

PROBLEMS ENCOUNTERED IN THE CARE OF
BATHROOMS OF FORTY HOMES IN MANHATTAN, KANSAS

by

DOROTHY MAUD DEVENNY

B. S., Hunter College
of the City of New York, 1957

A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Family Economics

KANSAS STATE UNIVERSITY
OF AGRICULTURE AND APPLIED SCIENCE

1959

LD
2668
T4
1959
D48
C.2

Document

11

TABLE OF CONTENTS

INTRODUCTION	1
REVIEW OF LITERATURE	3
History of Bathing	5
Relationship of Bathrooms to Adequate Housing	9
Modern Trends in Bathroom Planning	11
Authorities' Suggestions	13
Research Relating to Bathrooms	16
METHOD OF PROCEDURE	19
Selection of Sample	19
Forms Used	23
ANALYSIS OF DATA	24
Age of Home	24
The Respondents	24
The Bathroom	28
Activities	33
Storage in the Bathroom	46
Cleaning the Bathroom	48
Orientation and Illumination of the Bathroom	79
Other Features	81
Desired Features in the Bathroom	82
SUMMARY	86
ACKNOWLEDGMENT	89
LITERATURE CITED	90
APPENDICES	93

INTRODUCTION

Cleaning the bathroom presents many problems to the homemaker which are not encountered in caring for the other rooms of the home. A large number of the problems encountered are due to the selection of the finishes, the design of the fixtures, and the layout of the room. Today the bathroom is considered a necessary room in the home, even though it is one of the newer rooms. Many of today's bathrooms in the older homes were either extra rooms which had been remodeled or else a room which had been added onto the home. Unfortunately, since the time of its inception, there have been few changes made in the room furnishings and finishes. As a result, there have been few innovations in the care the homemaker gives her bathroom. Even though many homemakers are aware that cleaning the bathroom is a disagreeable task, they are unaware of the large number of problems the bathroom presents.

There has been a tendency on the part of builders to enclose the bathroom fixtures in as small a space as possible as an economy measure. As a result, space for the major bathroom fixtures is provided, but there is not enough room in the bathroom in which to perform all the activities which might logically take place there. All the activities performed in the bathroom create special types and areas of soil which the homemaker must remove during her care of the bathroom.

Industry's research has resulted in a large number of finishes which it (industry) claims are suitable for use in the

home. Many of the finishes created are of the nature that they can be selected, installed and maintained by the homeowner himself. However, it is not known whether these products are accepted by the homeowners, and how they will stand up under actual wearing conditions. It is not known whether the problems of maintenance have increased or decreased, or whether new problems have appeared.

Industry has done much to include directions for the care of many products, especially appliances. All too frequently, no instructions are given regarding the care of the room finishes. Regardless of whether such instructions are available, the homemaker is likely to have her own "standard" cleaning practices which she uses in care for the bathroom. She does not bother to report her satisfaction or dissatisfactions with the products to the manufacturers.

At the present time little is known regarding the best layout of the fixtures providing for normal activities and facilitating care of the room. Mistakes made by the homebuilder are costly in both money and maintenance efforts. Research is now being conducted on these problems. A series of studies on the care of the bathroom is being planned by the Department of Family Economics at Kansas State University. The beginning study should investigate the problems involved in the care. The results of the present study should point the way to better planning of the bathroom layout, better designed fixtures, the selection of more appropriate finishes, and to further studies.

The objectives of this research were:

- A. To determine the bathroom activities, the type and finishes of the materials used, the design of the fixtures, and the layout of the room, with regard to the age of the home.
- B. To secure from homemakers the number and types of problems encountered in their care of the bathroom.
- C. To study cleaning practices with regard to time and facilities available for cleaning.

REVIEW OF LITERATURE

In developing this review of literature it became apparent that an extensive background of empirical research concerning either the bathroom or its care has not yet appeared. It seemed suitable, therefore, to trace the development of the philosophy concerning bathing and its effect on the facilities provided, the standards presented by authorities, and the results of such research studies as apply.

Urban areas have always been considered more modern and up-to-date than rural areas due to their concentrations of wealth and centralization of facilities. One particularly noteworthy example of this point is the inclusion of the bathroom in almost all new urban homes. Tracing its development, one notes that the bathroom was included consistently in the urban areas before appearing in rural areas.

The viewpoint of what constitutes adequate housing is constantly changing with the development of new inventions, building materials, and building theories. The popularity of magazine articles on bathroom planning and remodeling has shown that there are certain dissatisfactions with the present bathroom. Well-equipped bathrooms are to be found in the majority of urban homes. The various stages of the family life cycle place certain requirements upon the bathroom fixtures. Now the bathroom is undergoing a critical evaluation to determine what is "adequate" in terms of the number and placement of bathroom fixtures.

In the past, certain authorities studied the function of the bathroom in the home. Standards or rule of thumb theories were expounded regarding the bathroom layout and the selection of the fixtures.

Empirical research on bathrooms has been limited due to the reasons that the bathroom is a relatively new room in the home, that bathroom fixtures have a high installation cost, that little consideration has been given to the placement of the fixtures to allow logical performance of activities, and a large portion of the public is reticent on the subject. It would be valuable if these studies were reviewed to determine the direction of the research programs, and to determine in what areas of bathroom studies, future research should be concentrated.

History of Bathing

Today in the more civilized countries, the practice of bathing is considered a socially acceptable practice conducive to the health and welfare of the human race. Bathing practices have varied greatly by geographical location and period in history. For instance, Ancient Romans often bathed in milk or used an oil and scraper technique in removing soil from their bodies. In medieval times the people believed that bathing in brine had medicinal virtues. Before the development of soap in the late 18th century, lubricating the skin with olive oil was common (Ashe, 3).

Presently the eastern countries, with the exception of China, engage in numerous bathing practices. There are large numbers of public hot baths. In Northern Russia, there is a practice of annual bathing (Daubsfest) whereby the individual is ceremonially immersed. Ashe (3) and Gerhard (9) reported that steam bathing, in addition to the hot bath, is engaged in by some of the people in Russia, Denmark, Finland and other Scandinavian countries, Mexico, and Ireland. There appeared to be a pattern relating bathing to the degree of civilization in a country. With the rise of civilization in a country, the people started to take baths; with the country's decline, bathing was eliminated.

Many of the present bathing practices are the direct result of practices associated with the requirements of ancient religious rites of worship. It was felt that as a result of bathing,

man would be pure in mind and body and was therefore fit to engage in acts of worship. Body cleanliness was regarded as a token of moral purity (9).

The act of bathing was then and is now often prescribed for in religious rites. In India, as early as 2,000 B.C., the Hindus prescribed full scale immersion. However, their main objective was purification of the soul and not the removal of soil (3) The Mosaic law required the Hebrew people to cleanse the skin regularly before daily meals; before wedding festivities and birth celebrations; before entering the temple of worship; before all religious ceremonies and after every contamination. In addition, the Hebrew women were required to bathe at regular monthly intervals (9). Both the Mohammedan and Islamic religions carry the basic philosophy of bathing for purification.

The Greek writer Homer, was the first person to mention bathing in literature. In his book, The Odyssey, he tells about the Greek tribes bathing in the rivers; not only to clean the person's body, but to clean his clothes (3). The ancient Greeks considered bathing essential to the development of a sound mind. The Spartans hardened their bodies by bathing in the cold river and sea waters. A bath was always provided for a guest upon his arrival. In many of the wealthier homes, this bath was a warm tub bath (9). The first bathroom was in the City of Cnossos, on the isle of Crete, 4,000 years ago. The Greeks used a large basin or tub, but not of a size sufficient to hold the bather. They dipped water from the tub or basin and poured it over their

bodies (The Story of the Bath, 20).

Public bath houses, often attached to many of the athletic buildings, were provided by the Greeks for the less wealthy citizens. Baths in the sulphur springs at Thermopylae, Lesbos, Euboea, and others were prescribed for the cure of certain diseases (9). The development of the public bath house reached a climax late in the Roman Empire with the rise of emperors (mainly Claudius A.D. 41-54) (Cross, 7). These buildings contained also gymnasiums, amphitheaters, gardens and courts, libraries, reading rooms, and places for public orators (9). The emperor and any other citizen who wished to become popular with the multitudes, built separate public bath houses for each sex. Historians note that the rise of mixed bathing developed along with the decline of Rome.

There followed a series of periods when bathing was regarded as important, and others when bathing was not in vogue. The practice of bathing died out and was not revived again until contact was established with the Orient during the Holy Crusades (7). The Order of the Bath was developed by Henry IV of England in the year 1399. After surviving a cold bath, the knight was then considered an example to the unbathed (20). "During the Reformation (beginning in the 16th century) and Counter-reformation, nakedness was regarded as a sin, and nakedness and bathing were considered synonymous" (Bathorama, 4). This period of the unwashed lasted till the 18th century due to the rise of epidemics. This was a period of intellectual awakening, but the

enlightenment was concerned only with the mind and not the body. In contrast to the Greeks, they thought a sound mind could exist without bathing.

It has been only since the middle of the 19th century that popular bath houses have once more become established (9). No formal bathrooms were installed in homes until the late 1800's (4). From 1842 until the present century, the number of bathrooms in the home rose slowly. Retarding the adoption of the bathroom were public opinion, lack of proper materials, and customs. It was not until 1851 that a bathroom was installed in the White House, and this in the face of much opposition (3).

The proper functioning of any bathroom is dependent upon proper plumbing. The following are important dates relating to the installation of plumbing in the United States (Allen, 2).

1746 - Iron drain pipes first used.

1774 - Thought given to regulating privies in large cities.

1778 - Water closet invented.

1800 - Lead pipes in general use.

1855 - Open sewers found in Boston. Private drainage was unregulated.

1866 - Bath closets, common with no outside windows.
Had facilities for shower baths.

1869 - Water closet came into common use.

1884 - Discontinuance of the use of the bathroom during the winter months recommended. It was urged that open fixtures be used.

1918 - 1928 - The use of hot and cold water with porcelain fixtures became readily available. Drainage was regulated.

With the turn of the century, the bathtub was placed in a separate room. Plumbing and water supplies were so improved that water could be piped to every floor. This was the beginning of our present bathroom - complete with running water, central heating, tiled floors and walls (4).

Relationship of Bathrooms to Adequate Housing

In primitive society, standards of housing were simple. The home builder found the necessary land and materials conveniently nearby, and little labor was required to produce a comfortable, adequate home. Technological advances and the demands created by our complex civilization have made adequate housing harder to achieve.

New standards, larger communities, and the diminishing amount of available land make the provision of adequate shelter more costly. Sewers, water pipes, roads, lights, and sidewalks are needed for safety of health and communication (Colean, 6). No longer is the home just a shelter from the elements; now the home must provide the environment in which an individual may develop physically, mentally, and emotionally.

Adequacy of housing has been included in the United States Census since 1940. In 1940 (United States Bureau of the Census, 23) the quality of dwelling units was indicated by the combination of data on the state or repair of the home, and the plumbing facilities. The 1950 Census (United States Bureau of the Census, 22) included also, the incidence of running hot water as an indicator of the quality of housing. Comparing the 1940 and the 1950 Census (Table 1), one may note that the incidence of plumbing fixtures inside the urban home increased.

Table 1. Incidence of plumbing fixtures in urban homes in the 1940 and 1950 census.

Feature	: Percent	: Percent
	: 1940	: 1950
	: census*	: census**
Running water	93.5	--
Hand pump	0.6	--
Hot and cold piped running water inside structure	--	85.7
Only cold piped running water inside structure	--	10.7
Flush toilet inside structure		
Exclusive use	83.0	86.8
Shared	7.8	5.7
Nonflush toilet in structure	0.1	--
Other toilet (including privy)	--	6.8
Bathtub or shower		
Exclusive	77.5	83.6
Shared	7.3	5.4

Source: * Tables 7, 7a, and 7b.

** Table 8.

Modern Trends in Bathroom Planning

As an economy in construction many builders have limited the square footage of the main bathroom to 35-40 square feet. This space is adequate only for the inclusion of the main fixtures. The homemaker's dissatisfaction with the bathroom was one of the topics under consideration at the Women's Congress on Housing in 1956 (Women's Congress on Housing, 24). At this meeting, the first of an annual series, discussions were held to determine the satisfactory and unsatisfactory features of the homemakers' present homes. It was an attempt to give the builders information about the type of homes the average homemaker wants.

The features that the women felt were necessary in the home are now being included in some of the better planned homes. They felt that for a three-bedroom home, a complete bath, in addition to a half-bath at the rear entry was minimum. Certain homemakers specified that twin lavatories in the bathroom should be considered minimum. Counter-mounted lavatories would provide storage space beneath for bathroom supplies and equipment. They felt that whenever feasible, cabinets should be provided for the storage of towels, face cloths, and other items. It was stated that a compartment should be provided in a medicine cabinet or elsewhere, where medicines and poisonous substances could be locked away from children. The homemakers felt that if cost permitted, the home should contain two full baths in addition to the half-bath at the rear entrance.

Re-evaluation of the design of the bathroom could result in greater comfort and convenience. For example, a raised tub for ease in bathing children, and a separate shower. A wall-hung stool or an enclosure around the stool would make the process of cleaning easier. Included as an undesirable feature of the bathroom was a window over the tub because it was considered drafty, difficult to open and close, hazardous to clean, and deteriorated from water damage. The homemakers wanted materials which were sound-deadening, durable, and easy to maintain. Too frequently, insufficient thought is given to the placement of the bathroom fixtures to provide for privacy and convenience in use.

The following suggestions by Kennedy (14) are offered for the placement of the bathroom fixtures:

1. Three fixture bath, separate compartment.
2. Tub and lavatory together with separate toilet in compartment.
3. The three fixtures grouped but compartmented.
4. A toilet with a compartmented bath-lavatory.
5. A lavatory in the bed-dressing room.
6. Dressing room with bath and lavatory, water closet compartmented.
7. Bed-dressing-bath room, with bath and lavatory, water closet compartmented.
8. Bath-dressing room combined, with no compartmentation.
9. Bedroom, dressing room, and bathroom in a suite.

Recently there has appeared a new luxury concept in bathroom planning called "privazoning." This was developed by the Plumbing Fixture Manufacturers Association (Privazoning, 18). Under the "privazoning plan," the bedroom takes on the role of lounging, living, and recreation in addition to its use for sleep.

All grooming functions take place in a combination dressing-bathing-toilet room called a "dressatory" which adjoins the bedroom (Today's Bathroom, 21). There would be a dressatory for each occupant of the home.

Also reappearing in the home is the increasing use of the small vented inside bath with no window. Architects feel that the inside bath is better ventilated because objectionable odors are drawn off which might otherwise be distributed throughout the home. There is a constant flow of air from other rooms into the bath, and this air current keeps the bathroom temperature fairly constant. In addition, ventilation would operate all year round, whereas in other cases the bathroom window is frequently closed during the entire winter. With no windows in the room, the fixtures may be economically arranged on the walls, and the danger of slipping when reaching to adjust the window is eliminated. A properly illuminated interior bath would give better light for shaving or make-up than is usually provided by the small window (Nelson and Wright, 16).

Authorities' Suggestions

Certain well known individuals in the field of housing have set up principles which apply to the planning of bathrooms and the selection of fixtures. Ever since the beginning of the bathroom, there has been a feeling of the need for privacy. According to Neutra (17), much of the desire for privacy in the bathroom stems from modesty which, in turn, stems from a reflexive

disposition for self-protection and the lowered capacity for defense in certain moments.

The function served by the bathroom requires plumbing fixtures, maneuvering space, counter area, good lighting, and adequate storage. For one person, or possibly two, there is no reason why these functions should not be performed in a single room. But for a family there are good reasons why they should not (16).

As early as 1908, McKeen (15) stated that an ideal bathroom should be at least 10 x 12 feet with walls and floor preferably of ceramic tile. The tub should be 32 inches rim to rim, with a depth of 20 inches, and should be 5½ feet in length. In addition, the tub should be raised off the floor to facilitate cleaning.

Special problems are encountered in planning for the bathroom storage. Room must be provided for the linens used in the bathroom in addition to the soap, toilet paper, infrequently used medicines, hot-water bottles, eyecups, and a host of miscellaneous items (16).

Most men prefer showers to taking baths in tubs, and the percentage of women preferring showers is increasing. During the period when babies must be cared for, a convenient counter for bathing them needs to be provided at the lavatory (Beyer, 5).

The United States Department of Agriculture (25), while not conducting actual research, did test space requirements, and recommended the following specifications for spaces between fixtures:

In front of the fixtures allow at least:

One and one-half feet between the front of the lavatory and the front of the water closet.

Two feet between the front of any fixture and the wall across from it.

Minimum floor area needed for a person cleaning the tub - 30 inches (along the side of the tub) by 20 inches.

At the side of the fixtures allow at least:

Two inches between closet tank and lavatory.

Three inches between closet tank and tub.

Four inches between closet tank and wall at the side of it.

Six inches between lavatory and wall.

The design and the material of plumbing fixtures, the brassware which connects them to the water system, and the waste fittings should contribute to the ease of maintaining sanitation in the home. The following table by Agan shows points to consider in choosing bathroom fixtures (1):

Fixture	Desirable	Undesirable
Lavatory	Rim high enough to give comfort when using	Separate spouts
	Mixing faucet	Faucet integral with the lavatory
	Chain and plug fittings or pop-up waste	Standing waste
Bathtub	Porcelain enamel	
	Chain and plug waste fittings	Standing or pop-up waste
	Flat bottom	Rounded bottom
	Sloping back if bather wishes to recline	Straight back if bather wishes to recline

Fixture	Desirable	Undesirable
Bathtub	Built-in	Free standing
	Of a size suitable to the person using it	Too large or too small
Water closet	Large water area (minimum fouling surface)	Small water area (large fouling surface)
	Large water way	Small water way
	Vitreous china	Porcelain or porcelain enamel
	Quiet flush	Noisy
	Good fitting seat	Rounded seat

Research Relating to Bathrooms

While the major portion of the information on bathroom planning and the selection of finishes and fixtures has developed from the principles suggested by authorities in related fields, some have developed from actual research studies.

In a study of bathroom storage requirements of families with preschool children, Green found that the most desirable bathroom size was 80-89 square feet. The lavatory should be large enough and high enough to bathe a baby comfortably. She suggested having a chest of drawers built in under the counter and at the side of the lavatory to provide space for dressing the baby and give storage for clothes. Mirrored storage cabinets were to be placed over this unit. A closet was to be provided with a full-length mirror. One section of the aforementioned

closet was to have a locked medicine cabinet in it (Green, 13).

Cusick (8) evaluated the bathrooms added onto the homes of 25 families in North Carolina. A comparison between her study and the Manhattan study will be made in the discussion of data.

Finish Materials. The finish materials used in the interior portions of the home are used to protect and decorate these areas. The homemaker may assign varying degrees of importance to these two factors, but her satisfaction with the product will depend upon how they fulfill her requirements. In many of the homes sampled by Grady and Smith (10), the materials used in the kitchen and bath were the same and were easier to clean than the other materials used throughout the home. In the 206 bathrooms the following finishes were used on the walls and woodwork:

Walls		Woodwork	
Semigloss paint	21 percent	Semigloss paint	33 percent
Gloss paint	17 percent	Gloss paint	24 percent
Flat paint	16 percent	Enamel paint	13 percent
Enamel paint	14 percent	Varnish	10 percent
Paper	8 percent	Flat paint	8 percent
Varnish	1 percent	Other or none	12 percent
Other finishes	3 percent		
Other coverings	20 percent		
Total	100 percent	Total	100 percent

Grady and Smith (12) found that approximately three-fourths of the homemakers reported faults with the materials they had in their homes. These faults included:

- spots - finger marks, grease, water, fuel film;
- breaks - chips, cracks, scratches, peels;

changes - discolor, dull, wear off.

They concluded that problems were more numerous when there was heated running water available, when the finishes were applied by family members, and when the time span between cleanings was short. One-fourth of those reporting cleaning problems with their finish materials renewed rather than cleaned the materials. The problems encountered in cleaning the finishes were less in number when the finish had been protected by wax or was cared for with a vacuum cleaner. Grady and Smith (11) related that the walls and woodwork are usually refinished by two out of three families within five years. The materials replaced within a period of three years were wallpaper, gloss, semigloss, and flat paint. Two out of five replace enamel, and one out of five families replace varnish in three years. They concluded that finishes are replaced because of deterioration through use, rather than for decorative purposes. The most useful cleaning method was washing. The traditional twice a year cleaning pattern was followed, but bathroom surfaces were cleaned more often. Almost one-third of the homemakers cleaned in the bathroom at least once a week.

Method of cleaning walls

Wash	72 percent
Wipe damp	9 percent
Wipe dry	5 percent
Brush	7 percent
Vacuum	6 percent
Not cleaned -	6 percent
materials recently applied	

Method of cleaning woodwork

Wash	92 percent
Wipe damp	3 percent
Wipe dry	2 percent
Other	2 percent
Not cleaned	4 percent

It was stated that "refinishing of walls and woodwork was a recurrent cost, particularly in the homes of lower income families and those with children under eight years of age." Frequent replacement and frequent cleaning seemed to go hand in hand.

METHOD OF PROCEDURE

Selection of Sample

If a comparison were made between new and old homes, valuable information could be obtained regarding the finishes used, the size of the bathroom, and the number of activities which were performed there. In a discussion with a statistician it was decided that 40 homes would be needed (20 in each section), if a reliable comparison between new and old homes was to be made. Qualifications for a home to be included in the sample were:

1. The home owned and occupied by the people living in the dwelling.
2. The homemaker was a woman.
3. The home was built at least five years ago.
4. The home had at least one bathroom containing lavatory, stool, tub and/or shower.

The areas selected for study were chosen in consultation with an abstractor and several persons familiar with Manhattan. The following areas were selected as contrasting in time of being built.

The new area, labled A on the map shown in Appendix A, had the following boundaries: north - Ratone Street, east - North Third Street, south - Thurston Street, and west - North Juliette Avenue. Homes in this area were expected to have been built after World War II, and not over 17 years. Boundaries of the old area, labled B on the map shown in Appendix A, were: north - Bertrand Street, east - North Juliette Avenue, south - Thurston Street, and west - North Eleventh Street. The majority of the homes in this area were expected to have been built before World War II, or to be older than 17 years.

A list of home owners living in the two areas was prepared from the Manhattan City Directory for 1958. A final tally showed 51 owner-occupied homes in the new area, and 105 in the old area. Since 20 homes were desired from each section, a sample rate of one in three was used to select the homes in area A, and a sample rate of one in five was used in area B. The following methods were used to select the homemakers for the random sample list, and provision for their substitutes.

New Area:

The home owners were numbered from one to 51. Every third person beginning with number "two" was included in the sample list. The person previous to "three", or number "two" was used for the substitute list. This method provided only 17 names. In order to complete the list, every ninth person beginning with number "eight" was selected for the sample list, and every ninth person beginning with number "two" was selected for the

substitute list.

Old Area:

The home owners were numbered from one to 105. Every fifth person beginning with number "four" was included in the sample list. The substitute list was compiled by using the person listed previous to "five" or the fourth person.

The homemakers chosen for the time study were selected only after the interviews had been completed, and the problems encountered by the homemakers studied. More refusals might have been received if all homemakers were asked to keep time schedules, as it would have been difficult for all to comply. Additional variables would have been encountered in the ability of the homemakers to keep the time schedules.

Preliminary contact was made with the homemaker by means of a form letter, a sample of which is shown in Appendix B. Within ten days after the receipt of the letter, contact with the homemaker was made by telephone by the interviewer, to determine whether she was willing to be interviewed, and to set an interview time. A sample of this telephone conversation is shown in Appendix C. In order to secure the desired number of 40 homemakers, contact was made with 70 households--28 in the old area and 42 in the new area. The main reasons for substitutions were disqualifications, disinterest, and personal reasons. Thirteen, or less than half, of the substitutions were due to disinterest. The reasons for substitutions are shown in Table 2.

Table 2. Reasons for substitutes by area.

Reason for substitute	:New area	:Old area :	Total
Disqualified	<u>9</u>	<u>2</u>	<u>11</u>
Moved away	<u>4</u>	<u>2</u>	<u>6</u>
House too new	3		3
Incomplete bath	2		2
Disinterest	<u>9</u>	<u>4</u>	<u>13</u>
Personal reasons	<u>5</u>	<u>1</u>	<u>6</u>
Illness	<u>1</u>	<u>1</u>	<u>2</u>
Worked - no time	3		3
Away on vacation	1		1
Total	<u>23</u>	<u>7</u>	<u>30</u>

The number of regular and substitute people interviewed by area are shown in Table 3.

Table 3. Number of regular and substitute homemakers interviewed by area.

	: New area	: Old area
Sample	10	17
Substitute	9	4
Total homemakers	19	21

The special study of the time needed to clean the bathroom was conducted. The homemakers were selected from the 40 homemakers used in the previous study. Only the homemakers with the most commonly used finishes were asked to keep a time sheet. The qualifications to be included in this sample were:

1. Couples with children.
2. Enamel paint on walls and/or ceiling.
3. Linoleum or vinyl-plastic floor finish.

The time study was conducted after the regular interviewing period was over. The homemakers were contacted by telephone to see if they were willing to cooperate. A sample of this telephone conversation is shown in Appendix D. In order to secure the desired number of 10 homemakers, 12 households were contacted. One refusal was from a woman who was not much interested in the previous study. The other homemaker accepted and then discovered she did not have sufficient time.

Forms Used

An interview schedule, a sample of which is shown in Appendix E, was developed to determine the activities now done in the bathroom, and those preferred to be done there; the problems the homemaker encounters in the care of the bathroom; the cleaning materials and devices used in cleaning; and the kinds of materials and finishes used in the bathroom.

The interview schedule was pretested 12 times during the month of June. The schedule was revised and further pretested in September. A sample of the interview schedule is shown in Appendix E. Homemakers were interviewed between October 13, 1958 and December 2, 1958. The average time for the interview was one hour and 20 minutes.

The time schedules were kept between January 13, 1959 and January 29, 1959. A sample of the time sheet is shown in Appendix F.

Data obtained from the interview schedule and time sheet were hand tabulated. The tabulations were made on the basis of classification of homes, number of households, and family type. Findings from the tabulations are the basis of all tables and figures.

ANALYSIS OF DATA

Age of Home

The age of the home could affect the size of the bathroom and the design of the fixtures. For the purpose of these comparisons, the homes were classified according to the age of the home, regardless of whether they were located in the old or new sections. The new homes, which had been built within the last 17 years, totaled 16 in number. The old homes, which had been built 18 or more years ago, totaled 24 in number.

The Respondents

Family Type. Some of the data were classified by and tabulated by family type. The majority of the respondents lived as couples, with 13 living with their spouse only, and 17 living with their spouse and children. In two other groups, related adults and unrelated adults, there were three households in which the homemaker lived with spouse only, and one household

in which the homemaker lived with spouse and children. In the households in which there were only the adult homemaker, one lived alone, and one lived with her minor children. Table 4 shows the distribution of households by family types.

Table 4. Family types.

Family types	: Households	: Percent
Couples	30	75.0
With spouse only	13	32.5
With children	17	42.5
Related adults	4	10.0
With spouse	3	7.5
With children	1	2.5
Unrelated adults	4	10.0
With spouse	3	7.5
With children	1	2.5
One adult	2	5.0
Alone	1	2.5
With children	1	2.5
Total	40	100.0

Age of Homemaker. Almost half (48.0 percent) of the homemakers were between the ages of 41-60 years. The mean age for the group as a whole was 52.1 years. The two age groups which had the most homemakers were 41-50 years, and 51-60 years which had nine and ten homemakers, respectively. These were followed by the 31-40 and 61-70 years, with seven and six homemakers, respectively. Table 5 shows the number of homemakers in each age group.

Table 5. Age distribution of homemakers.

Age of homemakers	: Homemakers :	Percent
Over 21 - no definite age	1	2.5
21-30	3	7.5
31-40	7	17.5
41-50	9	22.5
51-60	10	25.5
61-70	6	15.0
71-80	2	5.0
81 and over	2	5.0
Total homemakers	40	100.0

Occupation of Homemakers. Most of the homemakers (70 per- cent) were classified as fulltime homemakers. Of the others, 12 or 30 percent, were employed in addition to taking care of the home. Of these, 10 or 25 percent were occupied outside the home, and the other two (5 percent) performed their work in the home. Almost all the homemakers who worked in addition to home- making, were between the ages of 35-65 years. Table 6 shows the occupations of the homemakers in relation to their age.

Table 6. Occupations of working homemakers by age.

Occupation	Age of homemaker					Total
	: N.I. :	: 35-40 :	: 41-50 :	: 51-60 :	: 61-65 :	
At home						
Child care			1			1
Real estate sales				1		1
Outside the home						
Clerical or sales	1		1	1	1	4
Switchboard		1		2		3
Cook			1			1
Nurse				1		1
Student			1			1
Total homemakers	1	1	4	5	1	12

Health of Homemakers. Some of the homemakers (32.5 per-cent) were suffering from physical disabilities which hindered or interfered with their care of the bathroom. Eleven of the 13 instances mentioned, occurred in homemakers over 51 years of age. By age, homemakers 51-60 years of age had the largest number (total 5) of instances of health impairment. A few of the women suffered from more than one physical impairment.

The most common disability (6 instances) found among the homemakers was arthritis and other troubles connected with the back. Four homemakers mentioned specifically the occurrence of arthritis in the back. One of these women also had no power in her knees with which to regain a standing position from a kneeling position. A telescoped back and undiagnosed back trouble hindered two other homemakers in bending in their care of the bathroom. One homemaker, in addition to her arthritis, suffered from such poor eyesight that it must have been impossible for her to see the soil in the bathroom.

Two other physical disorders which prevented the homemakers from getting down on their knees were phlebitis of the knee, and one homemaker had a steel plate in her knee as a result of surgery.

There were certain other disabilities. Two homemakers had to be careful in their selection of cleaning agents. One woman was allergic to certain ingredients found in some cleaning agents. The other homemaker, due to an asthmatic condition, had to limit her use of powdered cleaning agents. One woman was in

the latter stages of pregnancy. This condition, while a temporary one, did affect the way she cared for her bathroom.

Broken bones in the wrist of one homemaker limited the amount of housework she was able to accomplish. Another with the same condition, did not feel that this was any hindrance of her physical activity. Heart trouble restricted all cleaning on the part of one homemaker, and a cerebral hemorrhage allowed another homemaker the use of only one hand. This homemaker, in addition, was unable to do any bending. Table 7 shows the type of physical disabilities of the homemakers.

The Bathroom

The greatest number of homes (92.5 percent) had the main bathroom located on the first floor. Only 7.5 percent of the homes had the main bathroom on the second floor. These three homes also had a second half bath located on the first floor. Five had a half or full bath in the basement, and one had a second bath on the second floor. In all homes except one, the bathroom was adjacent to at least one family bedroom.

As an economy in building, many new homes have the bathroom adjacent to other plumbing. The largest proportion of these homes had isolated plumbing. In only six instances was the plumbing adjacent to other plumbing.

It is desirable to have extra heat in the bathroom during the performance of certain activities, i.e., bathing. There were five or 12.5 percent of the homes equipped with a separate heater

Table 7. Physical disabilities of homemakers.

Disability	: Homemakers :	Percent
Back trouble	6	15.0
Arthritis	4	10.0
Telescoped back	1	2.5
Undiagnosed back trouble	1	2.5
Allergies	2	5.0
Asthma	1	2.5
Allergy	1	2.5
Knee	2	5.0
Surgery	1	2.5
Phlebitis	1	2.5
Other	3	7.5
Broken bones in wrist	1	2.5
Cerebral hemorrhage	1	2.5
Heart trouble	1	2.5
With impairment	13	32.5
No impairment	27	67.5
Total	40	100.0

in the bathroom and these were all located in old homes.

All of the homes were equipped with an automatic hot water heater and tank, and all the bathrooms contained running hot water. Table 8 shows the location and features of the bathroom by new and old homes.

Materials Used. Plaster walls and ceilings were used in 80 percent of the homes. Of the other, a total of five or 12.5 percent, had plaster finish on sheetrock construction. These homes represented 31.2 percent of the homes in the new section. This seemingly large proportion was due to the fact that five

Table 8. Location and features of bathrooms by new and old homes.

Location and features	: <u>New</u> :		: <u>Old</u> :		: <u>Total</u>	
	:No.:	Percent:	No.:	Percent:	No.:	Percent
Location						
Bath 1st floor	15	93.7	22	91.7	37	92.5
Bath 2nd floor	1	6.3	2	8.3	3	7.5
Second bath 1st floor	1	6.3	2	8.3	3	7.5
Second bath 2nd floor			1	4.2	1	2.5
Second bath basement	2	12.5	3	12.5	5	12.5
Main bath adjacent to bedroom	16	100.0	23	95.8	39	97.5
Features						
Isolated plumbing	15	93.7	19	79.2	34	85.0
Adjacent plumbing	1	6.3	5	20.8	6	15.0
Floor heater			5	20.8	5	12.5
Automatic heater and storage tank	16	100.0	24	100.0	40	100.0
Running hot water	16	100.0	24	100.0	40	100.0
Total homes	16	100.0	24	100.0	40	100.0

project-type homes, built soon after World War II, by the same contractor, were included in the sample. Three homes, or 7.5 percent, of the total number of homes had wallboard construction. These homes were classified as old, and the bathrooms had been added on after the home had been built. All of the homes had wood sub-flooring. Table 9 shows the types of materials found on the walls and ceilings in the homes.

Size of Room. The size of the room affects the arrangement of the fixtures, the number of activities which can be performed there, and the amount of time spent in caring for the room. The average size of the bathrooms in the 40 households was 43.9 square feet. The bathrooms in the older homes averaged 1 square foot

Table 9. Materials used on walls and ceilings by new and old homes.

Materials	: New homes		: Old homes		: Total	
	:House-:		:House-:		:House-:	
	:holds	:Percent	:holds	:Percent	:holds	:Percent
Plaster	11	68.3	21	87.5	32	80.0
Plaster finish on sheetrock	5	31.2			5	12.5
Wallboard			3	12.5	3	7.5
Total homes	16	100.0	24	100.0	40	100.0

larger than the bathrooms in the new homes. The largest bathroom was 67.5 square feet and was found in an old home. The smallest bathroom was 28.8 square feet and was found in a new home.

Bathroom Layout. There were two noticeable patterns in the placement of the bathroom fixtures. The most common pattern had the tub located on one wall (generally under the window) and the stool and lavatory on another wall (22 instances) or on two walls facing each other (4 instances).

In the other bathroom pattern, the tub had been placed in a recess (8 instances) or else storage had been built in the open space at the foot of the tub (2 instances). The lavatory and stool were placed on the opposite facing wall. In these instances the tub was not located under the bathroom window.

Finishes. In the homes visited, a combination of two or more finishes were used in the bathroom. Enamel paint was the most popular finish used on the walls and ceilings, followed by flat paint. Twice the number of new homes (37.5 percent), as

compared with 16.7 percent of the old homes, used plastic tile on the walls. Wall linoleum was used in 25 percent of the old homes, whereas only 12.5 percent of the new homes used this finish.

Linoleum was the most common floor finish, followed by plastic-vinyl. A larger proportion of the old homes, as compared with the new homes, used the plastic-vinyl tile (62.5 percent for the old versus 50.0 percent for the new homes). Table 10 shows the finishes used on the walls and ceilings, and on the floors in the old and new homes.

Table 10. Finishes used in the bathroom by new and old homes.

Finishes	: New homes		: Old homes		: Total	
	:House-:		:House-:		:House-:	
	:holds	:Percent	:holds	:Percent	:holds	:Percent
Walls and ceilings*						
Enamel paint	13	81.3	18	75.0	31	77.5
Flat paint	5	31.2	12	50.0	17	42.5
Wall paper	3	18.8	3	12.5	6	15.0
Plastic tile	6	37.5	4	16.7	10	25.0
Wall linoleum	2	12.5	6	25.0	8	20.0
Floors**						
Linoleum	8	50.0	15	62.5	23	57.5
Plastic-vinyl	6	37.5	6	25.0	12	30.5
Rubber			2	8.3	2	5.0
Enameled			2	8.3	2	5.0
Total homes	16	100.0	24	100.0	40	100.0

* Other finishes mentioned once were enameled surface, varnish, shellac, and canvas covered with semigloss.

** Mentioned once were asphalt, cotton carpeting, and bare wood.

The most popular combination was enamel paint on the walls and ceilings, and linoleum on the floors. Second combination in popularity was flat paint, for wall covering, and plastic-vinyl floor covering.

Fixtures. Vitreous china was used for all the stools, and porcelain enameled iron for the other fixtures. The majority of the homes had enameled wood stool seats. The enameled wood stool seats were more prevalent in the new homes (68.3 percent), as compared to the old homes (50.0 percent).

The greater portion of all the homes had chrome fittings, with the older ones having a few more (75.0 percent as compared to 68.3 percent). Replacements of worn fixtures and fittings had resulted in some bathrooms having more than one type finish or fitting. There were seven times as many nickel fittings in the old homes as compared to the new homes, and twice as many porcelain fittings in the old as compared to the new homes. In the new homes, 31.2 percent contained brass fittings. These homes were the five project homes mentioned earlier. Table 11 shows the types of fittings found in the homes by section.

Activities

The activities connected with grooming which take place in the bathroom result in soil which the homemaker must clean. Performance of these activities also wear the finish materials used in the room. The number of activities which take place in a room are limited to some extent by the equipment of the room (in this

Table 11. Fixture fittings used in the bathroom by new and old homes.*

	: New homes		: Old homes		: Total	
	: House-:		: House-:		: House-:	
Fixture fittings	: holds	:Percent:	: holds	:Percent:	: holds	:Percent
Chrome	11	68.3	18	75.0	29	72.5
Nickel	1	6.3	11	45.8	12	30.0
Brass	5	31.2			5	12.5
Porcelain	1	6.3	3	12.5	4	10.0
Plastic			1	4.2	1	2.5
No information			1	4.2	1	2.5
Total homes	16	100.0	24	100.0	40	100.0

* More than one type fitting brings total to more than 100.

case the fixtures), and by the size of the room.

Usual Activities. The activities most commonly done in the bathroom were performed by 50 or more percent. The activities in descending order were: Tub bathing; care of teeth; shaving; brushing and combing hair; application of medicine, lotions, and powders; shampooing hair; application of cosmetics; administration of medicines; and weighing on scales.

Activities which took place in less than half but more than one-fourth of the households included: dressing, setting hair, taking a sponge bath, applying rinses, and administering medicine. Those activities taking place in less than 25 percent of the bathrooms included: storing clothes, cutting hair, taking a shower, taking care of sick, and child training. Table 12 shows the activities performed in the bathroom.

Table 12. Percent of households performing designated activities in the bathroom.*

Activity			
	: Commonly : : done more : : than 50 : : percent	: Less com- : : monly done : : 25-49 per- : : cent of : : homes	: Infrequently : : done under : : 25 percent
Bathing			
Tub	100.0		
Shower			12.5
Sponge		35.0	
Care of skin			
Shaving	95.5		
Apply medicines, lo- tions, and powder	90.0		
Apply cosmetics	75.0		
Pedicures, manicures	55.0		
Care of hair			
Cutting			17.5
Shampooing	82.5		
Brush or comb	95.0		
Apply rinses		27.5	
Setting		40.0	
Dressing			
Dress in bathroom		47.5	
Store clothes			22.5
Health			
Care of teeth	100.0		
Storing of dentures	72.5		
Administer medicine		25.0	
Weigh on scales	57.5		
Child training			5.0
Care of sick			
Administer medicine			7.5

* N = 40 households.

Activities by Age of the Home. The bathrooms in the old homes were one square foot larger than in the new homes, and it

might be expected that more activities would be done there than in the new homes. Although more people used the bathrooms in the old homes (79) than in the new homes (51), the bathrooms in the new homes were used proportionately for more activities than were the bathrooms in the old homes.

The proportion of people performing activities in the new homes exceeded the proportion of people in the old homes, in descending order in the following activities: Administration of medicines (34.0 percent higher); brushing or combing hair (30.2 percent higher); storing of clothes (23.6 percent higher); application of medicines, lotions, and powders (23.0 percent higher); weighing on scales (20.8 percent higher); pedicures and manicures (20.6 percent higher); shampooing hair (14.2 percent higher); setting hair (12.8 percent higher); cutting hair (12.5 percent higher); application of cosmetics (10.6 percent higher); storing of dentures (8.6 percent higher); dressing in the bathroom (7.7 percent higher); and applying hair rinses (7.4 percent higher).

There was, however, one activity - sponge bathing (11 percent higher) which was done to a greater extent in the old homes than in the new homes. This might be explained by the fact that 32.9 percent of the people in the old homes were 51 years of age or older as compared to the new homes in which only 27.4 percent were 51 years of age or older.

Two activities were performed once each in the new and old homes; child training in the new homes and administration of medicines in the old homes. Table 13 shows the activities

performed by people in new and old homes and the difference between the two.

Table 13. Percent of household residents performing designated activities by new and old homes.

Activities performed	: New homes : N = 51*	: Old homes : N = 79*	: Difference : New - old
	Percentage		
Bathing			
Tub	94.1	93.7	0.4
Shower	7.8	8.9	- 1.1
Sponge	15.6	26.6	-11.1
Care of skin			
Shaving	41.1	40.5	0.6
Apply medicines, lo- tions, and powder	90.1	67.1	23.0
Apply cosmetics	33.3	22.7	10.6
Pedicures, manicures	50.9	30.3	20.6
Care of hair			
Cutting	17.6	5.1	12.5
Shampooing	90.1	75.9	14.2
Brush or comb	96.0	65.8	30.2
Apply rinses	13.7	6.3	7.4
Setting	25.4	12.6	12.8
Dressing			
Dress in bathroom	43.1	35.4	7.7
Store clothes	27.4	3.8	23.6
Health			
Care of teeth	98.0	97.5	0.5
Storing of dentures	13.7	5.1	8.6
Administer medicine	74.5	40.5	34.0
Weigh on scales	58.8	38.0	20.8
Child training	3.9	--	3.9
Care of sick			
Administer medicine	--	6.3	- 6.3

* Number of residents.

Activities by Family Type. There were differences in the patterns of use of the bathroom by family type. The married couples with children (total 72 individuals) performed the most activities in the bathroom. Married couples without children performed proportionally more activities than the other groups. The activities in which they ranked high were: weighing on scales (76.9 percent), shaving (57.7 percent), dressing in the bathroom (57.7 percent), applying cosmetics (42.3 percent), sponge bathing (34.6 percent), storing dentures (26.9 percent), and caring for the sick (15.4 percent).

Hair cutting (18.1 percent) and child training (4.2 percent) were performed only by couples with children and that was a small portion of this group. Dressing in the bathroom (57.1 percent) was the only activity in which related adults ranked higher than the group as a whole. No particular activity was particular to the other family types (i.e., unrelated adults and one adult). Table 14 shows the activities by family type.

Activities by Sex. Certain activities were confined to one or almost all one sex. All the persons who applied cosmetics (26.1 percent) were adult women. A small number of women (40.0 percent) set their hair, while none of them used a hair dryer in the bathroom.

Shaving was performed by 40.8 percent of all the people who used the bathroom. Almost all the men shaved in the bathroom as compared to a small minority of the housewives (15.0 percent).

Table 14. Percent of residents performing designated activities by family type.

Activity	: Married couples : : : : : No :Related: : :Children:children:adults :Others : Total : N = 72*: N = 26*:N = 14*:N = 18*:N = 130* : Percentage				
Bathing					
Tub	94.4	92.3	100.0	88.9	93.8
Shower	12.5	15.4			10.0
Sponge	18.1	34.6	7.1	33.3	22.3
Care of skin					
Shaving	57.5	57.7	35.7	33.3	40.8
Apply medicines, lotions, powders	83.3	88.5	42.9	55.6	76.1
Apply cosmetics	27.8	42.3	14.3	15.6	26.1
Pedicures,manicures	36.1	61.5	21.4	27.8	38.5
Care of hair					
Cutting	18.1				10.0
Shampooing	97.2	42.3	71.4	83.3	81.5
Brush or comb	91.7	88.5	4.9	61.1	81.5
Apply rinse	9.7	11.5		11.1	9.5
Set	25.0	19.2			17.7
Dry in dryer					
Dressing					
Dress in bathroom	31.9	57.7	57.1	16.7	37.7
Store clothes	15.3	23.1			13.1
Health					
Care of teeth	98.6	100.0	100.0	88.9	97.7
Storing dentures	2.8	26.9		11.1	8.5
Administer medicines	56.9	76.9	14.3	44.4	85.4
Weigh on scales	41.7	76.9	14.3	33.3	44.6
Child training	4.2				2.3
Care of sick	1.4	15.4			3.8

* Number of residents.

There were twice as many women as men who took sponge baths.
Among this group were certain women with physical limitations

which restricted the use of the tub.

A greater percentage of men than women washed their hair in the bathroom. In the group married couples without children, there were almost three times as many men as women who shampooed their hair (61.5 percent versus 23.1 percent). In the group married couples with children, the percentages were 100.0 for the men versus 88.2 for the women. This tendency was also prevalent in the other family types. The women who did not use the bathroom for hair shampooing used either the kitchen sink or went to the beauty parlor. Certain women were unable to bend over the lavatory as a result of physical limitations. Table 15 shows the designated activities performed in the bathroom by preponderance of sex.

Table 15. Designated bathroom activities by preponderance of sex.

Activity	Men		Women	
	:Number:	Percent:	:Number:	Percent:
Sponge bathing	5	15.1	10	25.0
Shaving	32	97.0	6	15.0
Shampoo hair	27	81.8	27	60.0
Apply cosmetics			30	75.0
Set hair			16	40.0
Total respondents	33	100.0	40	100.0

Activities in which Two or More Persons are in the Bathroom.

Certain periods during the day are known as peak periods. During these periods one is likely to find two or more persons in the bathroom. The most common activity which took place in the

bathroom when two or more persons were there, was bathing, involving in 13 cases the tub, and in one case the shower. Two homemakers needed their husband's assistance in using the tub. In one instance there was multi-use of the bathroom when one of the individuals was using the stool. These two instances violate one of the main functions of the bathroom, i.e., privacy.

The majority of the instances showed competition between activities which generally take place at, or near the lavatory. These activities included brushing hair (8 times), shampooing hair (7 times), applying medicines and bandages (5 times), and applying cosmetics and lotions (4 times).

Other activities which involve two or more persons in the bathroom were child training (4 times), cutting hair (2 times), manicures and pedicures (2 times), setting hair, weighing on scales, and taking medicine (1 time each). There were only two groups in which instances of two or more people in the bathroom was common, i.e., couples with children (52 instances), and couples alone (12 instances). Table 16 shows the types of interference in the bathroom by multi-activity by married couples with children, and group as a whole.

Preferred Bathroom Activities. Some of the families indicated that they would prefer to perform more activities in the bathroom but were hindered by lack of equipment or lack of space. There were four times as many desired activities mentioned by the couples (37 activities) as compared to the rest of the family types (9 activities).

Table 16. Types of bathroom interference by multi-activity by married couples with children, and group as a whole.

Activity	: Number of instances			
	: Married couples:		Group as	
	: with children :		a whole	
	: House- :		: House- :	
	holds	: Percent:	holds	: Percent
Privacy interference				
Tub	9	52.9	13	32.5
Shower	1	5.9	1	2.5
Stool			1	2.5
Lavatory competition				
Brushing hair	8	47.1	12	30.0
Shaving	6	35.3	8	20.0
Shampooing hair	6	35.3	7	17.5
Brushing teeth	5	29.4	8	20.0
Applying medicines and bandages	4	23.5	5	12.5
Applying cosmetics	3	17.6	4	10.0
Other				
Child training	3	17.6	4	10.0
Cutting hair	2	11.8	2	5.0
Manicures, pedicures	2	11.8	2	5.0
Setting hair	1	5.9	1	2.5
Weighing on scales	1	5.9	1	2.5
Administering medicines	1	5.9	1	2.5
Total households	17	100.0	40	100.0

A shower in the bathroom was desired by 22, or more than half (55 percent) of the households. Only 15.0 percent of the homes were equipped with showers. Even though there was a shower in the bathroom it was not used by all members of the family. There were instances where a shower may have been taken elsewhere as there were showers available in some of the basements. In one home there were two full baths, one of which contained a shower used by the father and son for all their bathing. Only 10

percent of the total 130 family members used a shower in the bathroom. Table 17 shows the number of homes with a shower, using a shower, and preferring a shower.

Table 17. Number of homes with a shower, using shower, and preferring a shower in the bathroom.

Item	: : Total :households	: Actual :number of :households	: Percent : of total :households
Homes with shower	40	6	15.0
Households using shower	5	5	12.5
Households having and using shower	6	5	83.3
Households preferring shower	40	22	55.0
Households using and preferring shower	40	27	67.5
Total number of households	40	40	100.0

One-fourth of the households indicated a desire to have the scales located in the bathroom. If this number were added to the number of homes with scales, we would have a total of 33 or 82.5 percent.

Eight or 20 percent of the 40 households mentioned a desire for activities connected with dressing to take place in the bathroom. Dressing in the bathroom was preferred by only five or 12.5 percent of the households. The other three or 7.5 percent said they would like to have clothing stored in the bathroom. Four activities, all connected with the care of the hair, were mentioned once, i.e., shampooing, setting, drying hair with dryer, and brushing and combing. One homemaker mentioned she would prefer a medicine cabinet which could be locked. At the

present time she did not take medicine in the bathroom because of this missing feature. One homemaker also mentioned they would prefer to have pedicures and manicures take place in the bathroom. Table 18 shows the types of activities preferred.

Table 18. Preferred bathroom activities.*

Activity	: <u>Total</u>	
	:Households	: Percent
Shower	<u>22</u>	<u>55.0</u>
Scales for weighing	<u>10</u>	<u>25.0</u>
Dressing	<u>8</u>	<u>20.0</u>
Dress	<u>5</u>	<u>12.5</u>
Store clothes	<u>3</u>	<u>7.5</u>
Hair grooming	<u>4</u>	<u>10.0</u>
Shampooing	<u>1</u>	<u>2.5</u>
Setting	<u>1</u>	<u>2.5</u>
Dry with dryer	<u>1</u>	<u>2.5</u>
Brushing or combing	<u>1</u>	<u>2.5</u>
Total households	<u>40</u>	<u>100.0</u>

* Mentioned once were administration of medicine and pedicures and manicures.

Relaxation in the Bathroom. Privacy is essential in the bathroom because there are activities which people prefer to perform in seclusion. Many of these activities also perform the added function of relaxing the individual. The most common activity was reading, which was done in 45 percent of the households. Second in popularity for relaxation was having the children play in the tub. This activity was done by 22.5 percent of the households. Table 19 shows the relaxation activities

performed in the bathroom.

Table 19. Relaxation activities in the bathroom.

Activity	: Total by households	
	: Households	: Percent
Reading	18	45.0
Children play in tub	9	22.5
Soaking and meditation	3	7.5
Heat baths	2	5.0
Total households	40	100.0

Care of Clothing. A large proportion of the homemakers cared for their clothing in the bathroom. A total of 70 percent of the homemakers did some sort of hand washing in the bathroom. Of this group, 50 percent washed a small load, mainly hose. A second group (17.5 percent) washed a medium load consisting of a combination of any of the following items - hose, gloves, lingerie, or scarves. Only one homemaker washed what was considered a large load - eight to nine sweaters. Drip drying of clothes occurred in 45.0 percent of the homes.

Clothing was stored in 20 or 50.0 percent of the bathrooms. Of this total, 16 or 40.0 percent of the homes stored soiled clothes, and four or 10 percent stored everyday clean clothes there. Spot removal was done in four homes or 10.0 percent. Steaming of clothes occurred in only one home. Table 20 shows the care of clothing in the bathroom by percentage of households.

More than half (57.5 percent) of the homemakers did their hand washing once a week or more frequently. Three times as many

Table 20. Care of clothing in the bathroom.

Activity	: Households	: Percent
Storage	<u>20</u>	<u>50.0</u>
Soiled clothes	<u>16</u>	<u>40.0</u>
Everyday clothes	4	10.0
Handwashing	<u>28</u>	<u>70.0</u>
Small	<u>20</u>	<u>50.0</u>
Medium	7	17.5
Large	1	2.5
Drip drying	<u>18</u>	<u>45.0</u>
Spot removal	<u>14</u>	<u>10.0</u>
Steaming	<u>1</u>	<u>2.5</u>
Total households	<u>40</u>	<u>100.0</u>

women in married couples alone, washed once a day as compared to those who washed two or three times a week. Contrary to this, three times as many women in married couples with children washed two or three times a week as compared to those who washed once a day. Table 21 shows the frequency of hand washing in the bathroom.

Storage in the Bathroom

Home economists suggest that items should be stored at place of first use. Not all the homemakers stored their medicines in the bathroom. Of the 95 percent who did, there was an almost equal distribution between the amount of items stored. A large amount was over 16 items, medium amount 10 to 15 items, and small amount nine items or under. Table 22 shows the amount

Table 21. Frequency of handwashing in the bathroom.

Frequency	: Households	: Percent
One or more times a week	<u>23</u>	<u>57.5</u>
One time a day	<u>11</u>	<u>27.5</u>
Two or three times a week	8	20.0
One time a week	4	10.0
Less frequently	<u>5</u>	<u>12.5</u>
Two times a month	<u>3</u>	<u>7.5</u>
One time a month	1	2.5
Less than one time a month	1	2.5
Total households	<u>40</u>	<u>100.0</u>

of medicinal supplies stored in the bathroom.

The most common linen items stored in the bathroom were the towels (50 percent of the households), and facecloths (45 percent of the households). One-fifth of all the households had sheets stored, and 17.5 percent had pillowcases stored. Other items stored in nominal amounts were tablecloths, spreads, blankets, comforters, pillows, scarves, runners, and bath rug sets. Table 22 shows the linens stored in the bathroom.

Certain items other than medicinal supplies and cleaning supplies might logically be kept in the bathroom because of their use there. Toilet tissue (57.5 percent) ranked highest in the miscellaneous items followed by soap (50.0 percent) and paper handkerchiefs (40.0 percent). Toys were stored in only two of the household bathrooms. Married couples both with and without children, stored the most items in the bathrooms. Table 22

shows the miscellaneous items stored in the bathroom.

Table 22. Items stored in the bathroom.

Item	: Total	
	:Households	:Percent
Medicinal supplies		
Large - over 15	13	32.5
Medium - 10 to 15	13	32.5
Small - under 10	12	30.5
Linens		
Towels	20	50.0
Facecloths	18	45.0
Sheets	8	20.0
Pillowcases	7	17.5
Spreads, blankets, comforters	3	7.5
Tablecloths	3	7.5
Pillows	1	2.5
Scarves, runners	3	7.5
Bathrug sets	1	2.5
Miscellaneous items		
Toilet tissue	23	57.5
Soap	20	50.0
Paper handkerchiefs	16	40.0
Paper towels	3	7.5
Spot removal supplies	2	5.0
Toys	2	5.0
Total households	40	100.0

Cleaning the Bathroom

Cleaning Supplies Stored in the Bathroom. The bathroom is one of the rooms in the home where the finishes are cleaned quite frequently. It would be a convenience to store the cleaning equipment and supplies there.

More than half, i.e., 22, of the homemakers stored three or less items in the bathroom. More than one-fourth, or a total of

11 homemakers stored only one item in the bathroom. There was only one household in which as many as 10 items were stored there. Figure 1 shows the ratio between the number of items stored in the bathroom and the number of households storing these items.

Many of the cleaning agents had more than one feature - example, scouring cleanser containing a bleach. In tabulating, the cleaning agents were classified according to the major purpose. The homemakers showed an interest in testing new products which had come on the market.

There was no individual item of cleaning equipment or cleaning agent which was used in the care of all the bathrooms. A number of homes had no storage other than the medicine cabinet. Some of the homemakers in households where there were children felt that the cleaning supplies were dangerous if left in the open. In other households the homemakers felt that cleaning equipment and supplies left in the open lent a cluttered look to the bathroom.

Frequently Used Cleaning Supplies. The most frequently used items seemed to be a sponge and/or cleaning cloth and scouring cleanser, and these were used in conjunction. Scouring cleanser was used almost universally (97.5 percent) in all the bathrooms. This was also the cleaning agent most frequently stored in the bathroom (77.5 percent). The one exception in the use of scouring cleanser was a household where the homemaker used soap, a detergent, and/or ammonia.

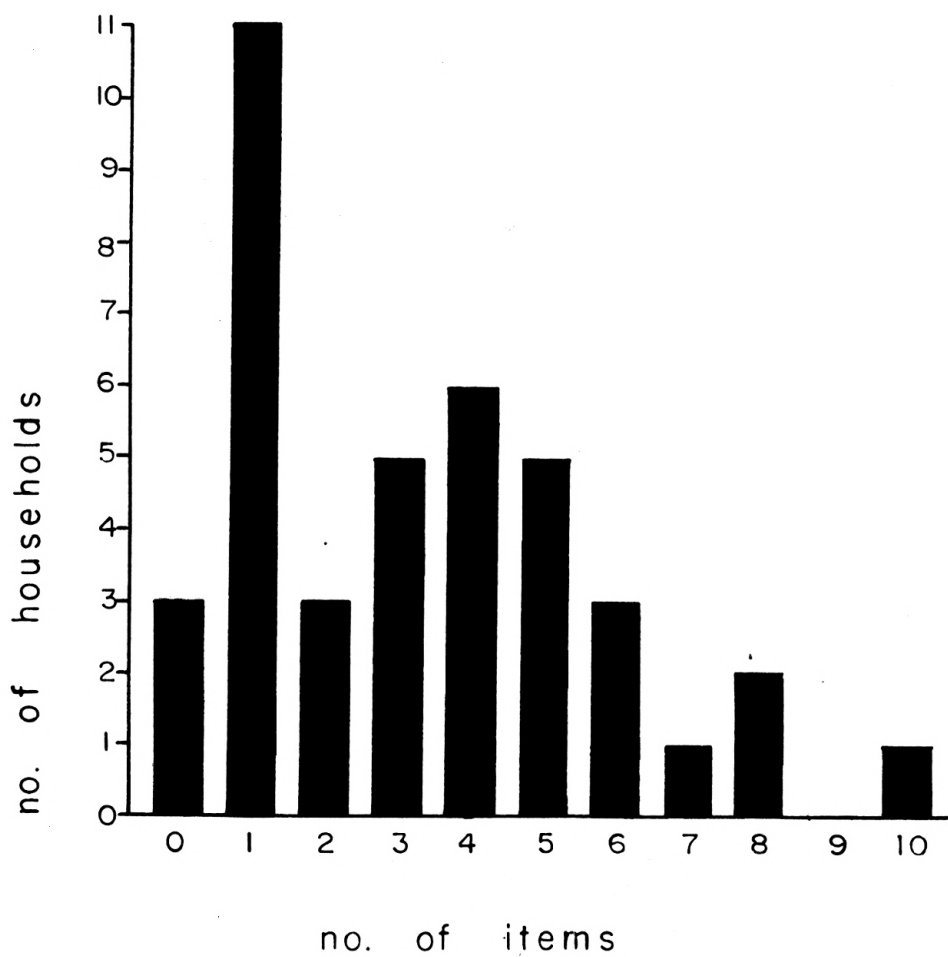


Fig. 1. Number of items stored in the bathroom.

Next in popular use in the care of the bathroom was floor wax, used in 65 percent of the bathrooms. However, this was stored in only 2.5 percent of the bathrooms.

For sanitary reasons, 62.5 percent of the homemakers used a disinfectant in their care of the bathroom. More than one-third or 35 percent stored this item in their bathrooms.

Soap or detergent was used in addition to scouring cleanser in the care of the bathroom in over half (55.0 percent) of the homes. Of the 40 homes, only one-fifth or 20 percent of the homemakers stored it in the bathroom.

Slightly less than half (47.5 percent) of the homemakers used a soil removing compound, and one-fourth of the homemakers stored this item in the bathroom. One homemaker kept one soil removing agent in her bathroom and then brought another one into the room when the floor was to be cleaned.

Bleach (32.5 percent) and glass polish (27.5 percent) were used in caring for more than one-fourth of the bathrooms. However, both items were stored in only minor amounts in the bathroom (bleach 2.5 percent and glass polish 10.0 percent).

Other items used and stored in negligible amount in caring for the bathroom were water softener, ammonia, and deodorant spray. Items which were used but not stored in the bathroom included wall wax (7.5 percent), metal polish (5.0 percent), kerosene (2.5 percent), wax remover (2.5 percent), steel wool (2.5 percent), and wallpaper cleaner (2.5 percent). Figure 2 shows the items used and stored in the 40 bathrooms.

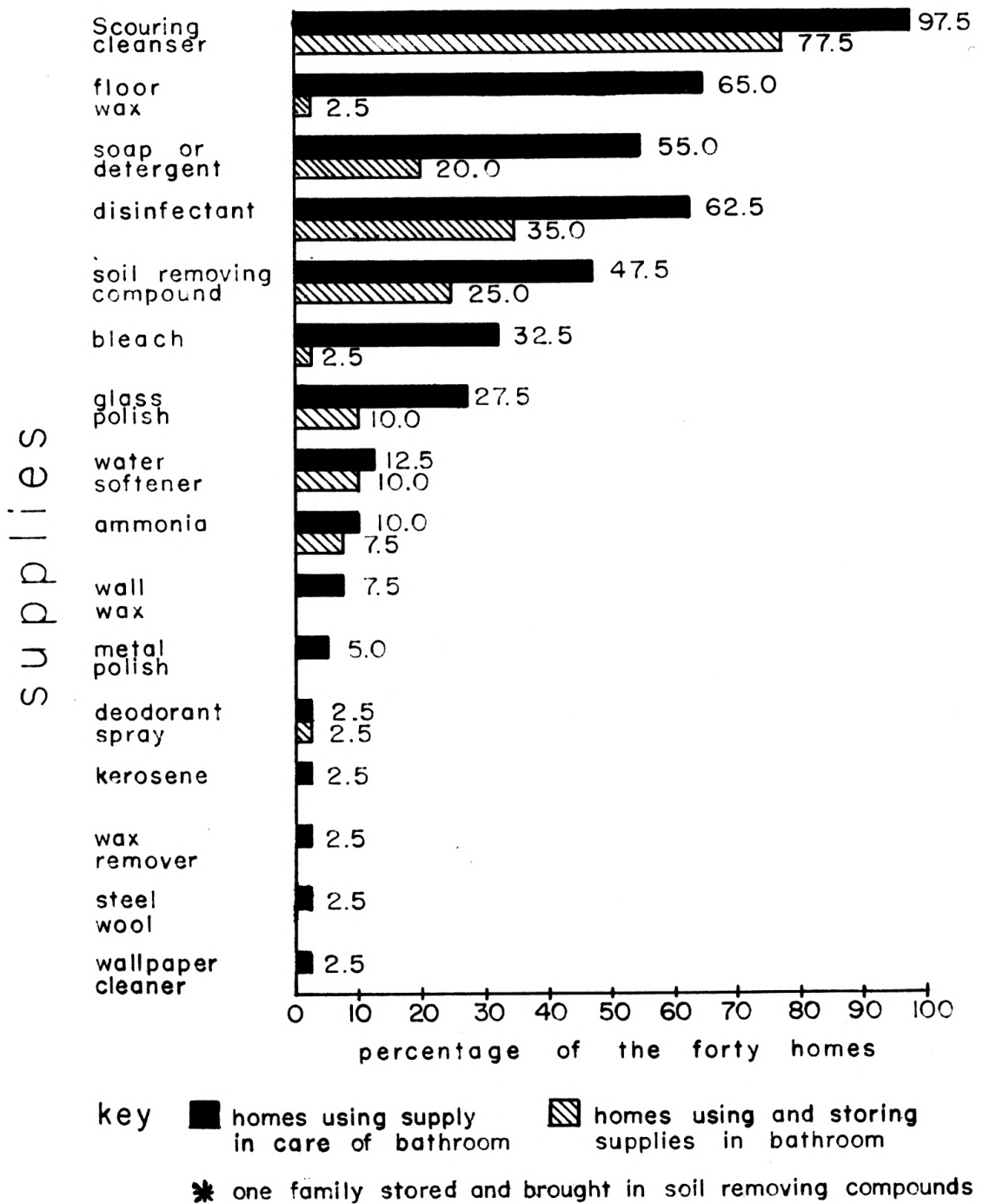


Fig. 2. Supplies used and stored in the bathroom.

Cleaning Equipment Used. Of all the items of cleaning equipment mentioned as being used by the homemakers in the care of their bathrooms, no one piece of equipment was used by all the homemakers. The most common cleaning items used in the care of the bathroom were a cleaning cloth and a stool brush or similar device on a handle (both 67.5 percent). However, with regard to these two items, the stool brush was stored more frequently in the bathroom (52.5 percent), than was the cleaning cloth (30.0 percent).

In addition to the cleaning cloth or in place of it, was the sponge which was used by more than half, i.e., 55 percent of the housewives, but stored there by only 32.5 percent. A pail or similar receptacle to hold water was used in 57.5 percent of the bathrooms. Surprisingly one homemaker used the stool bowl as her water receptacle.

Three appliances were used in the care of the bathroom, but due to their use in other parts of the home and/or their long handles, none were stored in the bathroom. The appliances in descending order of use were: mop (55.0 percent), vacuum cleaner (27.5 percent), and floor polisher (17.5 percent). One-fourth of all the homemakers used a scrub brush in the bathroom, but only 17.5 percent stored them there.

Items used less frequently in the care of the bathroom were a tub brush, venetian blind duster, dust mop, and wax applier. Of these appliances, only the tub brush was stored in any of the bathrooms and that was only by 2.5 percent. Figure 3 shows the

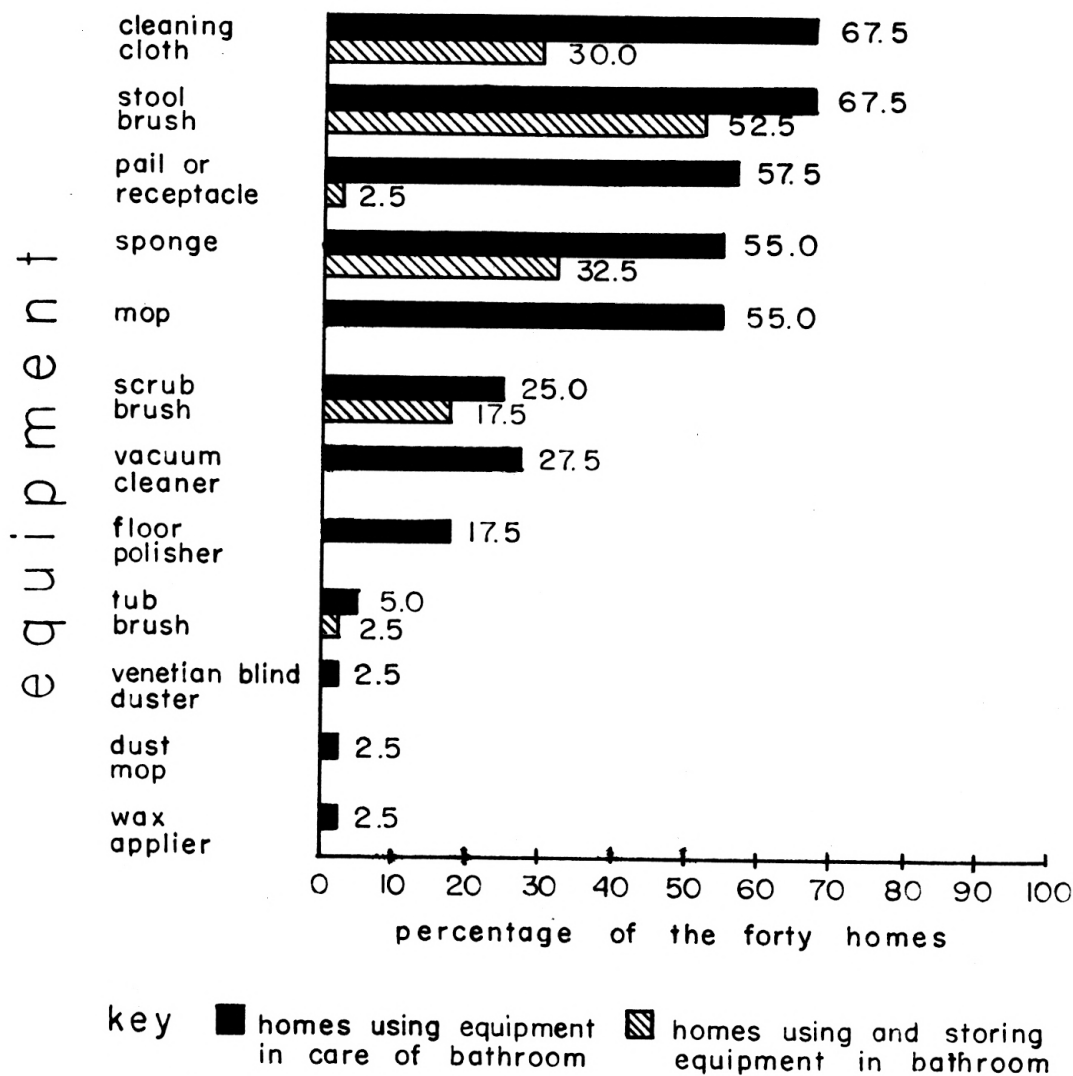


Fig. 3. Cleaning equipment used and stored in the bathroom.

relationship between the items used in caring for the bathroom and the percentage stored in the bathroom.

Problems in the Care of the Bathroom. It is known that homemakers consider housecleaning one of the least pleasant activities connected with homemaking. Many homemakers feel that the bathroom requires constant care if it is to be maintained in a sanitary condition. However, not all the homemakers consider the care of the bathroom a chore. A few homemakers felt that their bathrooms were very compact, or had finishes which were easy to care for. One homemaker felt that cleaning was her hobby. Still another homemaker stated that caring for the bathroom was just a part of daily housekeeping and that one did not stop to think about it.

Difficult Soil Removal. Difficult soil removal about the stool was one of the problems the women had encountered in caring for their bathrooms. This occurred in the majority (52.5 percent) of the homes. The most common instance of trouble occurred on the floor around the base of the stool (32.5 percent). Factors influencing this trouble were: sweating of the stool tank, accidents by young children, rotting floor, and others. Following this was the incidence of a ring on the inside of the stool bowl (10.0 percent). Other areas mentioned in connection with the stool were: the bolts holding the base of the stool; back of the lid between the stool seat and tank; and the wall area about the tank was too confined to clean it easily.

Other areas presented some problems but to a lesser extent. Areas located at or near the lavatory were mentioned as being difficult to clean in seven instances. Most prevalent was the care required by the walls near the lavatory (7.5 percent). Constant splashing while washing, also dripped water on the floor in front of the lavatory. In only one instance was the bowl of the lavatory considered difficult to clean. The soap container (2.5 percent) and exposed pipes made other homemakers consider them difficult to clean.

Floor and wall surfaces were hard to clean for some of the homemakers (17.5 percent) due mainly to the corners of the room (7.5 percent). One homemaker felt that there was not enough room between the wall and the stool (2.5 percent). In still another instance, yellowed layers of wax around the perimeter of the floor required extra pressure to remove it (2.5 percent). Uneven tile on both the floor and walls collected dirt in 5 percent of the homes, and fingerprints marred the walls in another 5 percent of the homes.

The tub encloses a larger area than the lavatory. Therefore, the homemaker has a larger area of soil to remove. There were 10 percent of the homemakers who had difficulty in removing the ring which is a result of bathing in hard water with soap. A number of the tubs stood on legs but had been enclosed. In one instance the caulking between the tub and the enclosure had become cracked and filled with dirt. The difficulty of cleaning the walls about the tub was also mentioned.

In only three instances (7.5 percent) were the fittings considered difficult to clean. In two of these instances the fittings were brass and the homemakers felt it was necessary to polish them daily as a drop of water would tarnish the fittings. The other homemaker felt her fittings were old.

In two instances (5.0 percent), the homemaker had trouble cleaning the device or apparatus which provided heat for the bathroom. One separate gas heater was difficult to clean around and under and a floor register had to be taken apart before it could be cleaned.

A venetian blind was difficult for one woman to manage since it was installed over a tub. Table 23 shows areas in the bathroom where it was difficult to remove the soil.

Areas Difficult to Clean Because Difficult to Reach. Certain areas in the bathroom were considered difficult to clean because they were difficult for the homemaker to reach. The stool was mentioned most commonly (40.0 percent) as the fixture which was placed in a location which made it hard to clean. The most common complaint in this matter was that the stool was placed in such a location that the floor behind and around the stool were difficult to reach. A few homes had the stool located in an alcove. All too frequently there was not sufficient space between the stool and the surrounding walls in which to use a mop or reach comfortably with a hand. Locating the stool too close to the lavatory so that it was almost impossible to reach the wall between the two fixtures, or placing it too close to the

Table 23. Bathroom activities and their location, and the degree of ease of cleaning.

Area plus activity:	Percent of households				
	Activities: : taking : : place : : which : : produce : : soil :	Difficult: : to remove : : soil :	Difficult: : to reach :	Requires: : constant : : cleaning :	Easiest: : spot to : : clean :
Lavatory	85.0	17.5		100.0	47.5
Cleaning up					
Shaving					
Care of teeth					
Care of hair					
Stool	10.0	52.5	40.0	50.0	2.5
Accidents					
Tub	20.0	15.0	20.0	47.5	17.5
Floor, walls, and/or ceiling	5.0	17.5	10.0	5.0	35.0
Pedicures					
Dressing					
Fittings		7.5	5.0	5.0	
Soap holder				5.0	
Mirrors				5.0	7.5
Venetian blind		2.5			
Heating		5.0	5.0		
Window			2.5		
Storage drawers			2.5		
Shelf					2.5
Total house- holds - 40	100.0	100.0	100.0	100.0	100.0

tub were mentioned in a few instances.

Seven of the eight complaints (20.0 percent) connected with the cleaning of the tub were due to the difficulty the homemaker encountered in reaching the far side of the tub. One tub originally stood on exposed legs, but had since been enclosed. The homemaker felt that the corner enclosures were difficult for her to reach. It must be pointed out again that certain homemakers found it difficult to bend over due to physical disabilities, and would therefore find it difficult to reach any low location. In still other instances, the homemakers stated that this was an extremely hard area to clean in the latter stages of pregnancy.

In addition to the tub, a few of the women had trouble in reaching the floor and in cleaning high ceilings. The same number of homemakers had trouble reaching around and behind the fittings on their fixtures, and in caring for the bathroom heating devices. Other areas mentioned as difficult to reach were the window over the tub and the top of built-in storage drawers. Table 23 shows the areas in the bathroom which are difficult to clean because they are difficult to reach.

Areas Cleaned Daily. Certain areas, regardless of whether or not they were difficult to clean, were cleaned almost daily by the homemaker. The rim and bowl of the lavatory were cleaned daily or oftener by 85 percent of the homemakers. The walls around the lavatory were wiped down by 10 percent of the homemakers due to spatters received from activities taking place at the lavatory. Splatters and drips on the floor around the lavatory caused 12.5 percent of the homemakers to care for this area

daily. Other items mentioned as being cleaned daily were soap containers, mirrors, a glass shelf over the lavatory, the floor, and the decorative molding at the top of wall tile.

Half of the homemakers cleaned some part of the stool daily. Almost one-third (32.5 percent) gave it a general cleaning daily. Others mentioned wiping around the base, removing a troublesome water deposit ring in the bowl, and wiping down the seat and top of the stool tank.

Almost half of the homemakers (47.5 percent) cleaned the tub and its vicinity daily. In the major number of instances (42.5 percent) it was only the tub, and this was a result of the inability of the homemaker to get family members to clean the tub after bathing. Splashing from the tub on the floor was also troublesome to a few homemakers. Table 23 shows the area in the bathroom which were cleaned daily.

Areas Easy to Remove Soil. Regardless of the fact that some homemakers found it difficult to remove soil at certain areas in the bathroom, others found it easy to clean at the same places. Three-fourths of the homemakers said the areas were easy to clean due to the particular finish in that spot. The remainder said that the finishes used in the bathroom had no effect in the ease of cleaning.

The ability to move about in adequate work space was considered to contribute to ease of cleaning by 67.5 percent of the homemakers. The rest of the homemakers considered the amount of work area as having no effect upon the ease of cleaning.

Almost half (47.5 percent) of the homemaker felt that the lavatory was the easiest place to clean in the bathroom. A total of 16 homemakers said they would prefer to clean the lavatory in preference to other areas of the bathroom because it was at a height that was easy to reach. One homemaker considered the lavatory easy to clean because she kept her cleaning supplies there and "she didn't have to move" to reach them. Other items mentioned in connection with the lavatory were that it had a "good grade of finish" and that it was "out in the open."

A total of 14 homemakers (35.0 percent) felt that the floor and walls were easy to clean. The major portion or 12 homemakers gave the following reasons for their reply that the floor was easy to care for: a specific material was used on the floor (four instances), they could use a mop (three instances), the area to be cleaned was small (two instances), they had enough space so that they did not have to bend (two instances), and the floor was covered with rugs, one of which was wall-to-wall carpeting, which absorbed much of the water and soil.

Several reasons (17.5 percent) were given by the homemakers for their statement that the tub was the easiest spot to clean in the bathroom. Three of the homemakers who had enclosed their tub felt that it was a convenience in their care of the bathroom. Two felt that their tubs were made of a "good grade finish." Another thought that because the tub was the "biggest" fixture, it was the easiest to clean. Other places regarded as easily cleaned by a few homemakers were the mirrors on the medicine

cabinet; the stool because she "just dropped the cleaning agent in"; and a shelf in the bathroom. Table 23 shows the areas in the bathroom which are considered easy to clean.

Activities Producing Soil. The activities which take place in the bathroom result in soil which must be removed by the homemaker. Most of the activities mentioned as creating a cleaning problem for the homemaker took place in or at the lavatory. The most common complaints mentioned in connection with cleaning up at the lavatory were spilling water on the floor (two instances), the soap, soil, and hard water ring (eight instances), water splashed on the wall (five instances), and the film in the soap container (one instance). Shaving resulted in a mixture of soap and hair being deposited in the sink. Toothpaste spatters landed on the walls and on the lavatory as a result of people caring for their teeth.

Three of the five instances mentioned in connection with the care of the hair were the result of brushing or combing. The other two instances were shampooing and cutting hair.

One-fifth of the houses had soil resulting from activities taking place in the tub. The most common problem (six instances) was the ring of soil resulting from the combination of soil, soap, and hard water. Other instances mentioned were water overflowing onto the floor from the tub, and water fighting in the bathroom. The homemakers said that in these cases she found "water over everything."

Other instances requiring cleaning were accidents in using the stool, which caused extra work for 10 percent of the homemakers, mostly in households where there were young children. When dressing occurred in the bathroom, clothes were strewn on the floor. It was interesting to note that this occurred in a household where there were only adults and no children. The caring for the feet, i.e., pedicures, resulted in soil deposited on the floor for one (2.5 percent) homemaker to clean up. Table 23 shows the activities producing soil in various parts of the bathroom.

Time Schedule. A selected group of 10 homemakers were asked to keep a time schedule during their main cleaning of the bathroom. The households chosen consisted of those in the largest family group and they had the most commonly used finishes in their bathrooms. Six homemakers with linoleum as a floor covering and four homemakers with vinyl as a floor covering kept time schedules.

The majority of the homemakers cleaned their bathrooms in a piece-meal fashion. Unexpected visitors and stopping to care for children accounted for a number of interruptions. Then too, some of the homemakers combined the bathroom cleaning process with their other housework.

The average cleaning time was 39.4 minutes. The average size of the bathrooms with linoleum as a floor covering was 43.5 square feet. The bathrooms with vinyl-plastic floor covering had an average of 39.9 square feet.

The most noticeable difference was in the length of time needed to clean the floor. There was a difference of 3.1 minutes in favor of the vinyl. Even though the vinyl floor averaged 1.1 minutes longer in waxing, there was still a saving in time of two minutes in favor of the vinyl.

The fixture which took the most time to care for was the tub. The average time for the whole group was slightly less than five minutes. The stool was next in the amount of time required for its care. The fixture which took the least amount of time to clean was the lavatory.

Certain items of cleaning are performed at stated intervals throughout the year and are not included in the regular cleaning process. The portion of the room which was reported as taking the most time in cleaning was the walls, followed in decreasing order by the windows and ceiling. These cleaning items were reported by only three of the homemakers who kept the time schedule. Table 24 shows the mean cleaning time for the various parts of the bathroom.

Periods of Cleaning. More than two-thirds (67.5 percent) of all the homemakers cleaned the bathroom to some degree every day. The largest group (47.5 percent), in addition to spot cleaning every day, also performed a thorough cleaning of the whole room once a week. Certain homemakers (10.0 percent) spot cleaned daily and then gave the bathroom a thorough cleaning two or three times a week. Periods mentioned for thorough cleaning, in addition to every day spot cleaning, were every other weekend and once a month.

Table 24. Mean average cleaning time in minutes in the weekly care of the bathroom.

Item	: Mean average cleaning : time in minutes during : weekly cleaning
Regular cleaning*	
Collect cleaning equipment	2.5
Tub	4.9
Lavatory	3.4
Stool	4.2
Empty waste paper basket	1.6
Wash floor	6.2
Linoleum	7.6
Vinyl	4.5
Wax floor	3.6
Linoleum	3.2
Vinyl	4.3
Put away cleaning equipment	4.0
Other cleaning**	
Ceiling	5.0
Windows	5.7
Walls	14.5

* Most homemakers performed these activities.

** A small number of homemakers performed these activities.

Almost one-third of the homemakers cleaned their bathrooms every other day or less frequently. The major portion of these people cleaned, in addition to every other day, at least once a week. One homemaker said that she just cleaned every other day. Table 25 shows the periods of cleaning in the bathroom.

Cleaning by Age of House. It might appear that the age of the home affected the number of times the bathroom was cleaned per week. It must be remembered, however, that the younger homemakers lived in the newer homes with more bathroom activities, and these factors may have been more important than the age of the home.

Table 25. Periods of cleaning in the bathroom.

Care of bathroom	:Households: Percent	
Every day	<u>27</u>	<u>67.5</u>
Every day + one time a week thorough	19	47.5
Every day + two or three times a week thorough	4	10.0
Every day + every other weekend	2	5.0
Every day + one time a month	2	5.0
Every other day or less	<u>13</u>	<u>32.5</u>
Every other day + one time a week thorough	12	30.0
Every other day	1	2.5
Total households	<u>40</u>	<u>100.0</u>

In the greater proportion of new homes (more than four-fifths), the bathrooms were cleaned to some degree every day. In comparison, only 58.3 percent of the bathrooms in older homes were cleaned to any extent every day. Table 26 shows the proportion of homes cleaning every day and less frequently in each home classification.

Table 26. Frequency of bathroom cleaning by new and old homes.

Cleaning	: <u>New homes</u> :		: <u>Old homes</u> :	
	:Households:	Percent	:Households:	Percent
Every day	13	81.3	14	58.3
Less frequently	3	18.7	10	41.7
Total households	16	100.0	24	100.0

Seasons Producing Soil. The various seasons of the year present different types of soil for the homemaker to remove in

her care of the bathroom. More than half (57.5 percent) of the homemakers felt that during the summer the bathroom required the most care. The homemakers felt that the reasons for this increased care were: more people took baths, more children used the bathroom as they were not in school, the children played out of doors longer and brought in more mud, there was more dust in the air, and there was more condensation on the stool tank. In contrast, in the winter there was only 17.5 percent who stated that the bathroom required the most care. Reasons given for their replies were as follows: dust from furnace, mud from out of doors, and extra company at Christmas.

Dampness, steaming, and their husband's hunting were responsible for extra soil in the spring and fall for certain homemakers. It was interesting that 15 percent of the homemakers felt that there were no seasons when the bathroom required special care. Certain homemakers felt that with air conditioning, the number of cleaning problems decreased or was eliminated altogether. Table 27 shows the seasons requiring special care in the bathroom.

Table 27. Seasons requiring special care of the bathroom.

Season	:Households :	Percent
Summer	23	57.5
Winter	7	17.5
Fall	3	7.5
Spring	1	2.5
No special care	6	15.0
Total	40	100.0

Short Cuts Developed in Cleaning. As a homemaker repeats her cleaning process she is apt to develop some short cuts which reduce her cleaning time. Some of the homemakers gave a number of cleaning short cuts and six homemakers felt they had developed no cleaning time savers.

Almost half (47.5 percent) of the homemakers felt that if everyone cleaned the tub and lavatory after using, it would cut down on the cleaning time. One-fourth felt that detergents and water softeners used in bathing, and/or modern cleaning agents reduced cleaning time. A little less than one-fourth of the homemakers felt that they could make their cleaning easier by having a specific cleaning time and pattern, and doing a "little bit as you go along." Other cleaning short cuts mentioned were: wiping walls after taking shower, the use of kerosene and rain water - soap jelly as cleaning agents, the use of a rubber spray to rinse out tub after scouring, having older children clean bathroom instead of homemaker, keeping a sponge in the soap container, using a stool brush to clean the far side of the tub, and using a sponge rather than a cleaning cloth. Table 28 shows the time savers in caring for the bathroom.

Table 28. Time savers in cleaning the bathroom.

Time saver	:Households: Percent	
Everyone cleans out tub and lavatory	19	47.5
Water conditioners and cleaning agents	10	25.0
Specific time and cleaning pattern	9	22.5
Total households	40	100.0

Fixtures. The type, design, and the number of decorative details on a fixture affect the ease of care in cleaning the particular fixture.

A. Lavatories. All the lavatories were rectangular in shape and 85 percent of them were wall hung. The other types of installations in descending order of use were: legs, pedestal, and built-in. Almost all of these latter types were found in the older homes.

In many of the homes the majority of features which were hard to clean were concerned with the fittings. More than half (57.6 percent) of the homes had the fittings with features hindering ease of cleaning. These features included: All in one piece; located very close together; or the fittings were installed too close to the back splash or wall. Two-fifths of the lavatories had a line of soil around the fixture installation. Other noticeable defects in connection with the fittings were: projecting spouts if fittings were installed too close to the platform of the lavatory, and difficulty in cleaning plastic or corroded nickel fittings.

The basin overflows in a sink are necessary but in some designs, are liable to get chipped or worn. There were seven instances (17.5 percent) where the finish had either worn away or had been chipped, and the sinks had developed rust stains.

Other design features contributing to difficult cleaning included slight depressions around the drain installation where dirt had collected. A pop-up drain interfered with the ease of

cleaning for one homemaker. Depressions for design on the outside of the lavatory; or in certain cases, soap holders, can also collect soil. Certain basins had indentations at the back of the bowl. One bowl had indentations at the sides of the basin. If there were no drip rim on the top of the lavatory, water would run onto the floor. Table 29 shows the design features of the lavatory which hinder care.

Table 29. Features in design of lavatory which hinder care of the bathroom.

Feature	:Households: Percent	
Fittings		
All in one piece or too close together or too close to back	23	57.5
Fittings attached to sink and/or in a depression	16	40.0
Hard to clean under projecting spouts	3	7.5
Plastic fittings	1	2.5
Drains		
Sewer vent rust	7	17.5
Depression at drain	2	5.0
Drain pops up	1	2.5
Indentations		
Soap	6	15.0
Outside for design	3	7.5
Back of bowl indented	3	7.5
At sides of bowl	1	2.5
Other		
Very small lavatory	2	5.0
Flat top	1	2.5
Pedestal	1	2.5
Total households	40	100.0

B. Tubs. All of the tubs were rectangular in shape, and 95 percent were recessed or enclosed. The enclosed tubs set in a

frame on their original legs. This device had been used to modernize the appearance of the tub or to make it unnecessary to clean under it. Two of the recessed tubs had an extended flat rim along the front for safety purposes. The remaining two tubs stood on legs and were found in the older homes.

In a manner similar to the lavatories, many of the tubs had depressions for decorative effect or for safety purposes. The majority of the instances (57.5 percent) had decorative ridges on the outside of the tub. Ridges for safety purposes were molded into the bottom of the tub in three or 7.5 percent of the cases.

Other features causing difficulty in cleaning follow. All of these complaints were noticed in the older homes. One-fifth of the homes had tubs which were improperly enclosed and as a result, the caulking collected soil. In another instance, soil collected between the cracks of a quarter round placed between the tub and the linoleum floor covering.

One-fifth of the tubs had depressions around the waste drain. Although this feature was not considered offensive to the homemaker or too difficult for her to clean, there was a definite soil ring at this place.

Chrome fittings are recognized as being easy to care for and had been installed in a number of homes. Porcelain and nickel fittings generally require extra care. These were present in about 10 percent of the tubs and half of these showed that it had been difficult to clean them as there was a dirt line around them. In one home the fittings were located on the wall above the tub,

thus giving extra wall area to clean when caring for the tub. There was an instance where the fittings were all in one piece and it was difficult to reach between the fittings when cleaning.

In seven instances (17.5 percent) it appeared the tub had been placed in a porcelain shell. In five of these instances an overlapping strip of metal was placed between the top and bottom parts of the tub. In the remaining instances, there was a deep depression between the two parts of the tub. Table 30 shows the features in the design of the tub which hinder care.

Table 30. Features in design of tub which hinder care of the bathroom.

Feature	:Households: Percent	
Depressions		
Ridges outside of tub	23	57.5
Improperly enclosed	8	20.0
Depression around drain	8	20.0
Ridges in tub	3	7.5
Fittings		
Porcelain or corroded nickel	4	10.0
Dirt line around fittings	4	10.0
Fittings on wall	1	2.5
Fittings in one piece	1	2.5
Tub in two pieces	7	17.5
Uneven front	2	5.0
Quarter round on floor between tub and linoleum	1	2.5
Total households	40	100.0

C. Showers. In the six houses with showers, five were located in the tub enclosure. The sixth shower was located in a

full second bath. It was used entirely by a father and son.

All of the older homes and the one with the shower in the second bath had the shower enclosed with a shower curtain. In one home no covering was used. In the other the shower was not used due to defective plumbing. Table 31 shows the location of the showers and the enclosure.

Table 31. Shower location and enclosure in the bathroom.

Shower	: Households :	Percent
Location		
In tub	5	12.5
In second bathroom	1	2.5
Enclosed in		
Shower curtain	4	10.0
No covering	1	2.5
Do not use	1	2.5
Total households	40	100.0

D. Stools. Although the greater proportion of the homes had wash-down type stools, 30 percent had the reverse trap type. None had the siphon jet type of stool. The older homes had a greater proportion of the reverse type stools than the new homes.

Bolts which held the stool in place on the floor appeared to be a design feature difficult to clean. There were 16, or 40 percent of the homes with difficulties relating to these bolts. In the majority of these cases the bolts had corroded. In other instances the bolts were extremely large or they had been located in a depression on the base of the stool.

Other features of design contributed to difficulty in cleaning. Ridges were used for design on some of the stools. More than one-fourth (27.5 percent) had ridges along the base. Depressions were also used on the top of the storage tank in 12.5 percent of the homes. Corroded fittings on the stool seat and handle, and exposed pipes proved difficult cleaning features in a few of the homes.

There were some features which contributed to ease of cleaning. There were twice as many stools with a wide area between the bowl of the stool and the storage tank in the new homes than in the old homes. It was interesting to note that some of the stool bolts had removable porcelain caps. This feature was found almost equally in the old and new homes. Other features which seemed to aid in the cleaning were plastic seat fittings and perfectly smooth exteriors. Table 32 shows the features in the design of the stool which hinders the care.

Table 32. Features in design of stool which hinder care of the bathroom.

Feature	: Households: Percent	
Bolts*	16	40.0
Ridges		
Base of stool	11	27.5
Storage tank cover	5	12.5
Corroded metal		
Fittings on seat and handle	3	7.5
Exposed pipes	2	5.0
Total households	40	100.0

* Corroded, depressed, or large.

Room Arrangement. The room arrangement affects the number of activities which are performed in the bathroom, and the ease of cleaning. Only half of the homemakers felt that the room arrangement had an effect upon the way they cleaned the bathroom. Their comments were in reply to an open end question and were varied as follows:

- "This bathroom is easier to clean than some others."
- "This small bathroom is easier to clean than a large one."
- "I have a definite cleaning pattern."
- "If there had been more room about the stool it would be easier to clean."
- "I would not have to bend if the stool were located better."
- "A bigger bathroom than I have would be easier to clean."
- "I have to step into the tub to clean the window."
- "If the bathroom was located nearer the bedrooms it wouldn't have to be cleaned so often."
- "The present bathroom gets dirtier because the boys drip water when they reach for the towel racks on the other side of the room from the lavatory."
- "If I had storage space the bathroom would be easier to clean."

Condition of Finishes Affecting Cleaning. For the main part (55.0 percent), the finishes were replaced when they were worn and the homeowners felt they needed replacing. However, one-fifth of the homemakers felt that the worn finishes would not be replaced until the family had sufficient funds. A specific time limit on the finishes, i.e., three to four years, was mentioned by only 12.5 percent of the homemakers. Replies in minor amounts to the question of when they planned replacements were: When they had the time, and the homemaker just didn't know. Table 33 shows the period of time since redecorating, and the reasons for replacing the finishes.

Table 33. Period of time since redecorating the bathroom.

Replacement	: Households: Percent	
Period of time since redecorating		
1 year or less	12	30.0
2 - 4 years	16	40.0
5 - 7 years	11	27.5
8 - 10 years	1	2.5
When plan replacements		
Worn out and needed	22	55.0
Worn and have money	8	20.0
Within 3 years	4	10.0
When have time	3	7.5
Within 4 years	1	2.5
Don't know	2	5.0
Total households	40	100.0

Although almost half (47.5 percent) of the homemakers had replaced their finishes in a period of less than two years, only 30 percent felt that the present finishes were any easier to clean. The majority of the homemakers had simply replaced the finish with a similar finish rather than selecting a different type. Of the 52.5 percent of the homemakers who had finishes over two years of age, 32.5 percent felt that they were harder to clean. In this group the finish was mainly paint. In the homes where there were wall tiles, the homemaker felt there had been no change in the ease of care as the tiles aged.

When asked if the condition of the finishes affected their cleaning practices, less than half (16) of the homemakers felt they had to change or adapt their cleaning practices as the finishes used in the bathroom got older. A total of five homemakers felt that their cleaning practices had not changed because

of new problems they encountered but rather because of new cleaning compounds which had appeared on the market. A change in the finish also affected the way some of the homemakers cared for their bathrooms. The addition of new finishes or the condition of old finishes changed the homemakers' cleaning patterns as follows:

"We installed plastic tile, and now I clean the bathroom more regularly."

"Since we installed plastic tile I have no streaking of the walls."

"The plastic tile is easier to care for than paint."

"The plastic tile has to be dried off, a job I didn't have before."

"I had wall to wall cotton carpeting installed over torn linoleum, now I vacuum instead of scrubbing."

"I find flat paint harder to clean than enamel paint."

"Paint collects dust and stains, and is harder to clean than the previous finish."

"The present flooring doesn't require as much care as the torn linoleum did."

"The walls are cracked, the paint is peeling and the plaster is falling."

Previous Bathroom Cleaning Problems. In order to be sure that the homemakers had sufficient knowledge to evaluate their present bathrooms, they were asked to tell of other cleaning problems they had encountered in previous bathrooms. Surprisingly, four of the homemakers had never lived in a house with a bathroom before the present home. The problems stated by the rest of the homemakers were great in number and were as follows:

A. Floors.

"I had trouble cleaning terrazzo and linoleum floors."

"I lived in a house where there was a hardwood floor in the bathroom. We had to be careful about spilling water."

"There was a house where the ceramic tile floor in the bathroom was improperly laid. I always had sand coming up."

"There was a bathroom with white tile floors which showed the dirt."

"We had a painted wooden floor molding which was hard to clean."

"An asphalt floor was improperly laid and was uneven."

"One bathroom had cork tile on the floor."

B. Walls.

"I once had a bathroom with wallpaper which was harder to clean."

"One bathroom we had, had old paint and water marked paper on the walls."

"We had ceramic tiles on the walls. They had lost their glaze and I had to clean them with a toothbrush."

"Paint on the walls was harder to clean than tile."

"We had wall oilcloth which came loose around the tub."

C. Fixtures.

"There was a bathroom with a shower but no bath. Water was splashed about."

"We had a tub on legs which was hard to clean under."

"Exposed pipes from the fixtures were hard to clean around."

"There was a bath with no lavatory. We used the tub or went into the kitchen."

"The worn finishes on the fixtures just made scrubbing harder."

"Paint was peeling off one shower and created a cleaning problem."

"The fixtures were old and the designs just collected dirt."

D. Other.

"We had hard water which always left spots and rings in the lavatory, stool and tub."

"One bathroom had rat and mice holes in it."

"More people used the bathroom and as a result I had more dirt to clean."

"I had a larger bathroom to clean, there was more space to get dirty."

"We lived in an old house and the bathroom was just added on without much thought."

"One bathroom had no water in it. We had to carry the water in."

"There was a bathroom which was very small and it was always messy."

Orientation and Illumination of the Bathroom

It has been suggested that a home with the living area on either the south or east, and the service area facing west or north would be well orientated for this climate. However, in this section of Manhattan, the homes and streets are laid out in a gridiron pattern. Thus, climate orientation is not always possible, or else little thought had been paid to this subject when the home had been planned.

The number of windows in the bathroom, and their location affect both ventilation and illumination. Almost all (37 or 92.5 percent) of the homes had one window in the bathroom. Only three homes had two windows per bathroom. The greatest number (16 or 40.0 percent) of the windows faced west, followed in descending order by those facing south (11 or 27.5 percent), east (10 or 25.0 percent), and north (6 or 15.0 percent). Two of the homes with two windows in the bathroom had southwestern cross ventilation. The other home had the two windows facing an eastern exposure. Table 34 shows the number and orientation of the bathroom windows.

Table 34. Number and orientation of bathroom windows.

Number of windows	Orientation			
	: North	: East	: South	: West
One window	6	8	9	14
Two windows		2	2	2
Total	6	10	11	16
Total windows	43			
Total households	40			

Adequate light from any source allows an individual to perform activities without annoying shadows, and permits the homemaker to see the soil. For cleaning, one needs light which is comparable to the light needed for the performance of activities. If one had adequate light for the performance of activities, one would have adequate light for seeing soil. Better Light-Better Sight for the Homes of America (19) recommended a light meter reading of 25 footcandles for activities where hands and vision were involved. The readings at the mirror were considered adequate if they were over 30 footcandles because that is the recommendation for shaving and applying makeup.

Light meter readings were taken at the time of the interview. For this reason there were variations due to: dark days, sunny days, location of bathroom in the home, artificial lighting at night, and others. The readings were taken under conditions similar to the ones the homemaker encountered in her care of the bathroom. Light meter readings were taken at the following places:

Mirror - Approximately 4 feet 11 inches from floor.

Lavatory - Bottom of basin.

Tub - At drain.

Stool - Right side.

Any place difficult to clean, as at the back of the stool.

The greater proportion of the bathrooms did not have adequate lighting for the activities of cleaning which took place there. There seemed to be but little difference between old and new homes. A resume of the footcandles of illumination found at the

various stations, and their adequacy is found in Table 35.

Table 35. Comparison of recommended and actual light meter readings in the bathroom.

		: Light meter readings found		
		: in homes		
		:House-:		
Location	Recommended level of lighting	Level	holds	Percent
Mirror	30 or more footcandles	Adequate	15	37.5
		Inadequate		
		20-29 f.c.	3	7.5
		11-19 f.c.	5	12.5
		Under 10	17	42.5
Lavatory	25 or more footcandles	Adequate	3	7.5
		Inadequate		
		11-24	12	30.0
		Under 10	25	62.5
Tub	25 or more footcandles	Adequate	2	5.0
		Inadequate		
		11-24	2	5.0
		Under 10	36	90.0
Stool	25 or more footcandles	Adequate	--	--
		Inadequate		
		11-24	--	--
		Under 10	38	95.0
Other places difficult to clean	25 or more footcandles	Adequate	2	5.0
		Inadequate		
		11-24	1	2.5
		Under 10	24	60.0
Total households			40	100.0

Other Features

Originally it had not been planned to evaluate all of the features found in the bathroom. However, later on in the study, it was discovered that an evaluation of certain bathroom features

had been conducted in North Carolina. The features in the Manhattan bathrooms were evaluated in a manner similar to those in North Carolina. Table 36 shows the comparison of the Manhattan and the North Carolina bathrooms with regard to their features.

Desired Features in the Bathroom

The large number of desired items showed that the homemakers were dissatisfied with their present bathrooms and that they had given thought to the features they would look for in their next bathrooms. Four of the homemakers felt that the bathroom should be only large enough to contain the three necessary fixtures. The rest of the homemakers had a large list of wants which they desired in their next bathroom.

More than half (55.0 percent) of the homemakers desired two features which they did not have in their present bathroom. As mentioned previously, a shower was wanted by the majority of the homemakers, and the most of these said they would prefer to have the shower in conjunction with the tub.

Linen and other storage space was wanted by the majority of the homemakers. Many of these said they would like to see built-in storage in connection with either a lavatory or dressing table.

A dressing table was desired by 15 or 37.5 percent of the homemakers. More than one-fourth or 27.5 percent of the homemakers wanted at least one large mirror. The major portion of the homemakers said they would like the mirror over the dressing table.

Table 36. Evaluation of bathroom features in North Carolina and Manhattan.

Feature	: Wholly satisfactory	: Satisfactory	: Unsatisfactory
Size of bathroom			
North Carolina	72 sq. ft. or more (3)	29-68 sq. ft. (22)	30 and 33 sq. ft.
Manhattan		33-68 sq. ft. (37)	32 or less (3)
Windows			
North Carolina	2 windows (2)	1 window (21) No window (2)	
Manhattan	2 windows (3)	1 window (37)	
Lights			
North Carolina	3 light fixtures (7)	1 or 2 light fixtures (18)	
Manhattan	3 light fixtures (6) 4 light fixtures (1)	1 light fixture (20) 2 light fixtures (13)	
Doors			
North Carolina	1, 2, or 3 doors (25) 2' 6" or wider (15) Wide enough for washing machine if necessary	Door swinging into other rooms, hall, or porch (3)	Directly in line with front door. Door swinging into bathroom if space was limited (11)
Manhattan	1 (34), 2 (5), or 3 (1) doors 2' 6" or wider (20)	Door swinging into other rooms or hall (4)	
Ventilation			
North Carolina	Window, door, and vent (1)	Windows and doors (22) Door only (2)	
Manhattan		Windows and doors (40)	

Table 36 (concl.).

Feature	: Wholly satisfactory	: Satisfactory	: Unsatisfactory
Wall finish			
North Carolina	Paint and ceramic tile	Paint and plastic tile (12) Paint and tileboard (7) Paint only (1) Tileboard and linoleum (1) Tileboard only (1) Baked enamel on stainless steel tile (1)	
Manhattan		Enamel paint (31) Flat paint (17) Wall paper (6) Plastic tile (10) Wall linoleum (8) Enameled surface (1) Varnish (1), Shellac (1) Canvas covered with semigloss (1)	
Floor finish			
North Carolina	Rubber tile (8) Vinyl tile; if medium or dark color that won't show dirt (4)	Linoleum (10) Ceramic tile (2)	
Manhattan*	Plastic vinyl (12) Rubber (2)	Linoleum (23)	
Hot water			
North Carolina	Plenty at all times (25)		
Manhattan	Automatic hot water heater and tank (40)		

* Not mentioned by Cusick were enameled (2), asphalt (1), cotton carpeting (1), and bare wood (1).

Homemakers are aware of the growing trends in bathroom planning. Slightly less than one-third (32.5 percent) of the homemakers wanted a larger bathroom than the present one. One-fourth of the homemakers wanted some type of a compartmented bathroom. In addition, two homemakers wanted a separate dressing room off the bathroom.

In one-fifth of the homes, the homemakers wanted a hard surface, shiny wall and floor covering (the first choice being ceramic tile followed by plastic tile). One homemaker desired a floor covering with a sponge rubber backing for acoustical control.

There were seven or 17.5 percent of the homemakers who wanted either space for a clothes hamper or more preferably a clothes chute. The same number wanted a different arrangement of lavatories, i.e., twin lavatories, cabinet-top lavatory, and a splash-proof basin.

Six or 15 percent of the homemakers felt they needed or wanted one and one-half to two bathrooms in the home, with the majority desiring the full two bathrooms.

Adequate lighting was wanted by 12.5 percent of the homemakers. The majority of these women lived in homes built more than 18 years ago. In addition, the two women who desired electrical outlets, lived in old homes.

Other items mentioned less frequently were: rubber cove baseboard, no baseboard, exhaust fan controlled by a switch or automatically controlled by turning on a light or closing a door, adequate towel space, corner tub, sunken tub, smooth doors,

locked medicine cabinet, colored fixtures, chrome fittings, plastic stool seat, wall heater, washer and dryer, shelf for washing supplies, toilet tissue holder, and a frosted window.

SUMMARY

The bathroom is one of the most expensive rooms in the home. As it is used by families throughout all phases of the life cycle, it deserves careful consideration during the planning stages.

Few of the homemakers were satisfied with their present bathroom. More than three-fourths wanted a shower in the bathroom, an item used most frequently by men. A larger bathroom would provide space for the scales, room for dressing and storing clothes, and a dressing table with a large mirror.

The large number of activities performed in the bathroom by the 130 household members indicate the need for more positive planning. Common activities included care of teeth; tub bathing; administration of medicines, lotions, and powders; shampooing hair; brushing or combing hair; and applying medicines.

Some activities including tub bathing, those centering around the lavatory, and others involved two or more individuals, due partly to conflicting time schedules and the need for assistance. All of these are the activities for which a bathroom is designed and for which privacy is desired. But in addition to these, reading by adults and playing in the tub by young children require more time than the normal amount. Hand washing and drip drying

of clothes performed a few times weekly by many of the homemakers further increased the use-pressure on the bathroom. Compartmentalization of the bathroom fixtures would allow far more activities to go on at the same time without loss of the privacy of any individual.

The finishes in the bathroom were generally replaced within a four-year period, when they were worn out and the necessary funds were available. Although a large number of finishes are available for use in the bathroom, the majority of the homes had enamel paint on the walls and ceiling and linoleum or vinyl-plastic used as a floor covering. The fixtures were composed of vitreous china or porcelain enamel finish on iron.

The most common equipment and supplies used in caring for the bathroom were: cleaning cloths; sponge; stool brush and a pail or other receptacle to hold water; and in descending order of use: scouring cleanser; floor wax; disinfectant; and soap or detergent. Not all of the items used in caring for the bathroom were stored there. Those items stored in a large number of homes were: stool brush; sponge; cleaning cloths; scouring cleanser; and disinfectant. Other items which were stored in the bathroom but which were not used in caring for it included: towels; face cloths; pillowcases; toilet tissue; and soap. Properly planned storage would adequately take care of these items, plus any others the homemaker might desire to keep in the bathroom.

The bathroom was cared for at least every other day and thoroughly once a week by the majority of the homemakers. Most of

homemakers felt that in the summer the bathroom required more care than in other seasons. When vinyl-plastic was used as the floor covering, less time was required in caring for the floor. The items which required the most time during the normal cleaning of the bathroom were the floor and the tub. The walls required the most time among the seasonal cleaning items.

The homemakers felt that the stool, followed by the lavatory, floor and the walls, and the tub, were areas where it was difficult to remove the soil. Some found that the stool and tub were a cleaning problem because they were difficult to reach. The lavatory, tub, and stool were cleaned due to the activities which took place there which produced soil. The activities were cleaning up, shaving, care of teeth, care of hair, all performed at the lavatory. Tub bathing and use of the stool also resulted in soil for the homemaker to remove.

The largest number of the bathrooms were located on the main floor adjacent to at least one bedroom. An automatic hot water heater provided running water. The plumbing was isolated from other plumbing, i.e., kitchen or second bath.

There were two main bathroom layouts - (1) tub on window wall, remaining fixtures on adjacent wall, and (2) tub in alcove, remaining fixtures on opposite wall.

ACKNOWLEDGMENT

The writer wishes to express her appreciation to Miss Tessie Agan, Associate Professor of Family Economics and major instructor, for her time, efforts, and encouragement given in developing and directing this study; and to Dr. Richard L. D. Morse, Professor and Head of the Department of Family Economics, for his guidance in this study.

The writer also wishes to express appreciation to Mr. Samuel Charlson, Manhattan abstractor, for his help in selecting the areas for study; and to the forty homemakers who cooperated to make this study possible.

LITERATURE CITED

- (1) Agan, Tessie.
The house. New York: Lippincott Company, 1948. 706 p.
- (2) Allen, Edith.
American housing. Peoria: The Manual Arts Press, 1930.
216 p.
- (3) Ashe, Geoffrey.
The tale of the tub. London: Newman Neame Limited,
1950. 64 p.
- (4) Bathorama - soap manufacturers display antique bathtubs
and review the ancient history of bathing. Domestic
Engineering, June, 1956, 188: 188-190.
- (5) Beyer, Glenn.
Housing: a factual analysis. New York: The Macmillan
Company, 1958. 355 p.
- (6) Colean, Miles.
American housing, problems and prospects. New York:
The Twentieth Century Fund, 1944. 466 p.
- (7) Cross, Alfred.
Public baths and wash-houses. New York: Charles
Scribners Sons, 1906. 281 p.
- (8) Cusick, Josephine.
An evaluation of the experiences encountered by rural
families in adding a bathroom to the home. Unpublished
Master's Thesis. Greensboro: University of North
Carolina, 1958.
- (9) Gerhard, William Paul.
Modern baths and bath houses. New York: John Wiley and
Sons, 1908. 311 p.
- (10) Grady, Ethyl, and Grace Smith.
Interior surfaces in the structure of farm houses - 300
homemakers report on the finish materials they use on
walls and woodwork. Rhode Island Agricultural Experiment
Bulletin 324. 1954. 10 p.
- (11) Grady, Ethyl, and Grace Smith.
Interior surfaces in the structure of farm houses - 300
homemakers report their maintenance practices for wall
and woodwork surfaces. Rhode Island Agricultural Experi-
ment Bulletin 325. 1954. 9 p.

- (12) Grady, Ethyl, and Grace Smith.
Factors associated with satisfaction with materials on walls and woodwork. Rhode Island Experiment Station Bulletin 326. 1954. 9 p.
- (13) Green, Rogenia.
Certain storage requirements for families with pre-school children. Unpublished Master's Thesis. Manhattan: Kansas State College, 1947.
- (14) Kennedy, Robert Woods.
The house and the art of its design. New York: Reinhold Publishing Corporation, 1953. 550 p.
- (15) McKeen, Ethel.
An ideal bathroom, its equipment and care. Unpublished Master's Thesis. Manhattan: Kansas State College, 1908.
- (16) Nelson, George, and Henry Wright.
Tomorrow's house - a complete guide for the home-builder. New York: Simon and Schuster, 1946. 214 p.
- (17) Neutra, Richard.
Life and human habitat. Stuttgart: Verlagsanstalt Alexander Koch (GmbH), 1956. 317 p.
- (18) Privazoning... will it succeed? Domestic Engineering, May, 1958, 190: 108-113.
- (19) See your home in a new light. Cleveland: General Electric Company Lamp Department. 31 p.
- (20) The story of the bath. Domestic Engineering, September 1957, 189: 98-99, 231-232, 235-236, 239-241.
- (21) Today's bathroom: is it obsolete? Domestic Engineering, March, 1958, 190: 90-93.
- (22) United States Bureau of the Census.
Census of housing: 1950 (taken as part of the seventeenth decennial census of the United States). Volume I. General Characteristics Part I: United States Summary. Washington: United States Government Printing Office, 1953.
- (23) United States Bureau of the Census.
Sixteenth census of the United States: 1940. Housing Volume II. General Characteristics Part I: United States Summary. Washington: United States Government Printing Office, 1943.

- (24) Women's congress on housing. Washington: Housing and Home Finance Agency, 1956. 82 p.
- (25) Your farmhouse...planning the bathroom. Washington: United States Department of Agriculture, 1948. 16 p.

APPENDICES

APPENDIX A

Kansas State College

Manhattan, Kansas

October , 1958

Dear

For several years the Department of Family Economics at Kansas State College has been conducting research regarding the housing needs of families. The subjects covered have been broad. Thus far, little attention has been paid to the problems which the homemaker encounters in her care of the home.

The Department of Family Economics now plans to enlarge its research program and is starting investigation regarding the grooming area of the house. This of course, involves study of the bathroom.

In the past, we have found it best to secure information directly from the people concerned. In this case it would be you, the homemaker here in Manhattan. You will be able to give us valuable information which we will use in developing plans for this room.

Within the next ten days, Miss Dorothy Devenny, a member of our department, will call you to arrange for an appointment to interview you.

I hope that you will cooperate in this study.

Sincerely yours,

Tessie Agan
Associate Professor
Family Economics

TA/cj

APPENDIX B

TELEPHONE CONVERSATION:

Hello Mrs. _____. This is Dorothy Devenny of the Department of Family Economics at the college. I expect by now you have received the letter telling about the research we are doing. I hope it will be possible for me to interview you. I am interviewing between the hours of nine and five, Monday through Friday. The whole interview shouldn't take longer than an hour and a half. Could you tell me what day it would be convenient for you to have me visit with you?

APPENDIX C

Telephone Conversation Regarding Time Schedule:

Hello Mrs. _____

This is Dorothy Devenny of the Department of Family Economics at the College. I want to thank you again for your cooperation when I was doing my interviewing. We've been tabulating the results and have discovered that it would be very helpful if certain selected homemakers kept a time sheet when they cleaned the bathroom. It's really very simple -- just a matter of noting the time when you clean the various parts of the bathroom. I would leave the time sheet with you and pick it up about a week later. This would enable you to clean your bathroom at a time that is most convenient for you. I hope it will be possible for you to help us in this matter.

APPENDIX D

Day of Interview

Hello Mrs. _____.

Thank you for allowing me to interview you. I'm finding this a wonderful way to meet the people of the midwest since my home is in the east. Part of this research will be used as the basis of my master's thesis.

Perhaps you'd like to know why we are conducting this research. In a study which we are just concluding of the housing of the rural aged in the state of Kansas, almost all the people interviewed indicated that they would like to have a bathroom in their homes. The person who conducted the interviewing said that in many of the homes with bathrooms, the bathrooms were either added on at a later date or else the family had just converted some extra rooms. It seemed that many of the bathrooms were laid out in such a way that they would be very hard to clean.

When one realizes that the bathroom is one of the more expensive rooms in the house one wonders why more attention wasn't given it during the planning.

Almost every homemaker has come to the realization that the bathroom is a difficult room to care for. With more and more emphasis on the two bathroom home, we feel that we should find out what are the problems the homemaker has with her present bathroom, and then develop improvements in the design and the arrangement of the fixtures so that the room will be easier to maintain.

I'd like to say that anything you tell me will be kept confidential and it will never be used in any way so that you can be identified with it.

INTERVIEWER'S REPORT

Name

Address

Date

Length
of
Interview

THE PROBLEMS ENCOUNTERED IN THE CARE OF THE BATHROOM
IN FORTY HOMES IN MANHATTAN, KANSAS

I. Members in Household and Health.

A. Family	Age	Sex	Occupation
-----------	-----	-----	------------

1. Husband		X	
------------	--	---	--

2. Wife		X	
---------	--	---	--

3. Children			
-------------	--	--	--

4. Others			
-----------	--	--	--

B. Do you (the homemaker) have any physical impairment that hinders or interferes with your care of the bathroom? Yes _____ No _____

If yes _____

II. Age of House and Properties

A. How long have you lived in this house? _____

Did you build it? Yes _____ No _____

How long ago was it built? _____

B. Has there been any bathroom remodeling done? _____

How long ago? _____

What changes have been made?

C. Do you have running water in your bathroom? Yes _____ No _____

Do you have hot water in your bathroom? Yes _____ No _____

Do you have an automatic hot water heater and tank? Yes _____ No _____

III. Performance of Activities

The various activities which take place in the bathroom produce different types of soil. We know that this soil presents a cleaning problem to the homemaker.

1. Would you look at Card I.

a. Go down the list and tell me which activities you do not do and I will cross them off my list.

- b. Would you go down through the activities performed in the bathroom and tell me which family members perform the activity.
- c. Are there any of the activities which we have listed which are performed by two or more people at the same time.
- d. With regard to the activities we have crossed off, are there any activities which the family members would prefer to do if you had the facilities.

CARD I

Who performs
activity

Care of Self

Prefer to do
if had
facilities

1. Bathing
 - a. Tub
 - b. Shower
 - c. Sponge
2. Care of the skin
 - a. Shaving
 - b. Application of medicines, lotions, powders.
 - c. Application of cosmetics
 - d. Pedicures, manicures
3. Care of the hair
 - a. Cutting
 - b. Shampooing
 - c. Brushing or combing
 - d. Applying rinses
 - e. Setting
 - f. Drying hair with dryer
4. Dressing
 - a. Dress in bathroom
 - b. Store clothes in the bathroom overnight or during the day
5. Health
 - a. Care of the teeth
 - b. Storing of dentures
 - c. Administration of medicines
 - d. Weighing on scales
6. Child training
7. Care of the sick
 - a. Administer medicines etc.

Activities in which two or more engage in at the same time: _____

2. Would you look at Card II and tell me which activities are done by any member of your family.

CARD II

B. Relaxing in the bathroom

1. Reading
 2. Children playing in the tub
 3. Napping in the tub
 4. Sun bathing
 5. Heat baths
 6. Other
3. Would you look at Card III and tell me which activities are done by any member of your family.

CARD III

C. Care of clothing

1. Storage of soiled clothes
2. Storage of everyday clothes
3. Storage of out of season clothes
4. Spot removal
5. Bleaching of clothes
6. Starching of clothes
7. Steaming of clothes
8. Drying of clothes in dryer
9. Drip drying of clothes
10. Hand washing of clothes Yes_____ No_____ If yes, what do you wash and amount of wash?_____
11. Machine washing of clothes Yes_____ No _____.

4. Would you look at Card IV and tell me if you store any of the following items.

D. Storage

CARD IV

1. Medicinal supplies Yes _____ No _____
Amount of items--Large, over 16 _____ Medium, 10-15 _____
Small, under 10 _____.
2. Storage of linens Yes _____ No _____ If Yes, Sheets _____
Pillow cases _____ Towels _____ Face cloths _____ Table
cloths _____ Blankets _____ Spreads _____ Scarves, runners
_____.
3. Storage of other supplies--Paper towels _____ Soap _____ Toilet
tissue _____ Paper handkerchiefs _____ Other _____.
4. Storage of toys Yes _____ No _____.

5. Would you look at Card V and tell which items are stored in the bathroom?
1. Which of the items are used in your care of the bathroom?
 2. What cleaning equipment and supplies are brought in from another area of the house when you clean the bathroom?

CARD V

<u>Stored</u>	<u>Equipment</u>	<u>Brought in</u>	<u>Used</u>
	Vacuum cleaner		
	Floor polisher and scrubber		
	Mop--Sponge_____ Regular_____		
	Stool brush or device on long handle		
	Scrub Brush		
	Sponge		
	Cleaning cloths		
	Pail or receptacle to hold water		
	Cleaning supplies		
	Soap or detergent		
	Special soil removing compound		
	Scouring cleanser		
	Glass polish		
	Metal polish		
	Wallpaper cleaner		
	Wax -- Wall		
	Wax -- Floor		
	Ammonia		
	Bleach		
	Water softener		
	Disinfectant		

IV. Bathroom Cleaning Practices.

Now that we've gone through the list of activities which your family performs in the bathroom and what you store there, we would like to continue by trying to find out what your problems are when cleaning your bathroom. To begin with:

A. Difficult Areas to clean.

1. Do you have any trouble areas or spots in the bathroom where you find it difficult to remove soil?

2. Are there any places which you have to keep cleaning constantly?

3. Is there any particular activity which takes place in the bathroom that creates a particular problem to clean up after?

4. Do you find any place hard to clean because it is difficult to reach?

B. Easy Areas to Clean:

Now that we've discovered what your problems are in keeping the bathroom clean, we'd like to find out just what are the easiest spots to clean in your bathroom?

Why?

1. Are the places that are easiest to clean, easy because of the finishes at this place?

2. Is there more space to work in that particular area?

C. Could you describe the care that you give your bathroom? For example:

1. Do you give it a quick cleanup every day or do you give it a thorough cleaning once a week? _____

2. Are there any seasons during the year when the bathroom requires more care than others? _____

3. How long has it been since you redecorated the bathroom? _____

When do you replace the bathroom finishes? _____

If less than a year, or recently, is it easier to clean now than before?

Why? _____

If some years ago, is it harder to care for than when it was new? _____

Why? _____

4. Have you developed any "cleaning time savers" to save your time in the upkeep of your bathroom? _____

D. Have you ever lived in a house where there were more or fewer problems in the care of the bathroom than you have now? Would you tell about it?

1. Has your cleaning practices changed in any way due to special problems regarding the care of such finishes as the floor or the walls? _____

2. Do you think that the way the room is arranged has any effect upon the way you clean your bathroom? _____

V. Desired Features in the Bathroom

What features would you like to have in your next bathroom? _____

VI. Safety in the Bathroom

Has any member of the family had an accident in the bathroom in the past few years? Yes _____ No _____.

If Yes:

1. Did the condition of the finishes have any bearing on the cause of the accident? Yes _____ No _____.

How? _____

2. Did you install any safety devices to prevent future accidents?

Explain _____

3. Is there a heater in the bathroom? Yes _____ No _____.

If yes, where is it located?: Wall _____ Floor _____.

Information Gained Partly by Interviewer's Inspection of the Bathroom.

VIII. Check list for Bathroom Materials, Finishes, and Condition.

A. Location of bathroom.

1. Where is the main bathroom located?

First floor _____ Second floor _____ Basement _____.

2. Where is half bath (second bath) located?

First floor _____ Second floor _____ Basement _____.

3. Is main bathroom adjacent to bedrooms? Yes _____ No _____.

4. Is bathroom plumbing isolated _____, or is it adjacent to other plumbing? _____.

B. Materials and Finishes Found in the Bathroom**Have****1. Materials****Condition****a. Walls and ceiling**

1. Plaster
2. Wallboard
3. Cement
4. Other

b. Floor

1. Wood
2. Cement
3. Other

2. Finishes**a. Walls and ceiling**

1. Enamel paint
2. Flat paint
3. Wallpaper
4. Waterproof Wall Fabric
5. Ceramic Tile
6. Metal Tile
7. Plastic Tile
8. Wall Linoleum
9. Glass brick
10. Enameled surface
11. Vinyl surface
12. Other

b. Floor finishes

1. Linoleum
2. Shellac
3. Varnish
4. Paint
5. Asphalt tile
6. Rubber tile
7. Plastic-vinyl
8. Enameled
9. Ceramic tile
10. Cork
11. Other

c. Fixtures

1. Vitreous china
2. Enameled iron
3. Enameled steel
4. Plastic stool seat
5. Wood stool seat
6. Other

d. Fittings finishes

1. Nickel
2. Chrome
3. Porcelain
4. Other

VIII. Types and Designs of Fixtures

A. Lavatory

1. Shape--Round _____ Square _____ Rectangular _____.
2. Installation--Hangs on wall _____ Legs _____ Pedestal _____
Built in _____.

Any particular feature in design that you think would hinder cleaning or make for easier cleaning? _____

B. Tub

1. Shape--Rectangular _____ Square _____
2. Installation--Recessed _____ Stands on legs _____ Corner tub _____

Any particular feature in design that would make it harder to clean? _____

C. Shower

1. Separate from tub? Yes _____ No _____
2. If in tub, is it enclosed in glass _____ plastic _____ shower curtain _____

D. Stool

1. Type--Wash down _____ Reverse trap _____ Siphon jet _____

Any particular feature in design that would hinder or make cleaning easier? _____

IX. Other Features of the Bathroom**A. Light meter readings (Simulate cleaning conditions)**

1. At mirror _____
2. At lavatory _____
3. In tub _____
4. Right side of stool _____
5. Difficult areas to clean location _____

B. Is there any accoustical treatment? Yes _____ No _____

If yes, where is it placed?

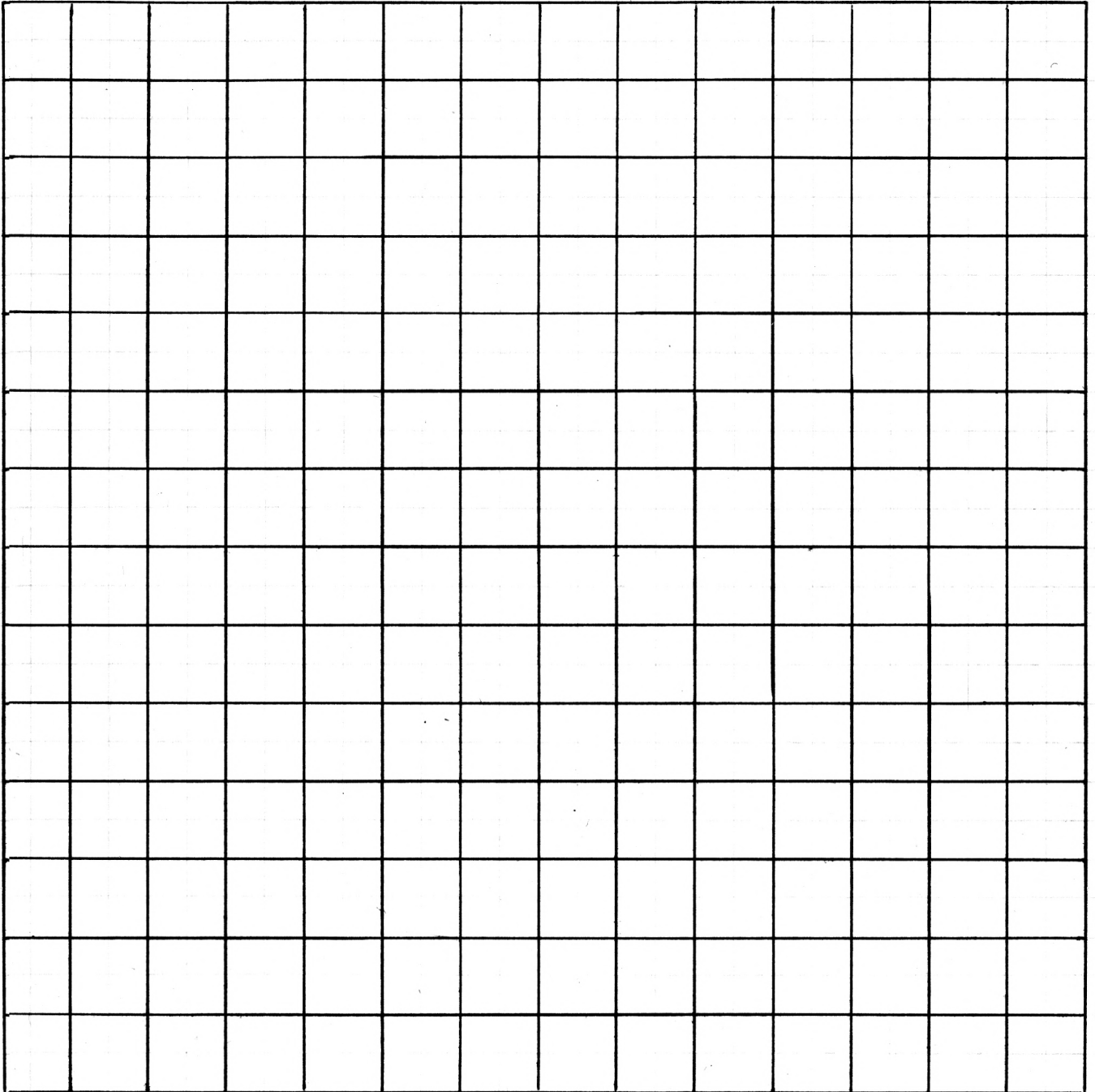
1. Ceiling _____
2. Walls _____

C. Floor plan

Include:

1. Location of window _____
2. Dimensions of window _____
3. Type of window _____
4. Location of light fixtures _____

C. Floorplan of bathroom



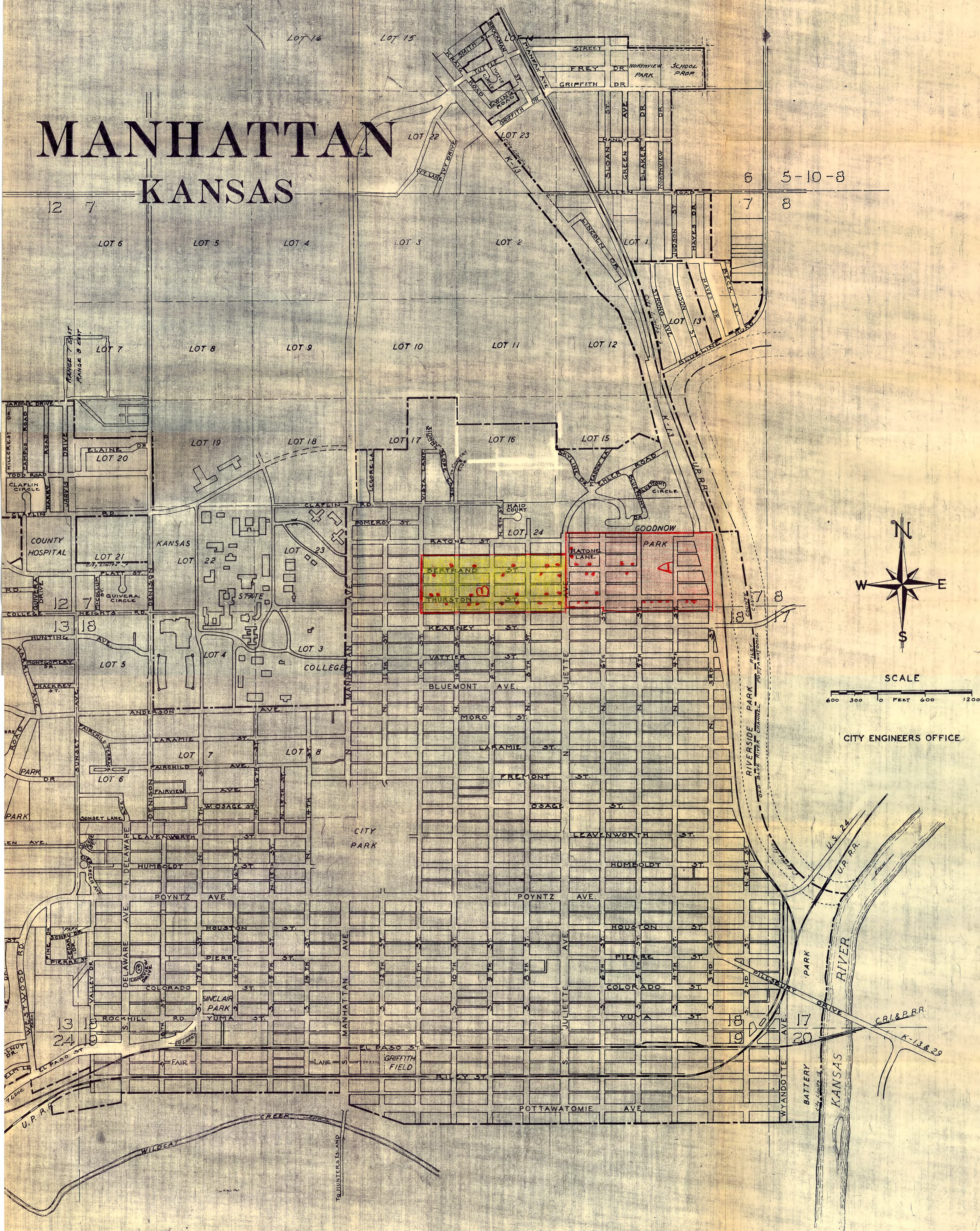
Scale: 2 squares equal 1 foot

APPENDIX E

KAROLTON KLASP 6½ x 9½
MADE BY
THE AMERICAN ENVELOPE CO.
WEST CARROLLTON, OHIO

Map showing location of new and old areas studied
in Manhattan, Kansas.

MANHATTAN
KANSAS



3 Nov '58
14 Dec. '57
22 Oct. '57
Rvs'd 18 Sept. '57

APPENDIX F

Time Sheet for Cleaning the Bathroom

This sheet is to aid us in determining the time needed to clean the various finishes in your bathroom. It is suggested that having your watch on or taking an alarm clock into the bathroom at this time will enable you to record your time. You may not perform the tasks in the order listed, and you may not perform all the tasks. If you do not perform all the jobs listed, feel free to cross them off the list. Thank you for your cooperation.

	Time	
	Begin	End
I. Cleaning process starts		
A. Usual		
<u>Collecting cleaning equipment</u>		
<u>Cleaning of tub</u>		
<u>Cleaning of sink</u>		
<u>Cleaning of stool</u>		
<u>Empty waste paper basket</u>		
<u>Washing of floor</u>		
<u>Waxing of floor</u>		
<u>Put away cleaning equipment</u>		
B. Other		
<u>Cleaning of ceiling</u>		
<u>Cleaning of windows</u>		
<u>Cleaning of walls</u>		
II. <u>Cleaning process ends</u>		

III. Were there any interruptions? If yes, will you please list them and the approximate time each one took.

PROBLEMS ENCOUNTERED IN THE CARE OF
BATHROOMS OF FORTY HOMES IN MANHATTAN, KANSAS

by

DOROTHY MAUD DEVENNY

B. S., Hunter College
of the City of New York, 1957

AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Family Economics

KANSAS STATE UNIVERSITY
OF AGRICULTURE AND APPLIED SCIENCE

1959

The growing importance of grooming has brought about an increase in the number of bathrooms, but little change in the planning principles. Forty homemakers living in old and new homes in Manhattan were interviewed to determine the number and types of problems they encountered in the care of the bathroom; how these problems were affected by the number of activities, the types and finishes of the materials used, the design of the fixtures, and the layout of the room; and to study the cleaning practices with regard to time and facilities available for cleaning.

The bathroom should be large enough to allow two people to be in the room at the same time, without interfering with the privacy of either individual. The activities which might logically be performed in the bathroom include: care of the teeth; tub bathing; administration of medicines, lotions, and powders; shampooing hair; brushing or combing hair; applying medicines; and hand washing of articles of clothing. A large number of households wanted a shower, space for scales, room for dressing and storing clothes, and a dressing table with a large mirror.

The most common finishes used in the bathroom were enamel paint on the walls and ceiling, and either linoleum or vinyl used as a floor finish. These, and other finishes (i.e., vitreous china and porcelain enamel finish on iron for the fixtures) in the bathroom were cleaned by means of cleaning cloths; a sponge; stool brush; a pail or other receptacle to hold water; scouring cleanser; floor wax; disinfectant; and soap or detergent.

Not all of the items used in caring for the bathroom were stored there. The items stored in a large number of homes were: stool brush; sponge; cleaning cloths; scouring cleanser; and disinfectant. Other items which also were stored in the bathroom included: towels; face cloths; pillowcases; toilet tissue; and soap. The large list of items show the need for planning adequate storage.

Items with large surface area, i.e., floor, tub, and walls, took the longest time to clean. Activities taking place at the lavatory caused it to be cleaned most frequently. It was difficult to reach the stool and tub for cleaning. In descending order, the stool, lavatory, floor and walls, and the tub were areas where it was difficult to remove the soil.

The majority of the bathrooms were located on the main floor, adjacent to a bedroom, but isolated from the rest of the plumbing. There were two main layouts - (1) tub on window wall, remaining fixtures on adjacent wall, and (2) tub in alcove, remaining fixtures on opposite wall.