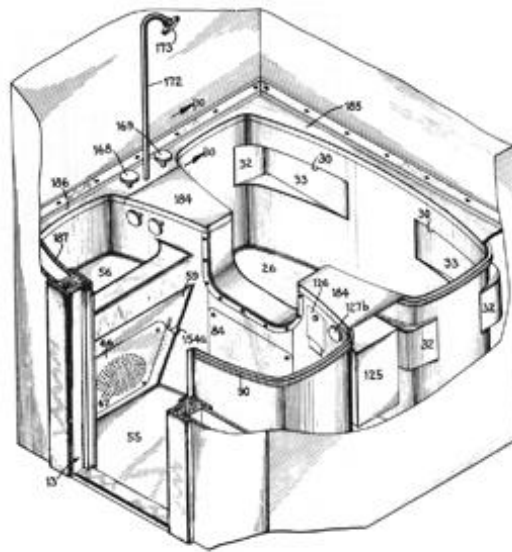


FIGURE 105 Fuller's fully prefabricated bathroom unit Dymaxion Bathroom (Source: Domus1977)

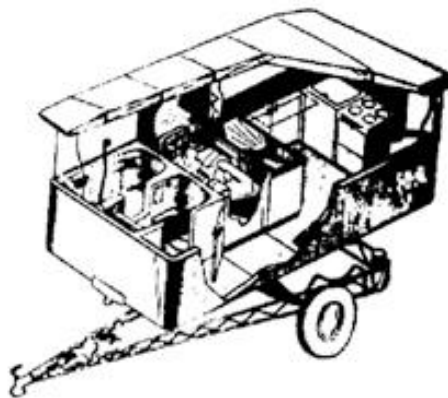


FIGURE 106 Mechanical Core (Source: Wright 1960)

One piece bathroom of Fuller's concept was in practice in 1960's by the developments in the plastics technology. Plastics were used in bathrooms due to their ductility to maintain smooth one piece surfaces containing sanitary ware and accessories (Domus 1977). The first examples were grouped sanitary ware excluding bathroom walls.

In 1957 Alberto Roselli, working with Montecatini, experimented with these concepts and arrived at a bathroom block formulated in different standard measurements which included all the necessary fixtures in two moulds; with the upper mould the actual surface of bathroom fixtures was created, and the lower part produced the support (Domus 1977).

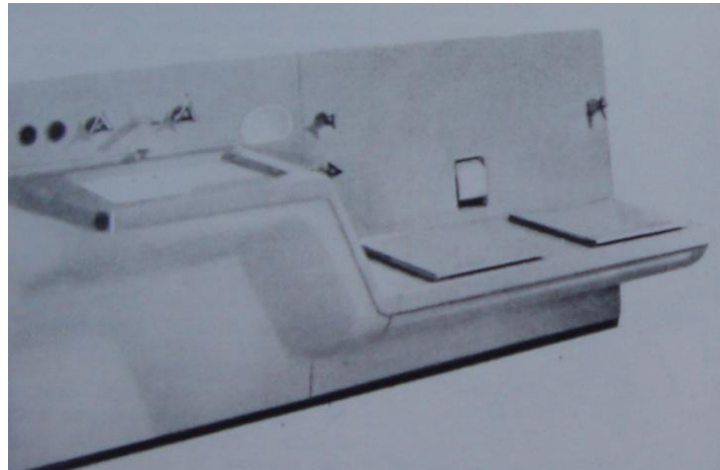


FIGURE 107 Alberto Roselli's bathroom block (Source: Domus1977)

Another experiment like the one explained above was made by Mario Scheichenbauer with the same material and principle. In both examples the work done on site was simplified to connecting the main plumbing ducts.

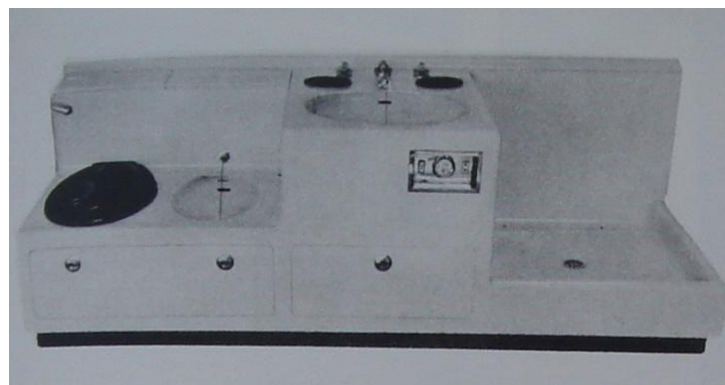


FIGURE 108 Mario Scheichenbauer's bathroom block (Source: Domus1977)

In the further steps walls, ceiling, floor and all incorporated sanitary arrangements are included to form a compact cell. As in the examples below:

Metabolist architect Kurokawa's Nakagin Capsule Tower has 140 exchangeable and recyclable prefabricated capsules plugged into two interconnected circulation cores. Each of the concrete capsules was assembled in a factory, including the furniture and the bathroom unit, then plugged to the tower in site. The capsules act as both apartments and hotel rooms, for rent and for sale. They consist of a bed, a desk, a small television and a bathroom unit. The bathroom unit is a compact cell accommodating bathtub, wash basin and toilet (Domus 1973, Boyut Kisho Kurokawa 2001).



FIGURE 109 Kurokawa's Nakagin Capsule Tower (Boyut 2001)

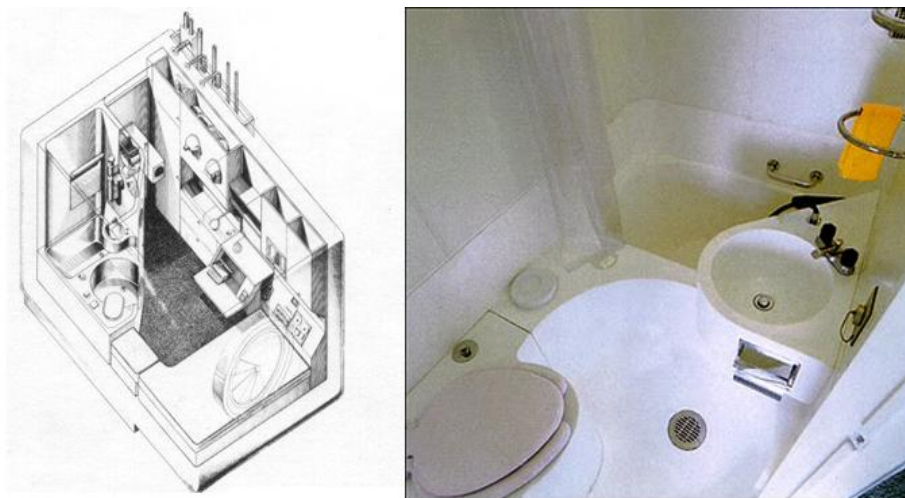


FIGURE 110 Kurokawa's Nakagin Capsule Tower's Bathroom Units (Source: Domus 1973)

The Casanova 2400 system is presented in Domus December 1973 issue as:

The Casanova 2400 system, designed by ProduktBau (Hübner und Huster) of Stuttgart, and manufactured by Staudenmayer Bauproduktion of Salach Western Germany, consists of lightweight, prefabricated units “sandwich panels”(Domus 1973).

A special sanitation system called Sanbau was developed for these units. It consists of four modular prefabricated wall panels. These wall panels accommodate wash basin, shower, toilet, bidet, waterproof door. They can be combined in various ways as shown in figures below (Domus 1973).



FIGURE 111 The Casanova 2400 system's wall panels (Source: Domus1973)

The Service Unit Two Semi-Shells Bathroom which is designed by Alberto Roselli and produced by I.C.S., Canonica d'Adda, consisted of two seamless semi-shells screwed and sealed together to form an acrylic box. The acrylic sheet is reinforced

with polyester resins and fiber glass and moulded as one piece. It has two versions, with shower and with bath (Domus 1974).

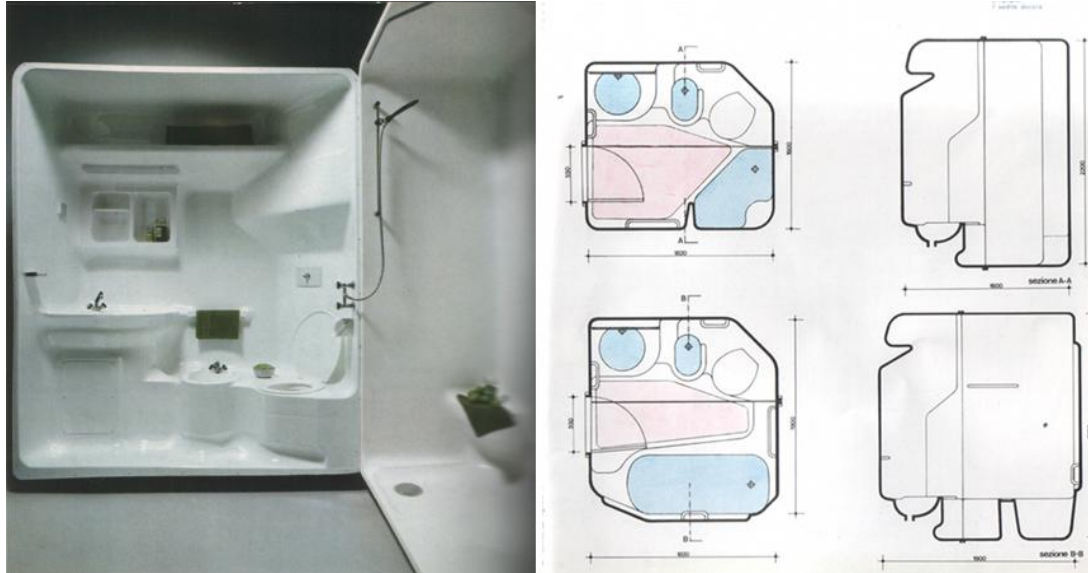


FIGURE 112 Alberto Roselli's Unite Service Two Semi-Shells Bathroom (Source: Domus1974)

The inadequate surface performance of the plastic compared to the ceramics and the difficulties of moulding methods, caused the mixed use of plastics, ceramics and enamelled steel. And as a result of these experiments the mass production started to be made in two typologies single moulded blocks and modular blocks (Domus 1977).

In late 1970s many examples of prefabricated bathroom units were made passing the prototype phase. They were differentiating from each other as mentioned in Domus Prefab 1977, companies reversed the methodological procedure which should have been as; first a study of the characteristics of the unit, then the choice of the right materials and technology. But these industrialized bathroom units had some problems in becoming prevalent. They were too industrialized for the building technologies of the time and solving the possible plumbing problems was unsolved for being seamless (Domus 1977).

There also have been some product based experiments of producing combo products in order to save space. Examples of bathtub, washbasin and toilet combo sets are listed below.

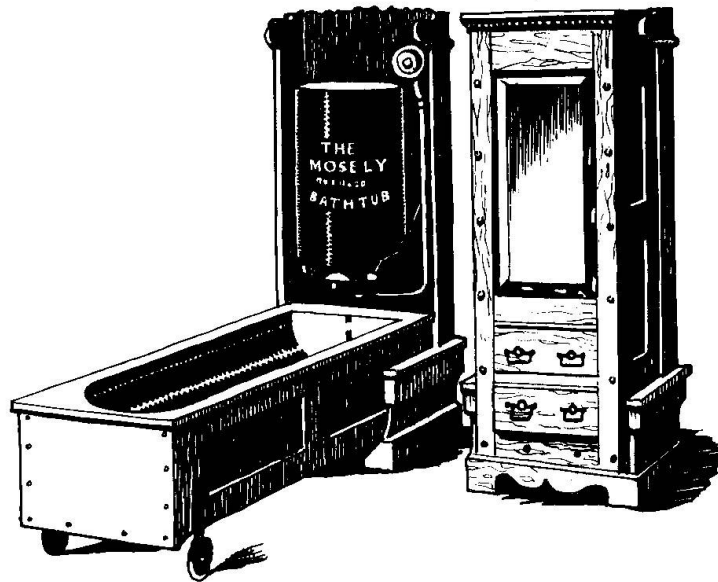


FIGURE 113 Wardrobe Bathtub 1895 (Source: Wright 1960)

Wardrobe Bathtub is a folding tub with gasoline heater published in Montgomery Ward mail order catalogue 1895 (Wright 1960).

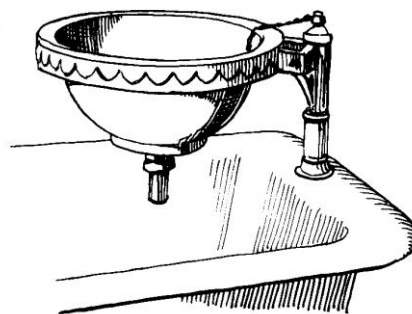


FIGURE 114 Swinging wash basin 1907 (Source: Wright 1960)

Swinging wash basin by Adamsez bath manufacturer swivels over the bathtub to save space (Wright 1960).

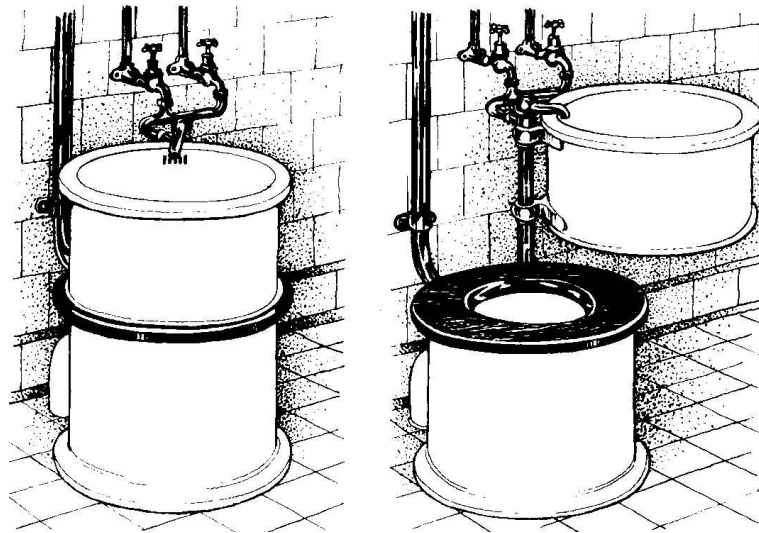


FIGURE 115 Patent Concealed Toilet Set 1907 (Source: Wright 1960)

Patent concealed toilet set consists of a cylindrical wash basin nesting over a cylindrical toilet (Wright 1960).

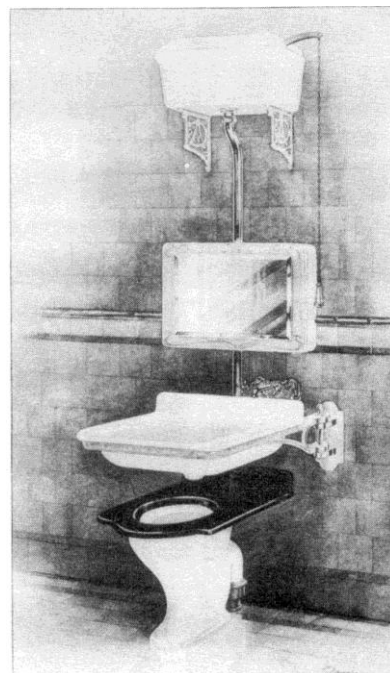


FIGURE 116 Swinging wash basin 1907 (Source: Wright 1960)

The swinging wash basin has a medicine cabinet and mirror fixed on the pipe of the water tank (Wright 1960).

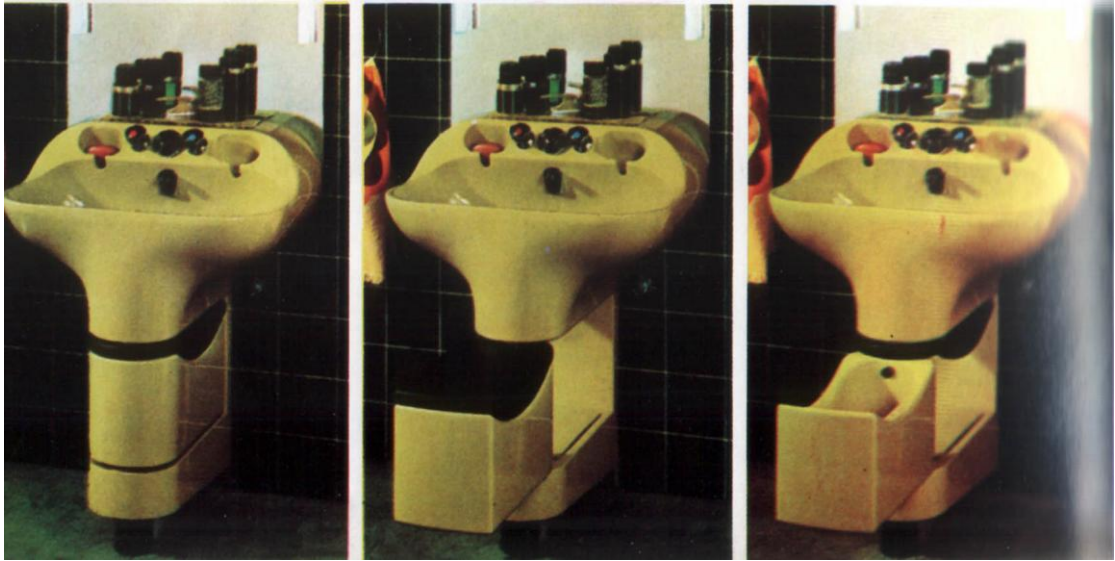


FIGURE 117 Wabico Wash Basin Bidet (Source: Domus1974)

Wabico is made of plastic material produced by Elbatainer from Germany in 1974 for small spaces with 1m² space requirements (Domus1974).



FIGURE 118 Ebb Bathroom of UsTogether design team and Lg Chem 2006 (Source: Ebb Bathroom)

Shower-Wash basin Combo and Bathtub- Wash Basin Combo designs are made of a natural acrylic stone material (Ebb Bathroom).



FIGURE 119 Panay the Bath Island 2006-2008 (Source: Undpartner)

Panay designed by Undpartner unites shower, bathtub and washbasin in one piece of furniture made of wood. It is in production since September 2008 by Tischlerei Gollackner (Undpartner).



FIGURE 120 Isabelle Hauser's Flight Concept Bathroom 2007 (Source: Supercompact Bathroom)

Flight Concept bathroom features a washing table with sink, a shower cubicle and folding bathtub, and storage for bathing accessories in an all-in-one package (Supercompact Bathroom).



FIGURE 121 The new Vertebrae®, by Paul Heron of Design Odyssey 2009 (Source: Vetebrea)

An aluminium sculpture of seven stacked modules that rotate from the center spinal column has every basic item needed in a bathroom (Vetebrea).



FIGURE 122 Beignet futuristic bathtub by Spiritual Mode 2009 (Source: Spiritual Mode)

The two metal parts at the sides of the circular shaped bathtub are the taps that fill the tub and the nozzles on the tub's base provide a gentle rejuvenating water massage (Spiritual Mode).

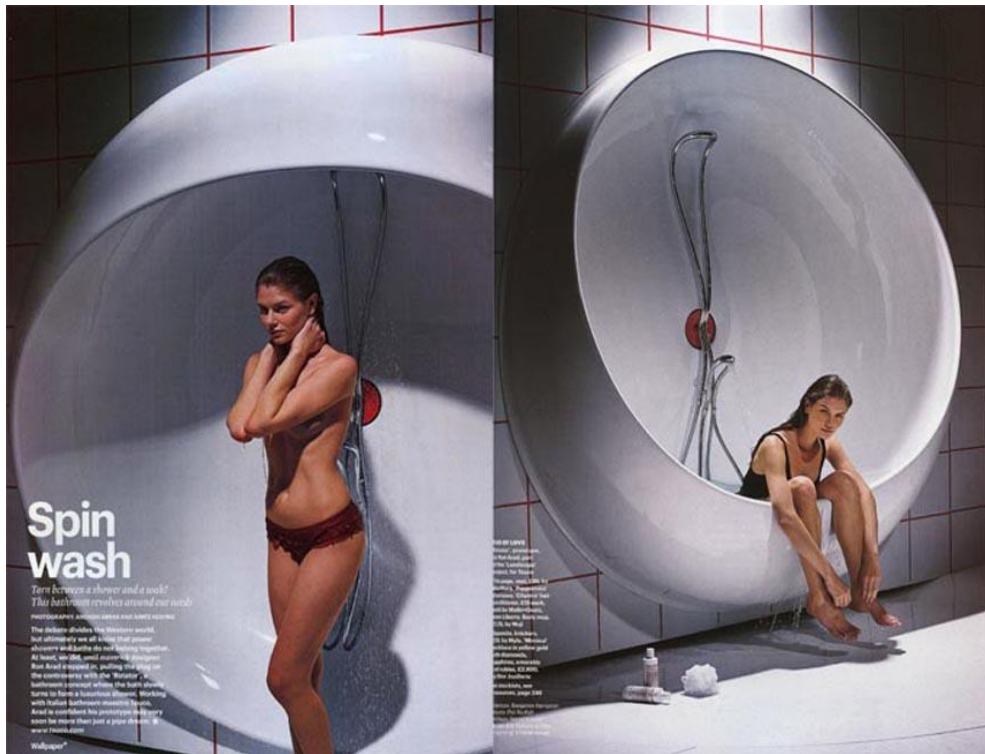


FIGURE 123 Spin Wash 2008 (Source: Wallpaper Magazine 2008 September)

Spin Wash bathtub shower combination is designed by Ron Arad for Teuco (Wallpaper Magazine 2008).



FIGURE 124 W+W Washbasin / Water toilet 2009 (Source: Buratti Battiston)

Wash basin and toilet combo set designed by Gabriel & Oscar Buratti for Roca (Buratti Battiston).

Two examples of concept studies on bathroom design are shown below. The first example has a multi functional context and the second example is a digitally enhanced bathroom concept to encourage using digital products in bathrooms.

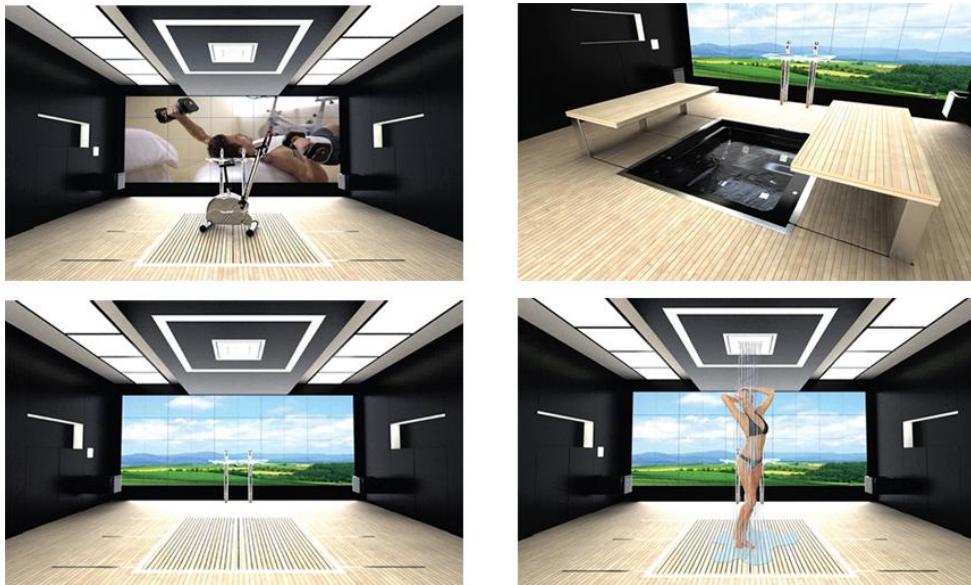


FIGURE 125 Roca Active & Relax Bathroom (Source: Luxury Launches)

Roca Active & Relax Bathroom concept is designed as a system of bathroom in ten years by Michal Mitek (Luxury Launches). This concept bathroom design is intended to make the most of a space by hiding several features in each aspect of its design. The multifunctional concept expresses the expectations from the bathrooms.



FIGURE 126 Hi-Tech Digital Bathroom from Ideal Standard (Source: Ideal Standard 2009)

Within Ideal Standard Company's vision "to bring the digital age into the bathroom creating a life space of pleasure and relaxation" the above bathroom is designed. The fixtures in the bathroom are; mirror/screen with digital time display, mirrors with integrated lighting system, digitized power shower and hammam with MP3 connection incorporated, digital sensory taps, but also more regular features such as a wireless landline, personalized weight scales, PC and television set (Ideal Standard 2009).

Ideal Standard commissioned a survey on using digital products in bathroom which is announced by a press release (see Appendix C). The survey was conducted by Synovate via an on-line poll. Five thousand consumers between 15-70 years old were asked which digital items they would like available or currently use in the bathroom. The survey covered 14 markets in Europe, Middle East, Africa and Asia.

According to the results of the press release:

Six out of ten consumers said that they would spend more time in the bathroom if it were equipped with digital products, preferably for communicating, entertainment and wellness (Ideal Standard 2009).

The survey seems to be made to encourage digital products in bathrooms. The disagreements on accommodating digital products in bathrooms are not framed in the survey. Bathrooms are one of the few places that we are alone for a few moments in the day. Regarding to the survey the digital products are not considered as intruders to provide a basis for the use of digital products in bathrooms.

CHAPTER 4

BATHROOM DESIGN PRINCIPLES

4.1 Introduction

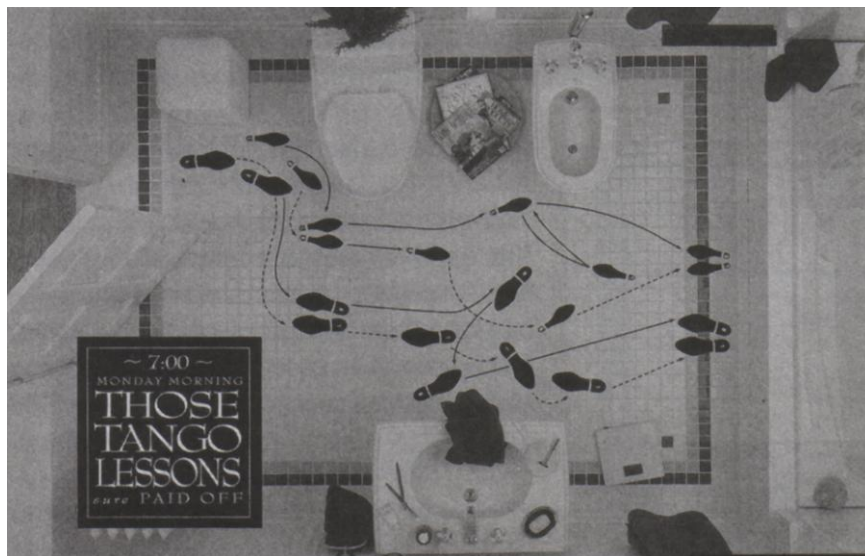


FIGURE 127 An ad of American Standard (Source: Korejvo2000)

The day starts every morning with washing face in the bathroom. The above illustration depicts the bathroom traffic in the morning in a subtle way. The bathrooms are the smallest rooms of our homes contradicting their high concentration of activities. They have a large percentage in building cost and used by every occupant of the house. For this reason taking the maximum advantage of bathroom space had been the motto of bathroom design for the last hundred years. Bathrooms are expected to accommodate various activities in addition to their main hygiene activities. Kira identifies the facilities in bathrooms as major personal hygiene activities and other related activities. In the following charts the activities Kira listed in 1976 and some additional activities that he did not mention are listed to clarify the concentration of activities.

TABLE 1 The list of the bathroom activities part 1

Bathing	Soaking / Relaxing
	With Someone
	Assisting a Child
	Assisting an Adult
	Bathing Pets
Showering	Showering
	With Someone
	Assisting a Child
	Assisting an Adult
	Steam Showering
Toileting Activities	Defecation
	Urination
	Perineal Cleansing
	Assisting a Child
	Assisting an Adult
	Diaper Changing
	Reading
Body	Washing
	Rubbing With a Coarse Bath Glove
	Applying Lotions
	Shaving Legs, Underarms, etc.
Hands	Washing
	Applying Lotions
	Manicuring Hands; Trimming Nails, Cuticles, Applying Polish
Face	Washing Face
	Cleansing Face
	Cleaning Nose
	Cleaning Ears
	Shaving Face
	Applying and Removing Make Up
	Applying and Removing Beauty Aids
	Applying Powders, Creams, Lotions etc.
	Treating Skin Blemishes
	Washing Wounds
	Applying Bandages

TABLE 2 The list of the bathroom activities part 2

Teeth and Mouth	Brushing Teeth
	Flossing
	Rinsing Mouth
	Brushing Tongue
	Gargling
	Expectorating
	Cleaning and Soaking Dentures
	Vomiting
Hair	Brush
	Blow Dry
	Style; Straightening, Waving, Curling, etc.
	Cut
	Colour
	Hair Care, Hair Repair
Feet	Washing
	Applying Lotions, Powders
	Manicuring Feet; Trimming Nails, Removing Calluses, Applying
Medical Activities	Applying Medications
	Taking Medicine Internally
	Inhaling Steam
	Applying Bandages
	Using Contraceptive Devices
	Using Enema
	Douching
	First Aid; Treating Cuts and Burns
Cleaning Clothes, Cleaning Bathroom and Household Activities	Washing Clothes; By Washing Machine, Hand Laundry
	Drying Clothes; By Drying Machine, Hanging Clothes
	Soaking Clothes to Remove Stains
	Clothing Care
	Sorting, Folding Clothes
	Cleaning the Bathroom
	Cleaning and Drying the Soiled Mops and Brushes

TABLE 3 The list of the bathroom activities part 3

Storage	Enclosed Storage; Limited Access and Free Access, Active
	Spaces for Disposal as Clean, Dry Trash, Razor Blades
	Spaces for Disposal as Soiled, Wet Trash
Sauna	Relaxing
Other activities	Supervising Children
	Polishing Shoes
	Dressing, Undressing
	Weighing Body
	Exercising
	Reading
	Listening to Music
	Drinking Beverages
	Eating Snacks
	Talking on Telephone
	Watching Television
	Personal Pampering
	Meditation
	Massage
	Sunning/Tanning
	Using Sun Lamp
Growing Plants	
Displaying Collections	

TABLE 4 The list of the Appliances Used in Bathrooms

Appliances Used in Bathrooms	Washing Machine/ Dryer
	Electrical Tooth Brush
	Electrical Razor
	Towel Warmer
	Hair Dryer; Hand Held, Wall Mounted
	Hair Styling; Hair Straightening Iron, Curling Iron, Hot Rollers
	Radio, CD, Mp3 Player
	Television

The challenge of bathroom design had been being functional, hygienic and comfortable in standard bathroom size using standard fixtures for the last hundred years. Therefore bathroom design is made as placing the templates in an appropriate way and performing decoration tricks to make it look bigger. In figure 128 bathroom design practice is shown in its simplest way by drawing the bathroom plan on graph paper and using the template sanitary ware drawings.

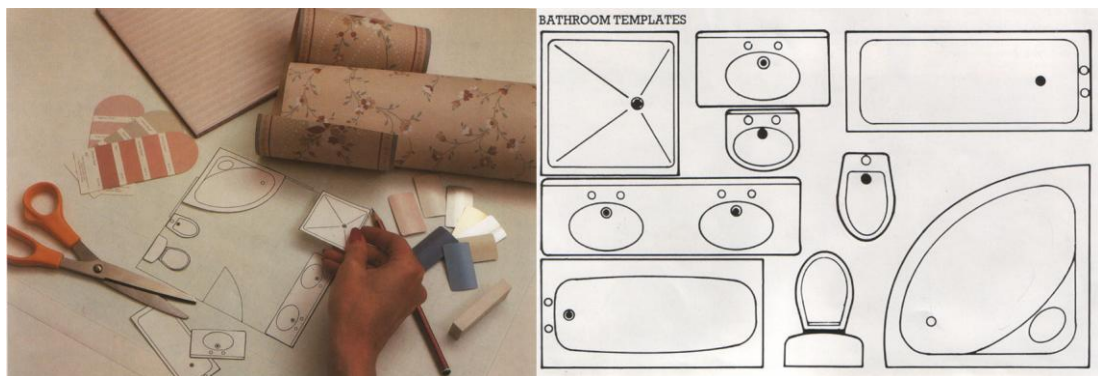


FIGURE 128 Bathroom planning using graph paper and templates (Source: Swift1988)

With the advent of the computers and internet many tutorials and software for designing a bathroom can be found online. Thereby the above method is improved by the bathroom design software allowing creating a three dimensional design of a bathroom to see how it will look like in real life. Depending on how advanced the software is user can control the size of the room and choose sanitary ware, furniture, colours, textures and accessories in the room. Bathroom design software varies from simple to complex for different uses. The range starts from creating a general layout and changing colours to 3d presentations with real furniture and sanitary ware template libraries. There are even features for scheduling the work and keeping track of the project budget. Examples of bathroom design software are; 3d Spacer, Room Arranger, Smart Draw, Punch Software, Sketch Up, Turtlesoft Goldenseal Kitchen and Bath Software, Home Designer Software Home Design Suite, Sierra Kitchen and Bath, 3D Home Architect 3D Kitchen Remodelling and Bathroom Design, Encore House Beautiful Home Design Suite, Sweet Home 3D, Bathroom Vanities CHMOD Calculator for Home Improvement and etc.

Bathroom design practice, using the conventional method or the computer technology, is the subject of many bathroom design and remodelling books. In bathroom design and remodelling books, bathroom design is generally reviewed under similar headings, these headings are listed below:

- Aspects of design; bathroom layouts, furniture, materials and coverings, colour, illumination, plumbing and wiring,
- Fittings and Accessories; wash basins, bathtubs, showers, toilets, bidets, fixtures and accessories.
- Projects; Sample bathrooms with different styles (Snow 1978, Dean 1985, Swift 1988, Buchholz 1996, Smith 1996, Asensio 1997, Jankowski 1997, Peterson 1998, Korejwo 2000, Asensio 2003).

Most of the bathroom design and remodelling books concentrates on design tricks, for taking the maximum advantage of the bathroom space. The small space solution advices are another popular subject among bathroom design books. The plumbing layouts are listed in priorities of bathroom design as a main factor contributing to the visual amplification of the space. These issues are reviewed in sections 4.2 and 4.3.

The only book which has a distinctive approach to bathrooms is “The Bathroom” by Alexander Kira, Professor of Architecture at Cornell University. The book is first published in 1966. Kira remarks that, studies on improving bathroom design were based on secondary factors as aesthetics, prefabrication and marketing competition. According to him the underlying problems of human accommodation, comfort and safety was neglected even by the basic equipment manufacturers. In his book he focuses on human requirements, both functional and psychological for personal hygiene. He states that:

... this study is concerned with the development of equipment that will best accommodate the performance of the major personal hygiene

activities, without respect to existing bathroom equipment and practices. It is based on the premise that equipment should be adapted to people and to the physical actions involved in the performance of activities. The criteria for design, therefore, include the heights, reaches, breadths, ranges of movement and other characteristics of the people who will be using the equipment(Kira 1976).

Kira's book was the first comprehensive study on the ergonomics of bathrooms. He pointed out the mistakes in product designs by making comparisons between common sizes of products and needed dimensions. He also made some suggestions for common sanitary ware used in bathrooms. He criticises the advertisements, the products and the sanitary ware manufacturers for being unrealistic in an interview published in 1989. The bathroom decors which have bathtubs installed with steps in the ads are his main example for his critique. He says points out that "None of the ads shows a person getting in or out, or a person trying to clean one of these tubs (Davidsen, 1989).".

The point which Kira mentions is the case for the difficulties to use the bathtub by a healthy person. On the other hand the elderly and disabled concerned accessibility is an emerging concern in bathroom design in the present conditions by the aging population.

4.2 Plumbing Layouts

As a result of plumbing constraints, main characterizing part of bathroom design which supports the dominancy of sanitary ware sets is the plumbing layouts. The common bathroom layouts are; one wall layout, two walls layout and three walls layout which are listed below.

4.2.1 One Wall Layout

It is an economical layout with all the plumbing in one wall and preferred in small spaces as a simple solution.

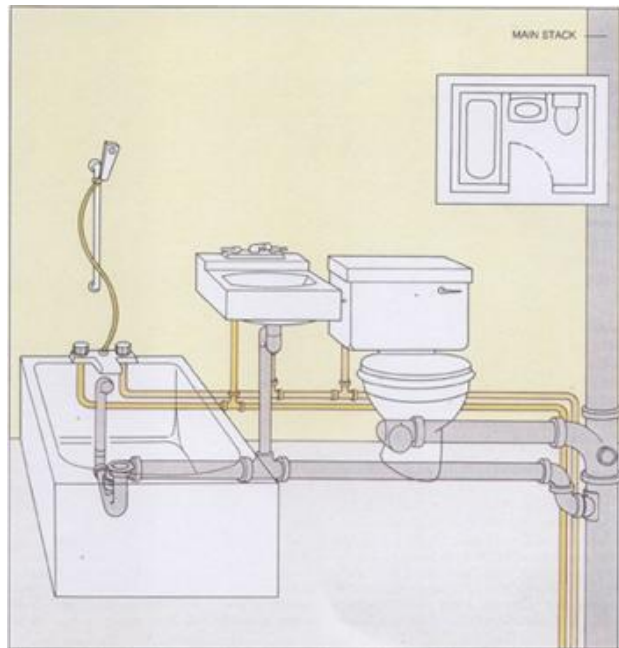


FIGURE 129 One Wall Layout (Source: Swift1988)

4.2.2 Two Walls Layout

The sanitary fittings are placed on two walls allowing more activity space. An example of two wall layout can be seen in figure130.

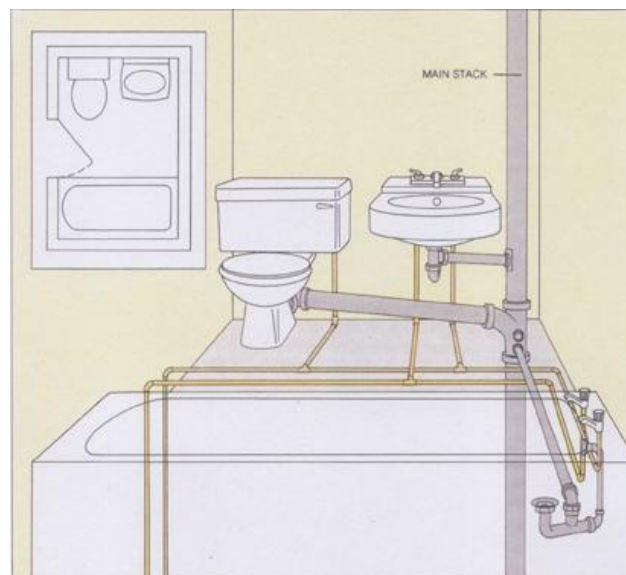


FIGURE 130 Two Walls Layout (Source: Swift1988)

4.2.3 Three Walls Layout

Three walls layout offers more flexibility but it must be at least 180cm to 140 cm to provide minimum clearances but in practice three walls layout is generally used in larger bathrooms (Swift1988). An example of three wall layout can be seen in figure131.

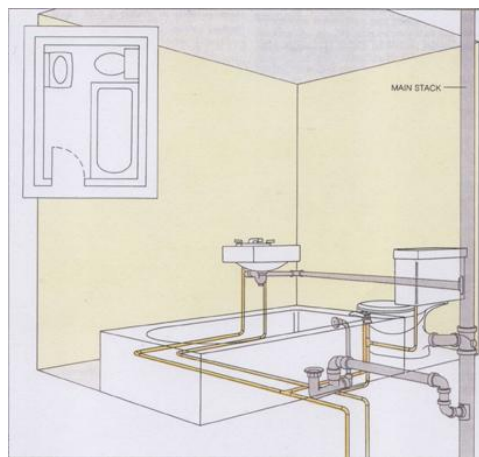


FIGURE 131 Three Walls Layout (Source: Swift1988)

4.3 Examples of Small Bathroom Designs

4.3.1 Example 1:

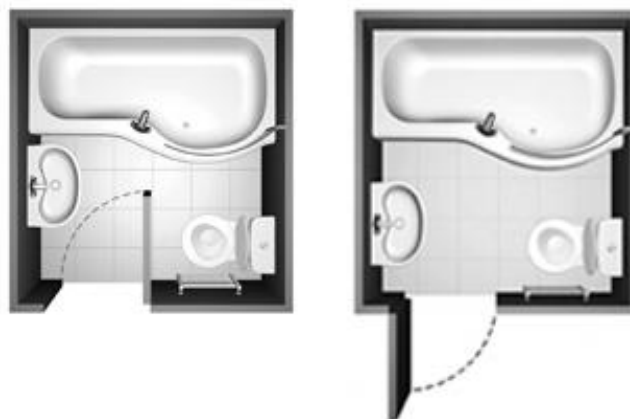


FIGURE 132 Ideal Standard's Space Solutions Examples (Source: Ideal Standard)

In this example the close coupled toilet which can be placed closer to the wall and provides extra space between the bath-tub and the toilet. A shower bath is used to serve as bath and a shower by the advantage of saved space without narrowing the room. By opening the door out the wash basin has a wider space.



FIGURE 133 Ideal Standard's Space Solutions Examples (Source: Ideal Standard)

4.3.2 Example 2



FIGURE 134 Space Solutions Examples (Source: Ideal Standard)

The use of curved space maker bath-tub provides extra space in both examples above. The bathroom on the left has a semi-countertop short-projection basin fitted on a shelf space providing half wall unit which makes the room more spacious. In the bathroom on the right a narrow basin is used.

4.3.3 Example 3:

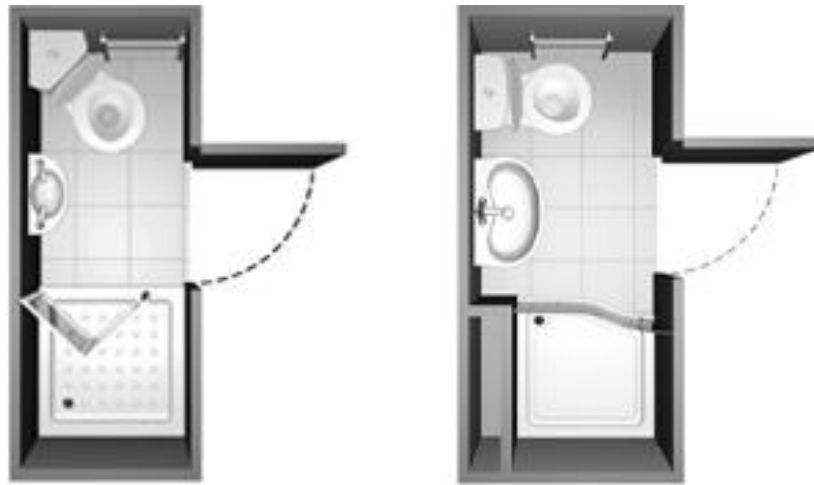


FIGURE 135 Ideal Standard's Space Solutions Examples (Source: Ideal Standard)

In the examples above the use of wash basin, toilet and shower shows how effective the sanitary ware is in the bathroom design especially in constricted spaces.

4.3.4 Example 4:

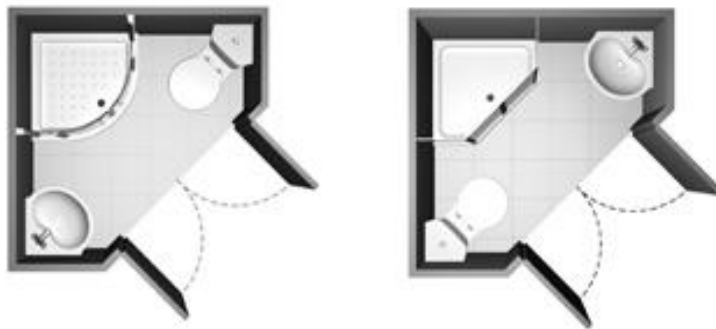


FIGURE 136 Ideal Standard's Space Solutions Examples (Source: Ideal Standard)

The toilet, wash basin and shower designed to fit corners are the most specific sanitary ware products designed for small bathrooms and special conditions. In the above examples the bathrooms are also designed to fit the corner and the extreme use of corners enables an advantageous solution.



FIGURE 137 Ideal Standard's Space Solutions Examples (Source: Ideal Standard)

CHAPTER 5

CONCLUSION

The bathroom design starting from the day it became a separate room has not evolved much in general. When the bathroom size and the sanitary ware standards were set, the producers mainly concentrated on styling basic sanitary ware and the accessories in order to attract customers. The ceramic sanitary products have been the focus of bathroom design since late 1800s. However there have been studies diverging from styling the sets. These studies can be classified as the studies on prefabrication which started in 1930s and ergonomics based studies made by Kira starting from 1960s. Evolution of Modern Bathrooms can be seen in Timeline of Sanitary Ware in Bathrooms, in Table 5 in page 122, which depicts the whole process totally.

Today, the studies on design for the elderly and disabled concerned accessibility which depends on the demand of increasing elderly population can be considered as the extension of the ergonomic based studies. But the studies on prefabrication are just reduced to producing prefabricated bathroom cells generally for trains, cruise ships and planes but not housing projects. The only applied example of prefabricated bathroom used in housing project is still Kurokawa's Nakagin Tower's bathrooms which are in danger of being demolished.

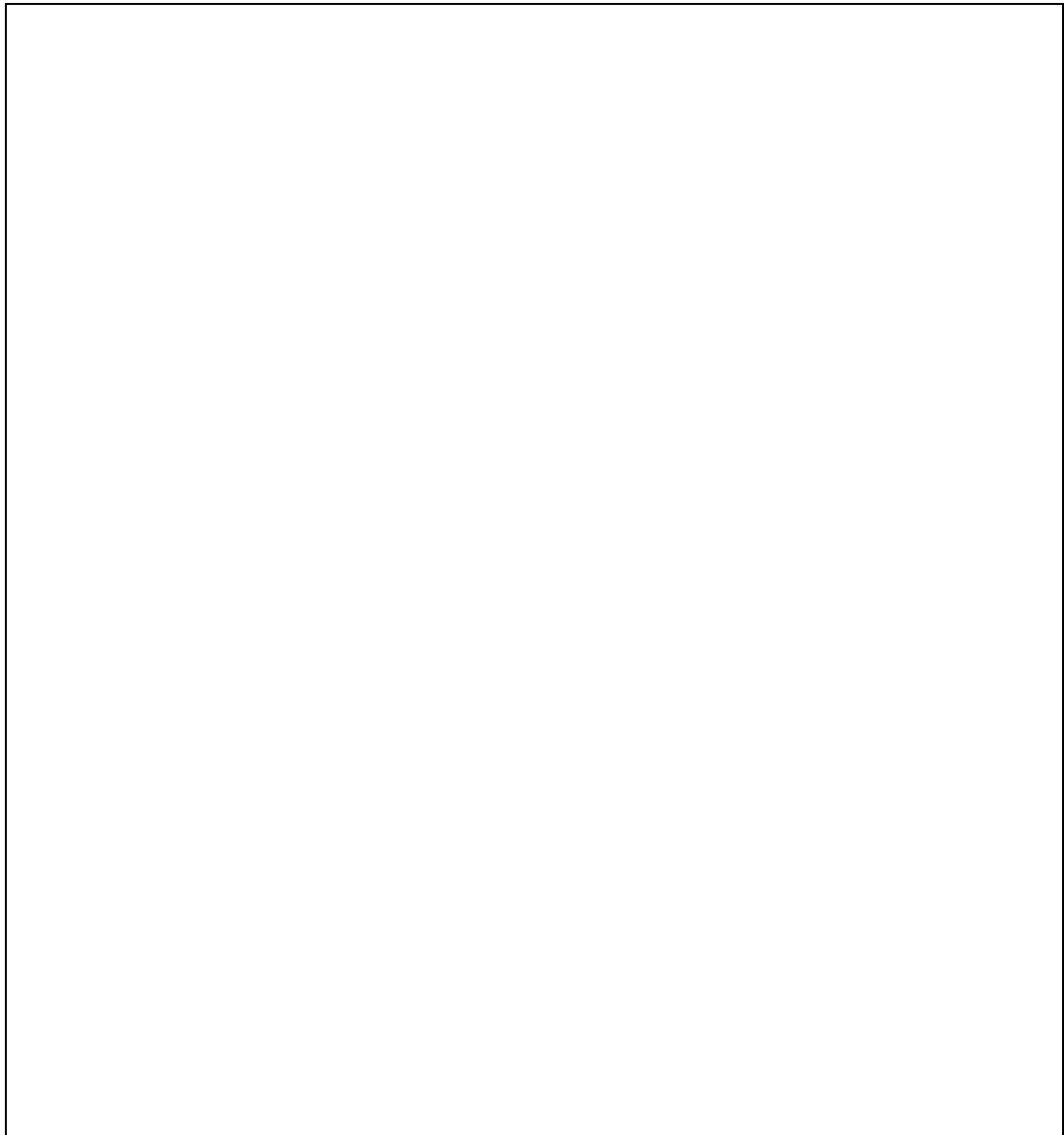
Nowadays wellness is the keyword in bathroom design. Bathrooms are not just considered as spaces limited to hygienic requirements. The cleaning of the body is replaced by refreshing of the body removing the stress of the modern life. The hydro massage bathtubs and steam showers are starting to take their places in the bathrooms as basic fixtures. In a point of view these compact units for relaxation and well being can be considered as a small scaled module version of bathroom units of Fuller in 1930s which are adapting the building construction techniques.

By the importance given to the bathrooms and the design considerations of elderly and disabled, small bathrooms are tend to enlarge which is also stated in the Bathroom Manufacturers Association Reports (BMA 2006). For responding the requirements of serving for wellness and serving as a place for elderly and disabled the bathrooms which are the smallest rooms of our homes in a period of time will seem to become bigger spaces. Multitasking is another factor which will affect the bathroom size. The activities done in the bathrooms are not just basic body rituals, bathrooms accommodate various activities and this fortifies the need for more space.

The latest trend in bathroom design is; digitally enhanced bathrooms. It is expected that the integration of technology will rise the time spent in the bathrooms and the quality of the bathroom space will be more by flat screen mirrors, wireless devices and etc. as reviewed in pages 124 and 125. However, the environmental considerations, as for being inevitable facts, are more important than the trends and expectations. The water efficiency labelling systems are turning into an obligatory matter than a voluntary act. The products are expected to spend less water and in the future this may turn into bathrooms without water as a result of the depleting water resources. A fundamental change like this would affect the whole bath rituals and daily routines bringing a whole new bathroom definition along with the regenerated tasks.

As a conclusion, the bathroom design needs more than style, technology and hygienic requirements to increase the bathroom quality. Considering the bathrooms as not simply a wet cell but the intimate environment of the human body the designer, the architect and the user should have a transitional role in bathroom design in order to progress the quality of the bathrooms.

TABLE 5 Timeline of Sanitary Ware in Bathrooms

A large empty rectangular box with a thin black border, occupying the central portion of the page. It is intended to contain the data for Table 5, but it is currently blank.

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APPENDIX A

CATALOGUE PAGES

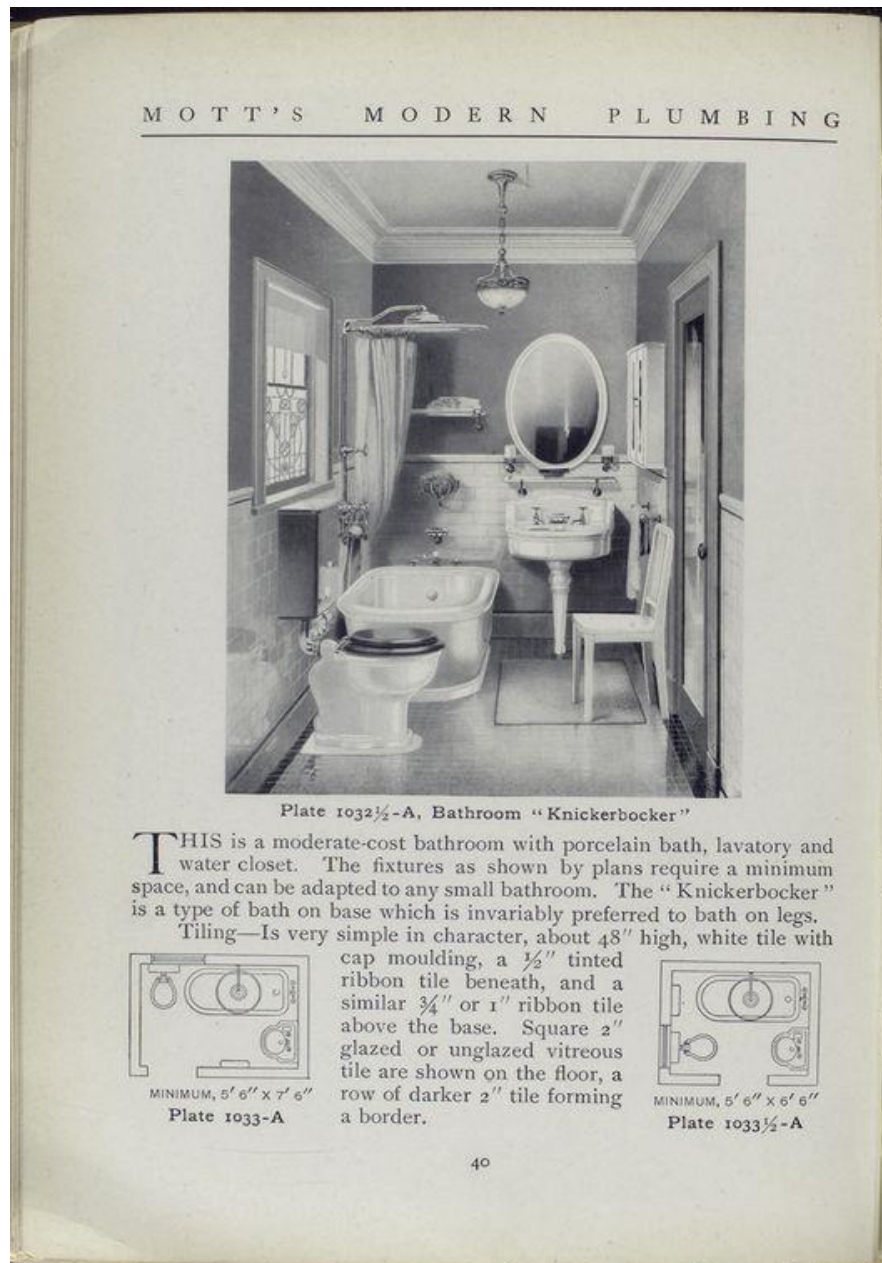


FIGURE 138 Bathroom Interior by the J.L. Mott Iron Works 1911 (Source: New York Public Library Digital Catalogue)

BATH ROOM INTERIOR, BY THE J. L. MOTT IRON WORKS.

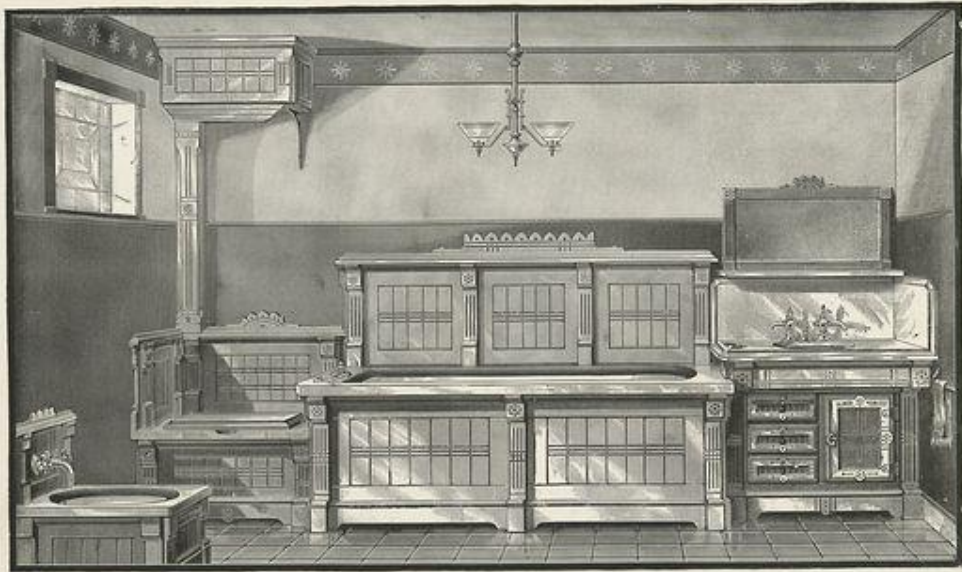


Plate 4-D.

The above is also a very complete Bath Room of about the same dimensions as Plates 2 and 3, although if a 4½ or 5 foot Tub is used the room need only be 10½ feet by 6 feet. The goods represented are our Porcelain Lined or "Imperial" Porcelain Bath, "Hygeia" Cistern Closet, Oval Porcelain Foot Bath, Wash Stand with Oval Basin fitted with McFarland Waste. The Wood Work can be of Black Walnut, Ash or Cherry.

FIGURE 139 Bathroom Interior by the J.L. Mott Iron Works 1884 (Source: New York Public Library Digital Catalogue)

BATH ROOM INTERIOR BY THE J. L. MOTT IRON WORKS.

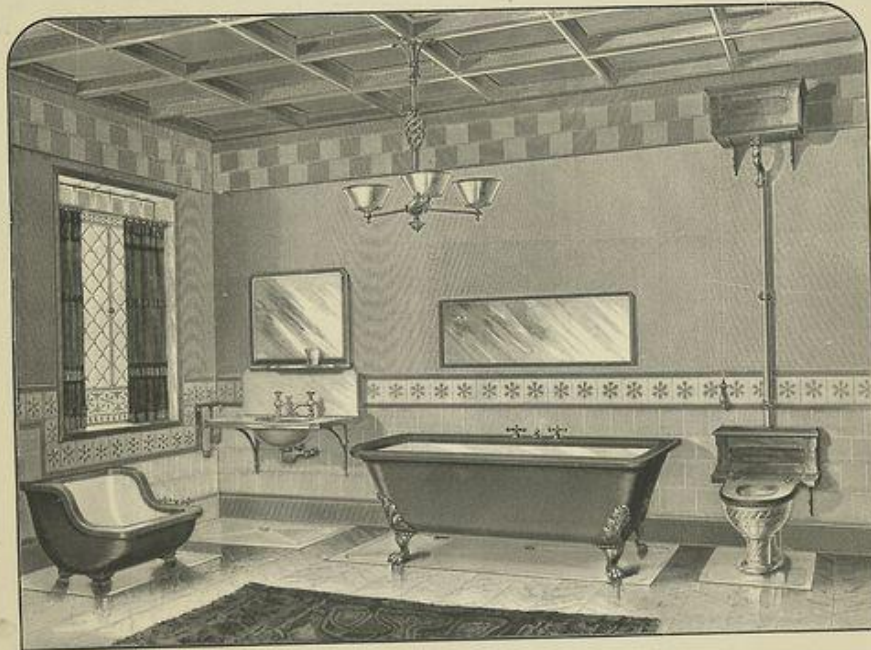


PLATE 3-G.

WE present this Interior as a suggestion to those who prefer to have all plumbing fixtures set up open, dispensing as far as possible with cabinet work, so that they may be readily accessible on all sides. Obviously, this renders it imperative that the various fixtures, such as Bath Tub, Water Closet, etc., be not only perfect from a practical and sanitary standpoint, but that they be handsome and artistic in appearance, and made and finished in a first-class manner; that we have fully appreciated this will be conceded by a reference to the above Interior and by an examination of the goods themselves.

The Interior comprises Mott's Porcelain-lined Roman Bath, with Supply and Waste Fittings and Hardwood Rim (the Legs can be made of cast brass or bronze to order); the "Isodoro" Embossed All-Porcelain Water Closet, with Cabinet-finish Cistern and Open Seat and Back; Mott's Open Lavatory, with "Nonpareil" Basin or with Oval Basin and "Unique" Waste; Porcelain-lined Seat Bath, with Supply and Waste Fittings and Hardwood Rim (the Legs can be made of cast brass or bronze to order). A detailed illustration and description of these appliances will be found on the following pages of this Catalogue.

FIGURE 140 Bathroom Interior by the J.L. Mott Iron Works 1888 (Source: New York Public Library Digital Catalogue)

“Standard”
PORCELAIN ENAMELED
Baths and Sanitary Ware

Has the snowy purity of china and the durability of iron. Its installment will give you a dainty, luxurious and sanitary bathroom at a price you can afford. This illustration shows an artistic bathroom equipped with “Standard” ware costing approximately \$87.00. *Every piece bears our trade-mark “Standard” cast in relief on the exterior, which is our absolute guarantee of quality and durability.*

We will send you our beautiful book
“Modern Bathrooms”
 Free on Request
 which illustrates and describes several styles of bathroom arrangement and gives approximate costs.

STANDARD SANITARY MFG. CO.
 Department C Pittsburg, Pa.



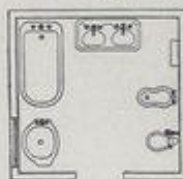
FIGURE 141 Standard Sanitary Mfg. Co.'s ad published in 1903 (Source: Vintage Stitches)



Plate 1002-A, Bathroom "Alexandria"

THIS very complete bathroom includes the "Alexandria" imperial porcelain bath, imperial porcelain seat bath and porcelain bidet, the fittings of which pass through the extra-wide rim. The large "Clinton" lavatory which is the central figure is 4' 2" long and has two basins. The striking effect of the mass of bright imperial porcelain with its background of appropriate tile can only be indicated by the illustration.

Tiling—In design and treatment this is modern English. The floor tile may be either glazed or unglazed vitreous.



MINIMUM SIZE 9' x 9' 6"
Plate 1003-A

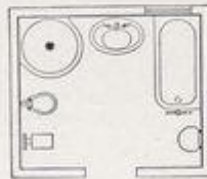
FIGURE 142 Bathroom Interior by the J.L. Mott Iron Works 1911 (Source: New York Public Library Digital Catalogue)



Plate 1070-A, Bathroom "Baronial"

AMONG the many improvements that we have devised, few have met with such constant and continuous appreciation as the "La Salle" imperial porcelain bath, the back, end and base being built into the tile. The "Nouveau" lavatory with its simple effective design is the index to the character of this bathroom, both as to the fixtures and the tiling.

Tiling—The tile frieze is an elongated leaf pattern in high relief. It is usually preferred in plain white or white touched with green.





MINIMUM SIZE, 7' x 9'
Plate 1019-A

FIGURE 143 Bathroom Interior by the J.L. Mott Iron Works 1911 (Source: New York Public Library Digital Catalogue)

1855 • SEVENTY-FIFTH ANNIVERSARY • 1930

IS the beauty of a modern Crane color bathroom, with the distinction of Crane appointments, compatible with strict economy? This room, and the materials that equip it, answer emphatically: "Yes." The Nile green lavatory and bath, in the new and different *Corwith* design, are here made of serviceable inexpensive enamelware, rather than vitreous china and porcelain. The new *Santon* square-base syphon-jet closet gives beauty, sanitation, and

splendid mechanical operation, at a reasonable price. The total cost of the plumbing materials, as well as the decorations, has been kept surprisingly low. Just how low, let your architect and plumbing contractor tell you. For many inspiring suggestions for other rooms, some elaborate enough for any mansion, others economical enough for the most modest cottage, but all beautiful, write for the Crane book, *Bathrooms for Out-of-the-Ordinary Homes*.

Valves  **CRANE**  Fittings

FIXTURES, VALVES, FITTINGS, AND PIPING, FOR DOMESTIC AND INDUSTRIAL USE
Crane Co., General Offices, 836 S. Michigan Ave., Chicago + 23 W. 44th St., New York + Branches and sales offices in one hundred and ninety cities

FIGURE 144 Crane Bathroom 1929 (Source: Antique Home Style, Vintage Stitches, American Vintage Home)



YOUR BATHROOM IS AS ATTRACTIVE AS THE PLUMBING FIXTURES ARE BEAUTIFUL

"Standard" Plumbing Fixtures are now made in Ming Green, Rose de Barry, Ionian Black, Tang Red, Orchid of Vincennes, Royal Copenhagen Blue, Clair de Lune Blue and St. Porchaire Brown, as well as White.



I am interested in receiving _____ D. H. 1-22

Book—"Standard" Plumbing Fixtures for the Home.

Particulars of your convenient payment plan.

My name is _____

My address is _____
City State

HOW old are the plumbing fixtures in your bathroom? So old that they are old-fashioned and unsightly—so old that they have an out-worn, not-quite-clean appearance? Then you know that to redecorate your bathroom will only make the plumbing fixtures seem more out-of-place. You realize that bathroom beauty must have its beginning in the plumbing fixtures.

Why not modernize and beautify your bathroom by replacing the old fixtures with new "Standard" Plumbing Fixtures? Never have they been so beautiful, both in design and color.

The group illustrated above in Ming Green, built-in bath, vitreous china water closet and pedestal lavatory, all equipped with "Standard" Mastercraft Fittings is priced at \$510. The same group equipped with regular "Standard" fittings is priced at \$380. The same group in white fixtures with regular "Standard" fittings is priced at \$310.

Your plumbing contractor will be glad to give you the complete details of the "Standard" Time Payment Plan, or you can obtain them, and any other information you desire, by mailing the coupon. You are invited to visit a "Standard" Showroom to see the new designs in the new colors.

Standard Sanitary Mfg. Co.

106 SIXTH STREET, PITTSBURGH, PA.

DIVISION OF

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

FIGURE 145 Standard Sanitary Mfg. Co.'s ad published in 1930 (Source: Vintage Stitches)

FOUR'S NOT A CROWD

IN THIS BATHROOM

CRANE'S "T" bathroom combines eye-appeal with economy and provides maximum privacy for the one-bathroom home.



"T" plan arrangement of plumbing fixtures includes two lavatories, and has a large area near closet combination for hamper and storage space.



Put members of your family in this picture and imagine how wonderful it would be to have a bathroom that is three rooms in one. The use of concealed sliding doors permits you to achieve privacy in any section.

So can bathe while dad shaves and mother fixes her hair! No traffic problem at breakfast time for this family.

This is but one of endless possibilities in bathroom

arrangement that the "T" plan makes practical. Crane fixtures are styled and priced to match any of these possibilities, as well as any other different bathroom plan you may have.

But, don't settle for less than the finest—insist on Crane, "the preferred plumbing." Crane Co., General Offices, 336 N. Michigan Ave., Chicago 5, Ill.

For more information? For "T" bathroom specification sheets that show floor plans, elevations and the materials used in the room shown here, see your local Crane Plumbing Dealer or mail a card to Crane Co. No obligation.

COME TO **CRANE** FOR IDEAS

FIGURE 146 Crane Bathroom 1952 (Source: American Vintage Home)

Preview of Prize-Winning Room Ideas from Crane's National Architectural Competition

**1st
PRIZE
BATHROOM**
HOMES LESS THAN
\$35,000

"Compartment bath" brings new privacy to small homes. A bathroom that provides individual privacy and convenience for four members of family at same time. "Compartmentalizing" is the secret. Two Marcia counter-top lavatories, a sliding door for the Drexel closet, and a simple curtain around the Neuvogue bath do the trick.

Winning design by J. A. Curtis, post-graduate student at Massachusetts Institute of Technology.

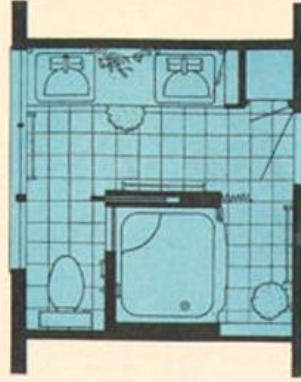


FIGURE 147 Crane Bathroom 1953 (Source: Mid Century Home Style)

Perfect symbol of a wonderful hostess

ELJER
DIVISION OF THE MURRAY CORPORATION OF AMERICA

Guaranteed by Good Housekeeping

ELJER fixtures are available in vitreous china, formed steel or cast iron. Your plumbing contractor will show you how economically you can add an extra bath to your home. Call him, or write: Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh 22, Pennsylvania.

SIX lovely colors to choose from

*ELJER - the only name you need to know in plumbing fixtures

FIGURE 149 Eljer Bathroom 1956 (Source: The American Home magazine 1956 August)



Tiles by Pilkington's (Canada) Ltd.

Styled to be modern for years to come

CRANE BATHROOMS IN COLOUR

You'll always point with pride to the lasting loveliness and attractive styling of your Crane bathroom. Quality of construction... modern beauty of design... and the selection of seven lovely pastel colours as well as white... have made Crane Canada's preferred plumbing. When you buy, build or remodel, remember that **CRANE QUALITY COSTS NO MORE.** Ask your plumbing and heating contractor.

CRANE
LIMITED

General Office:
1170 Beaver Hall Square,
Montreal, 3 Canadian Factories
32 Canadian Branches

225

FIGURE 150 Crane Bathroom 1958 (Source: Miss Retro Modern)

His & Her cabinet-lavatories, a new idea that adds extra convenience, extra storage space to bathroom and dressing room. Notice the roomy bathing luxury of the new, off-center Contour bathtub...the new ease of cleaning with the off-the-floor toilet. And best of all, fine quality American-Standard products cost much less than you think, so...for the newest...look to **American-Standard**



The big, one-piece, easy-to-clean white bath...the new, off-center Contour bathtub...the new ease of cleaning with the off-the-floor toilet...The handy storage cabinet and a modern stool.

New, off-center design of the 35" high Contour bathtub provides extra bathing enjoyment. Bring the back of the tub close to your cleaning and turns two corner tubs. One is a handy stool, the other a handy seat.

Off-the-floor toilet provides a novel look, new ease of cleaning...just reach a step stool...instead of



Put your bathroom on another level...with the new, off-center Contour bathtub...the new ease of cleaning with the off-the-floor toilet...The handy storage cabinet and a modern stool.

AMERICAN-STANDARD

2121 19th St. N.W., Atlanta, Georgia, U.S.A.

"Please send me the following information in duplicate"
 My name is _____
 My address is _____
 My phone number is _____

AMERICAN-STANDARD
 STANDING AND CLEANING SYSTEM

FIGURE 151 American Standard Bathroom 1961 (Source: Mid Century Home Style)

Bagni Ceramica Scala: fra i piú belli, i meno costosi.




Verdea, Visone, Castoro, Champagne, Fondale.
O come le forme Irit e Primavera sempre attuali nel disegno e nei colori.
Quindi, se state pensando a un bagno, al vostro bagno, prima di scegliere chiedete di vedere i modelli Ceramica Scala, guardateli bene, fate quattro conti, poi decidete via, così, come vi sembra meglio.



Medi Standard - Via Ampère 4, 101 - 20122 Milano

Chi ha detto che un bel bagno è necessariamente costoso?
Ceramica Scala, grazie alle sue larghe dimensioni e riuscite a offrire in commercio una serie di piú di grande qualità, scegliendo i materiali migliori, tutti a una grande caratteristica in comune: il prezzo contenuto!

grande bacino perfettamente ovale, dove i bordi sono modellati con estrema dolcezza.
Bellissimi nei colori Bianco, Verdea, Visone, Castoro, Champagne, Fondale. Una linea giovane, una forma che non stanca mai perché continuamente attuale.
O come la forma Rujade, freschissima nella linea, funzionale



Come per esempio la forma agrodagata da Paolo Tichei, e forma inesplicita, con un
nel disegno, perfettamente adatta ad un bagno giovane e moderno. Coloratissimo nei colori Bianco.



FIGURE 152 Ceramica Scala Bathroom 1980 (Source:DOMUS 1980 August)

PUNTO & RIGHE

La nuova e originale collezione Punto & Righe è costruita su un modulo-base di cm. 14 (che consente una più funzionale articolazione ergonomica delle composizioni) e dispone di oltre 70 componenti nella versione bianco, grigio perla, frassino e noce, con l'aggiunta di altre finiture per le ante.

Opportunamente completati con mensole e specchi di diverse misure, gli elementi della collezione Punto & Righe permettono di realizzare qualsiasi ambientazione, dal tutto in sintonia con le esigenze di rendere lo spazio-bagno non solo sempre più funzionale ma anche sempre più gratificante.



NOVELLO^{spa} DIVISIONE ARREDAMENTI PER BAGNO 30035 mirano (venezia) italia - C.P. 76 - tel. 041/430733 - telex 311888 NOVEL I

PUNTO & RIGHE è un marchio depositato

FIGURE 153 Punto&Righe Bathroom 1983 (Source:DOMUS 1983 October)

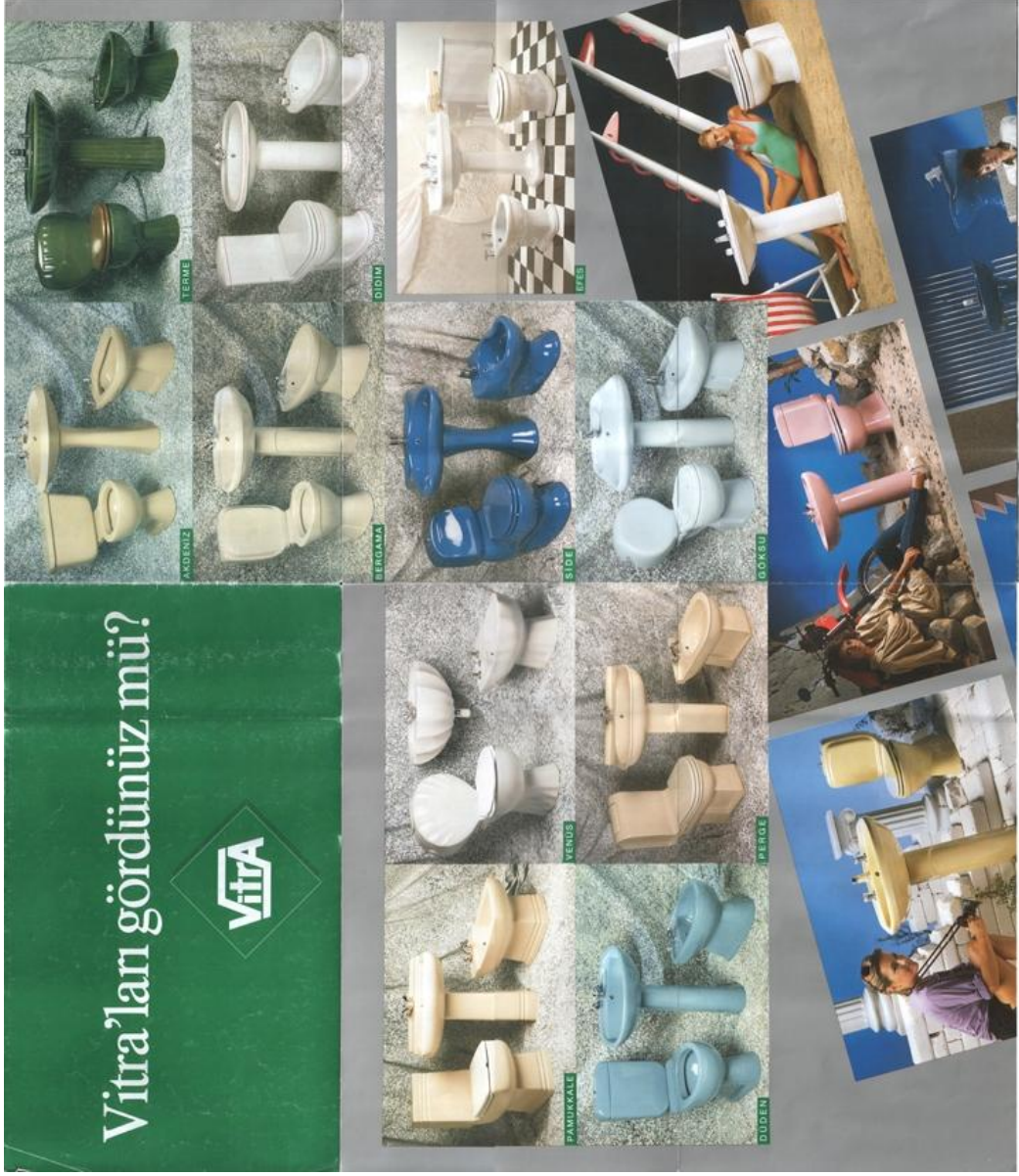


FIGURE 154 A leaflet catalogue of Eczacıbaşı Vitra from 1980s

APPENDIX B

WATER EFFICIENCY LABELS

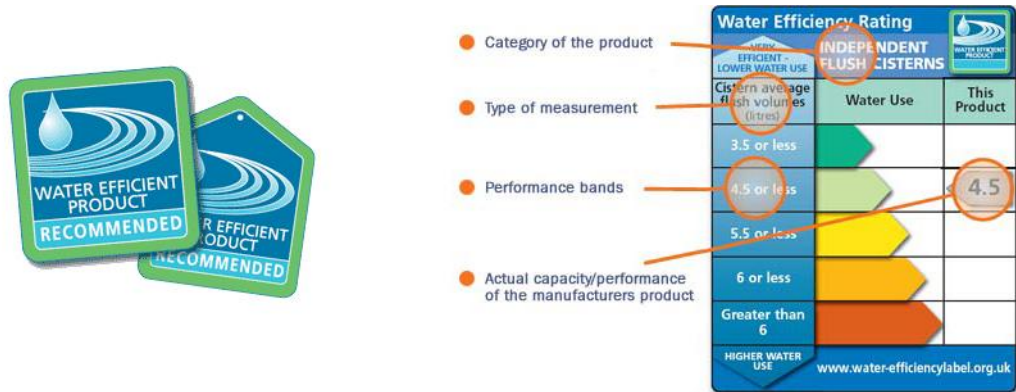


FIGURE 156 British Water Efficiency Labels (Source: BMA)



FIGURE 157 Australian Water Efficiency Label (Source: WELS Scheme)



FIGURE 158 American Water Efficiency Label (Source: EPA Water Sense Label)



FIGURE 159 Water Efficiency Label of Singapore (Source: PUB WELS)

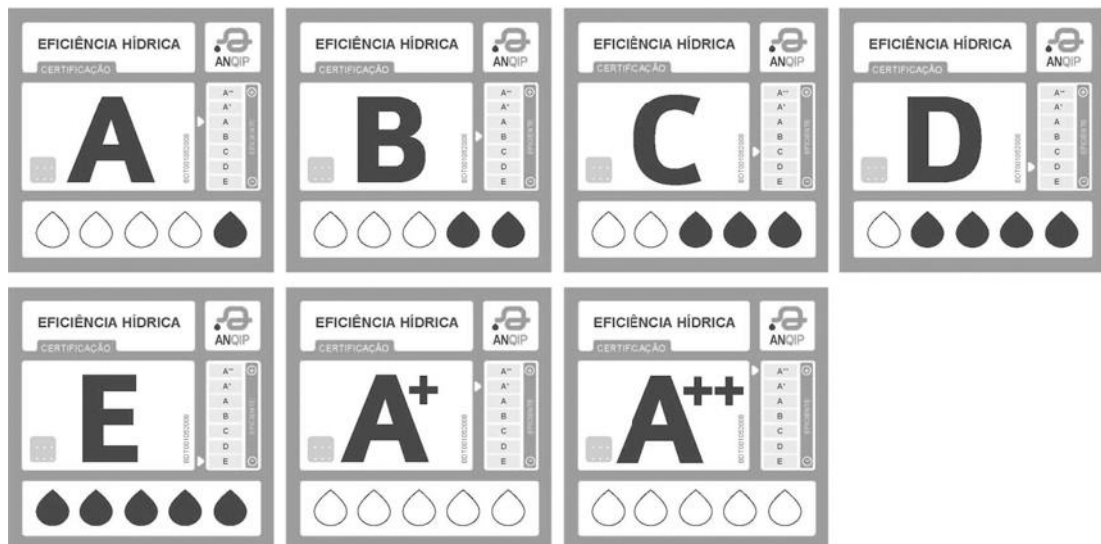


FIGURE 160 Water Efficiency Label of Portugal (Source: Silva and Rodrigues)

APPENDIX C

IDEAL STANDARD PRESS RELEASE

British teenagers are turning the bathroom digital

According to new research¹ released today, increasing numbers of consumers across the globe are using digital products in their bathroom - from wireless devices and portable music players to computers and even accessing the internet. The study of more than 5,000 consumers in fourteen countries reveals that UK teenagers are some of the most technologically savvy, with 79% of those surveyed agreeing they would spend more time in a digitally enhanced bathroom – the highest figure from all countries surveyed in the EMEA region.

The research commissioned by Ideal Standard International, a leading provider of innovative and design-driven bathroom solutions, also reveals that one in ten UK teenagers is already using the internet as well as gadgets such as electric game consoles in their bathrooms at least once a week. Younger Brits (15-20 years old) are using other digital devices such as mobile phones and portable music players in the bathroom significantly more often compared to older age groups.

According to the online poll, British men are living up to their gadget loving stereotype and make more use of electronic products in the bathroom than women with almost a quarter (37%) using radio, TV, computer and internet all from the sanctuary of their bathroom. In contrast, one out of three British women surveyed are more interested in buying digital products that help to be environmentally friendly, such as taps with special 'click' technology that control water flow and reduce water wastage.



This image depicts existing and futuristic digital aspects of the bathroom. Included are: mirror/screen with digital time display, mirrors with integrated lighting system, digitized power shower and hammam with MP3 connection incorporated, digital sensory taps, but also more regular features such as a wireless landline, personalized weight scales, PC and television set.

Key findings include:

1. **Gender:** Overall, women almost use digital products as often as men but for different reasons. For men, the digital items used in the bathroom are more often linked to entertainment and time saving, such as PDAs, computer games, DVD players and the internet. Women use telephones, personal weight scales and portable music players most often. When it comes to watching TV in the bathroom, men (11%) and women (3%) have very different scores!
2. **Motivation:** The number one reason why people would use digital products in the bathroom is “to be entertained” (30% in the UK). Mostly used for entertainment are TVs, radios, DVDs and CD players, portable music players and electronic game consoles. The main reasons why people use their mobile or wireless landline phone in the bathroom are: to save time (46%), to be more available (29%) and to have more privacy (29%).
3. **Age:** 43% of British people in their twenties are most drawn to electronics for entertainment . Moreover, 40% of families with teenage children say they are more inclined to buy digital products for the bathroom.

4. **Device:** TVs are most popular in South Korea, where 30% of consumers already have one in their bathrooms compared with only 6% in the UK. Looking at the use of mobile phones in the bathroom, South Korea leads by 65% closely followed by Russia (60%) and Greece (56%) with the UK lagging behind at 26%, although this is on the increase. The radio is also popular with one in four people in the UK already having the device in their bathroom.
5. **Potential:** Six out of ten UK consumers indicate that they would spend more time in the bathroom if they had more digital products – especially if they were products designed for entertainment (32%), wellness (24%) and communicating (14%). Overall, eight in ten British consumers are interested in buying one or more types of digital products developed for the bathroom.

The next-generation bathroom

Ideal Standard International has long been an advocate of forward-looking design and the company's vision is to "bring the digital age into the bathroom creating a life space of pleasure and relaxation". Ideal Standard International works closely with a team of established designers to translate consumers' needs into actual bathroom furniture and ceramics. *"Digital implies a better way to control our environment through discrete embedded technology,"* says Robin Levien, an established designer who has been working with Ideal Standard International for 28 years. *"We understand that the human interface 'fuzzy logic' is just as important as the technology, and, therefore, it is key to develop products that communicate with the consumers on levels that they care about, such as health."*

A trend for the future – the bathroom turning digital!

"The results of the survey show an important evolution in our society," says Paul Frankish, UK Marketing Director at Ideal Standard International. *"The bathroom is often considered as the last safe haven in a stressful environment. This survey confirms that digital products are not considered as intruders, but rather have been welcomed to a permanent spot in the bathroom. The only thing now is for the UK to catch up with*

the rest of the world and discover the amazing advantages a digital bathroom can offer.”

If currently the main reasons for using digital tools in the bathroom are entertainment, saving time and privacy, the future reveals a widening scope of areas in which consumers would welcome digital devices for health and safety in the digital bathroom.

Notes to Editor

For more information, visit www.idealstandardinternational.com or contact the Ideal Standard UK press office at Hill & Knowlton:

Jo Walsh / Nuala O'Neill

0207 413 3242 / 020 7973 5923

idealstandard@hillandknowlton.com

To find out more about Ideal Standard International's range of digitally enhanced products please visit our [online press release](#) archive:

- [SimplyU: create your “Ideal” bathroom with a simple click](#)
- [Ideal Standard International pioneers integrated design solutions concept and new mirror range](#) and [Ideal Standard mirror range, a reflection of the future](#)
- [Tonax : Showering in colours, sounds and sensations](#)
- [Soft Bath, a glimpse into bathtubs of the future](#)
- [Jado unveils next-generation bathroom products](#)

About Ideal Standard International:

Ideal Standard International, headquartered in Brussels, Belgium, is a privately-owned company, operating independently in Europe, Middle East and Africa and Asia Pacific. The company also has presence in Central and South America via a

joint venture called Incesa. With bathroom solutions as its core business, the company provides bathroom furnishings, fixtures and shower enclosures for residential, commercial and institutional buildings. Its products are sold under its strong international brands Ideal Standard, Jado and American Standard (Asia/Pacific and Incesa), as well as leading local brands including Incesa Standard (Incesa), Armitage Shanks (UK), Ceramica Dolomite (Italy), Porcher (France and Incesa) and Vidima (Eastern Europe). The company employs some 17,300 people and is operational in over 30 countries. Ideal Standard International is governed by a Board of Directors.

About Synovate

Synovate, the market research arm of Aegis Group plc, generates consumer insights that drive competitive marketing solutions. The network provides clients with cohesive global support and a comprehensive suite of research solutions for brands, products and markets. Synovate employs over 5,500 staff in 108 cities across 51 countries and is the fastest growing market research organisation in the world. For more information on Synovate visit www.synovate.com

ⁱThe survey was conducted in October 2008 by Synovate, a leading global market research company, via an online poll which asked over 5,000 consumers between 15-70 years old which digital items they would like available or currently use in the bathroom. The survey covered 14 markets in Europe, Middle East and Africa (EMEA) and Asia: Belgium, Bulgaria, China, Egypt, France, Germany, Greece, Italy, South Korea, The Netherlands, Russia, Spain, Thailand and the United Kingdom.