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STORAGE REQUIREMENTS FOR BATHROOMS

by

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## CHAPTER I

### INTRODUCTION

The lack of storage space in bathrooms is a common problem in today's homes. Casual observation of both old and new houses reveals that seemingly little effort has been made to provide adequate and convenient storage space for even the most used items. Most houses are bought by families after construction is completed. It would appear that builders and buyers are not aware of the loss of time and energy and the confusion encountered by families due to lack of convenient storage space in the bathroom for the numerous items used there.

It was the purpose of this study to determine the amount and kind of storage families preferred in the bathroom. Value judgments regarding which items are to be used in the bathroom and where families should store them were not made. Rather the amount of storage space needed in the bathroom was determined from the kind, number, and size of items that the families used and said they preferred to store in the bathroom.

Due to limitations in time, the bathroom storage needs of only twenty-four families of middle income were determined.



Certain terms required definition according to their use in this study. They were as follows:

1. Height in this study meant the distance between shelves; the distance from top to bottom of drawers; the distance from top to base of items or articles, stored according to their usual position.
2. Depth meant the distance from front to back when referring to items, drawers or shelves.
3. Length meant the distance from side to side or the width of items, drawers, and shelves.
4. Space requirement meant the dimensions of a storage space needed to store the majority of sizes of an item.

The review of literature related to bathroom storage needs is given in Chapter II. The method of study and the group studied are described in Chapter III. The findings of the study are given in Chapter IV. The summary and conclusions are given in the final chapter.

## CHAPTER II

### REVIEW OF LITERATURE

Very little research directly related to bathroom storage was found in the literature.

In 1944, The John B. Pierce Foundation published a study, Family Behavior, Attitudes and Possessions, in which Blum and Candee<sup>1</sup> discussed the inadequacies of bathroom storage.

The medicine chest offers the only closet space in the bathroom in most homes . . . . Most families had a chest with either 3 or 4 shelves. By inspection, it was judged that in less than 2% were the chests 'practically empty' whereas in 67% of these chests they were judged as 'filled,' 'crowded,' or 'overflowing.'<sup>2</sup>

Blum and Candee further pointed out:

Of the 36 items listed in this inventory, 70% of them are in over 50% of the homes. Only 47% of these 36 items are most usually kept in the bathroom . . . . drugs, powder, soap, body cleaning aids, and towels are the items kept there; all other items are kept in the kitchen or basement if they are cleaning aids or in the bathroom if they are accessories to grooming activities.<sup>3</sup>

. . . . .  
Only 14% consider the storage space in the bathroom adequate. Only 3% store clean towels in the bathroom but 75% would like to.<sup>4</sup>

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<sup>1</sup>Milton Blum and Beatrice Candee, Family Behavior, Attitudes and Possessions, The John B. Pierce Foundation, Research Study 5 (New York: 1944), p. 87.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

McCullough,<sup>5</sup> who had done a great deal of planning of storage facilities, designed a storage unit for bathroom supplies. The articles stored in the cabinet were determined by a panel of twelve homemakers and several members of the home management staff at the University of Illinois. They included: bathroom linens, toilet supplies, medical supplies, special equipment such as: hot water bottle, ice bag, heating pad, bed pan and syringes, cleaning supplies and miscellaneous articles. McCullough suggested a small wall cabinet for small toilet articles in addition to the large unit. The dimensions of the cabinet designed were based on the four inch module and the depth of towels, the largest item. The dimensions given for the bathroom storage unit were:

Depth	
Minimum. . . . .	16 inches
Other. . . . .	18, 20, and 24 inches
Width, minimum. . . . .	24 inches <sup>6</sup>
Height. . . . .	84 inches <sup>6</sup>

Faulkner stated, "Conventional medicine cabinets do about one-tenth of the job; spacious cupboards, although needed, are seldom found."<sup>7</sup>

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<sup>5</sup>Helen E. McCullough, Space Design for Household Storage, University of Illinois Agricultural Experiment Station, Bulletin 557 (1952), p.40.

<sup>6</sup>Ibid.

<sup>7</sup>Ray Faulkner, Inside Today's Home (New York: Henry Holt and Company, 1954), p.55.

Several bulletins published by the United States Department of Agriculture discussed the storage needs of bathrooms. Your Farmhouse...Planning the Bathroom<sup>8</sup> suggested a locked medicine cabinet out of the child's reach, a low cabinet for the children, and replacing the medicine cabinet over the lavatory by a mirror and cabinets on both sides.

Bathroom linens were included in the research publication, Storage Requirements for Household Textiles.<sup>9</sup> The space requirements were determined for various folding methods and depths of surfaces.

Mary and Russell Wright indicated some solutions to the storage problems in the bathroom with the following suggestions.

A built-in closet large enough to hold all bathroom supplies: toilet paper, soap, and so on: and also provide room here for all cleaning materials and tools.<sup>10</sup>

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<sup>8</sup>M. Stenswick, and A. Woolrich, and J.R. Dodge, Your Farmhouse . . . Planning the Bathroom, United States Department of Agriculture, Miscellaneous Publication No. 638 (Washington: Government Printing Office, 1948), p. 8.

<sup>9</sup>A. Woolrich, M.M. White, and M.A. Richards, Storage Space Requirements for Household Textiles, United States Department of Agriculture, Agricultural Research Service, Bulletin 62-2 (Washington: Government Printing Office, 1955).

<sup>10</sup>Mary and Russell Wright, Guide to Easier Living, (New York: Simon and Schuster, 1954) p. 68.

- An adequate-sized hamper, preferably the built-in type. . . .
- A towel rack for each member of the family . . .
- A labeled towel rack for guests, and paper guest towels.
- A paper-cup dispenser, . . .
- A paper towel holder, . . .
- A holder for facial tissues, . . .
- Individual unbreakable containers . . . for toothpaste, toothbrush, shaving articles, comb, brush, etc. . . .<sup>11</sup>

Monroe and Randall<sup>12</sup> established the space required in bathrooms to perform certain cleaning activities, personal hygiene activities. This study was concerned with space needs in the room rather than storage requirements.

Although relatively little research had been done on bathroom storage, a great deal has been done on the importance of providing adequate storage in general. This could be applied to bathroom storage. Sleeper stated: "Good storage facilities can do more to simplify daily life than any other single planning item."<sup>13</sup>

The American Public Health Association Committee on the Hygiene of Housing stated:

Sufficient storage space is effective in reducing home accidents in insuring smooth operation of the household and in maintaining an orderly and attractive back-

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<sup>11</sup>Ibid., p. 69.

<sup>12</sup>M. M. Monroe, and S. W. Randall, Bathroom Working Spaces, Maine Agricultural Experiment Station, University of Maine, Miscellaneous Report 82 (Orono, Maine: 1959)

<sup>13</sup>Catherine Sleeper and Harold R. Sleeper, The House for You, (New York: John Wiley and Sons, Inc., 1948), p. 209.

ground, but many houses built in recent years are inadequately provided with such facilities.<sup>14</sup>

.....

Convenience is the major consideration for all storage space: an economic, adequate, easy-to-use and attractive place should be provided for every article to be stored, with some allowance for changes in the types and amounts of stored materials. Flexibility in storage spaces is as important as flexibility in activity space.<sup>15</sup>

.....

It is impossible and unreasonable to make provision for everything families may cherish, but undue limitation forced by inadequate storage space is most unfortunate.<sup>16</sup>

.....

It is not always so clearly recognized that mental and emotional health is quite as important as physical health . . . . The frustration which results from overcrowding, conflict between desires and needs of various members of the family, fatigue due to the performance of household duties under unfavorable conditions - these are health menaces quite as serious as poorly heated rooms or stairs without railings.<sup>17</sup>

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<sup>14</sup>Public Administration Service, Planning the House for Occupancy, A Report Prepared by the American Public Health Association on the Hygiene of Housing (Chicago: R. R. Donnelley and Sons Co., 1950), pp. 17-18.

<sup>15</sup>Ibid.

<sup>16</sup>Ibid.

<sup>17</sup>Ibid. p.v.

## CHAPTER III

### METHOD AND GROUP STUDIED

#### Collection and Analysis of Data

The amount and kind of bathroom storage used and preferred by twenty-four families in Guilford County, North Carolina, were determined by personal interview. The basis on which the twenty-four families were selected was that the family must have at least one child under eighteen years of age. It was believed that childless homes would not be as representative of family needs.

The interview schedule prepared and used in collecting the data is included in the appendix. The first portion of the schedule requested personal information which included family size, ages of family members, income, education, and occupation of parents. The age, size and value of the house and the length of residence were also included.

Tasks performed in the bathroom were used as the basis for structuring the remainder of the schedule. The tasks listed were: brushing teeth, shaving, grooming hair, applying make-up, polishing shoes, reading, cleaning the room, bathing, storing bath linens, storing medical and first aid supplies, storing extra supplies, storing soiled clothes and linens, and hanging hand laundered garments.

In addition manicuring nails, dressing, and bathing infants were listed on the interview schedule, but were dropped from the analysis of data as storage for these was not preferred in the bathroom by the families studied. The items used and preferred in the bathroom for these activities were considered the items for which storage was required. The place of performance in the bathroom was used to determine the logical storage location of the items.

Detailed questions were asked the homemaker concerning the items needed by the family members for the tasks. Included in these were: what items were used, how many were used, where they were used, and if storage for them was preferred in the bathroom. The items which the family members used and preferred to store in the bathroom were measured and the dimensions recorded on the schedule. Note that although few of the items could be stored in the bathroom because of lack of storage space, it was the preference for storage in the bathroom that was determined and was used as a basis for determining the quantity of storage needed. In order to be included in the recommendations, an item had to be used and storage for it had to be preferred in the bathroom.

The kind and number of items used and preferred in the bathroom for each activity by the twenty-four families were tabulated. Items that were used and their storage pre-



ferred in the bathroom by at least four of the families, were included in the final space recommendations. In other words, the kind of items included in the final storage plans would satisfy the storage needs of 87.5 per cent of the families. This percentile was arbitrarily established as the basis for recommendations.

Numerous replicates of some of the items were found in the bathrooms. The number of such like items for which space was allowed, was dependent upon the frequency with which the replications occurred. In rare cases where extremely large numbers of an item occurred such exceptionally large quantities were not included in the final storage space calculations. However, when replicate was the rule, they were included. Replicates of items to satisfy almost all (87.5 per cent) of the families were included.

Storage space requirements for each item and replicates of each item were first determined. These were combined according to task to get the total storage space required.

In determining the amount of space to allow for each item, the measurement of that item for all of the families who had it were listed in ascending order according to height. All three measurements, height, depth, and length, that would accommodate the majority of the sizes used by the

families studied were established. These sizes became the basis, therefore, of the total storage space required for bathrooms.

In the cases where replicates were of varying sizes, additional sizes that would store the majority were established.

In combining the sizes of items according to task, first consideration was given to the height of shelf or drawer required. Obviously it would be extravagance of space to recommend that a ten inch bottle and a one inch tube be stored side by side because they happened to be used for the same task.

Next the depth of the item was considered. The convenience of storing short items two deep was considered. If radically different depths were required, the items were divided accordingly. In all cases the required depth was allowed in the final storage recommendations.

For each height of shelf or drawer and each depth of shelf or drawer, the total length of surface required to place the items to be stored was summed.

#### The Field Situation

The families. Each of the twenty-four families studied had at least one child. A third of the families had one and almost two-thirds had two or three children (See Table I). The ages of the children varied from one month to

seventeen years, but most of them were between two and twelve years of age (See Table II). The ages of the parents ranged from twenty-two to forty-five years. The mean age of the husbands was 34.9 years. The mean age of the wives was 30.3 years. The husbands tended to be older than the wives.

TABLE I  
SIZES OF FAMILIES STUDIED

<u>Adults</u> Number	<u>Children</u> Number	<u>Total family members</u> Number	<u>Families</u> Number Per cent	
Two	One	Three	8	33.3
Two	Two	Four	6	25.0
Two	Three	Five	9	37.5
Two	Four	Six	1	4.2

TABLE II  
AGES OF CHILDREN IN THE FAMILIES STUDIED

<u>Children's ages</u> Number	<u>Girls</u> Number	<u>Boys</u> Number	<u>Total</u> Number	<u>Per cent</u>
0 - 1	1	4	5	8.8
2 - 5	10	6	16	31.4
6 - 12	8	14	22	43.1
13 - 17	2	6	8	15.7

Two-thirds of the wives were full-time homemakers. The other third were employed outside of the home - either part or full-time. The husbands were employed in a wide variety of occupations (See Table III).

TABLE III

## OCCUPATIONS OF HUSBANDS IN THE FAMILIES STUDIED

Occupations	Number	Per cent
Salesmen	9	37.5
Managers	3	12.5
Store Owners	3	12.5
Accountants	2	8.3
Educators	2	8.3
Foremen	2	8.3
Lawyers	1	4.2
Pharmacists	1	4.2
Stockbrokers	1	4.2

Almost half of the parents were college graduates, twenty-four were high school graduates. Over half of these had attended college one to three years. Two parents did not finish high school (See Table IV).

TABLE IV

## EDUCATION OF PARENTS IN THE FAMILIES STUDIED

Educational level	Husbands	Wives	Both Parents	
			Number	Per cent
High School (1-3 years)	1	1	2	4.2
High School (4 years)	3	5	8	16.7
College (1-3 years)	10	6	16	33.3
College (4 years)	7	7	14	29.1
Graduate Work	3	5	8	16.7

The incomes of the families varied from 7,000 to 15,000 dollars. Over half of the families had an income between 7,000 and 9,000 dollars (See Table V). Note that the educational level and incomes of these families are higher than the average.

TABLE V  
INCOME OF FAMILIES STUDIED

Income of families	Number	Per cent
\$ 4,000 - \$ 6,000	4	16.7
7,000 - 9,000	13	54.2
10,000 - 15,000	7	29.2

The houses. Two of the houses were rented. The other twenty-two were owned by the families. None of the families had planned the houses or the bathroom facilities.

Three-fourths of the houses were less than ten years old (See Table VI). Of these, one-half had been built within the past five years. The majority of the houses had been lived in by the family less than four years.

A fifth of the houses were valued at 11,000 to 12,000 dollars. The cost of almost half of the houses was 13,000 to 14,000 dollars. One-fourth were valued from 15,000 to 16,000 dollars. (See Table VI).

Half of the houses had three bedrooms. Over a third had two bedrooms; one home had one bedroom and two had four bedrooms. (See Table VI).

Three of the houses had more than one bathroom. All of the remaining ones had one bathroom. (See Table VI).

TABLE VI  
 VALUE, AGE, LENGTH OF RESIDENCE  
 AND SIZE OF HOUSES STUDIED

	Number	Per cent
<b>Value of House</b>		
Under \$11,000	1	4.2
\$11,000 - \$12,000	5	20.8
\$13,000 - \$14,000	11	45.8
\$15,000 - \$16,000	6	25.0
Over \$17,000	1	4.2
<b>Age of House</b>		
Under 5 years	9	37.5
5 - 10 years	9	37.5
11 - 15 years	1	4.2
16 - 20 years	3	12.5
Over 20 years	2	8.3
<b>Length of Residence</b>		
Under 1 year	5	20.8
1 - 3 years	11	45.8
4 - 6 years	6	25.0
Over 6 years	2	8.3
<b>Number of Bedrooms</b>		
One	1	4.2
Two	9	37.5
Three	12	50.0
Four	2	8.3
<b>Number of Bathrooms</b>		
One	21	87.5
One and one-half	1	4.2
Two	2	8.3

The bathrooms. Most of the bathrooms were small. (See Table VII). Eleven of the bathrooms had less than forty-one square feet of floor space, ten had from forty-one to fifty square feet, and only six had over fifty square feet.

All of the bathrooms had a medicine cabinet over the lavatory and two had a second one. Other storage units found were closets, base or wall cabinets, and shelves. (See Table VIII).

Bathroom storage facilities were reported inadequate in all but one of the homes. Only two homemakers indicated plans for adding storage space. The majority reported that they lacked space for the additional units or did not know how to improve their present storage.

Items found on the floor of the bathroom which did not have storage provided were scales, toys and children's toilet seats.

Although storage space was limited in the bathroom, items such as a vacuum cleaner, fish food, dog medicine, flashlight, and liquid solder had been placed there by the homemaker or family. Many items used exclusively in the bathroom, such as toilet tissue, soap and towels were often stored outside of the bathroom.

Homemakers with preschool age children were concerned about the storage of poisonous items and suggested that they be placed in locked cabinets. In several instances the home-



maker realized that placement of storage would have to be adjusted to the needs of toddlers.

TABLE VII

## SIZE OF BATHROOMS STUDIED

<u>Size of bathroom</u> Square feet	<u>Bathrooms</u> Number	Per cent
Under 30	1	3.7
31 to 35	6	22.3
36 to 40	4	14.8
41 to 45	5	18.5
46 to 50	5	18.5
51 to 55	2	7.4
56 to 60	2	7.4
Over 60	2	7.4

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Under 30	1	3.7
31 to 35	6	22.3
36 to 40	4	14.8
41 to 45	5	18.5
46 to 50	5	18.5
51 to 55	2	7.4
56 to 60	2	7.4
Over 60	2	7.4

TABLE VIII

## STORAGE UNITS IN THE BATHROOMS STUDIED

Storage units	Number of units	Per cent of houses with one or more units
Medicine Cabinets	26	100.0
Shelves	5	20.8
Base or Wall Cabinets	6	25.0
Closets	4	16.6

## CHAPTER IV

### FINDINGS

#### The Bathroom Tasks

Tasks performed in the bathroom for which storage was preferred in the majority of the homes were: brushing teeth, shaving, grooming hair, applying make-up, polishing shoes, reading, room cleaning and bathing. In addition, storage was required for bathroom linens, first aid and medical supplies, extra supplies, soiled clothes and linens, and hanging hand laundered garments. (See Table IX).

The storage location preferred by most of the homemakers for the first four activities was near the lavatory.

#### Storage Requirements by Tasks

The items which the families used and wanted to store in the bathroom are discussed separately for each of the bathroom tasks.

The accompanying tables list the items, the number used by the families, the number recommended for storage, and the size of the storage space required. When more than one of an item is recommended and only one set of dimensions is given, it applies to the size required for all. If more than one set of dimensions is given, the storage recommendations are for replicate items of different sizes.

## CHAPTER IV

### FINDINGS

#### The Bathroom Tasks

Tasks performed in the bathroom for which storage was preferred in the majority of the homes were: brushing teeth, shaving, grooming hair, applying make-up, polishing shoes, reading, room cleaning and bathing. In addition, storage was required for bathroom linens, first aid and medical supplies, extra supplies, soiled clothes and linens, and hanging hand laundered garments. (See Table IX).

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TABLE IX

## BATHROOM TASKS REQUIRING STORAGE IN THE FAMILIES STUDIED

Tasks*	<u>Families preferring storage in bathroom</u>	
	Number	Per cent
Brushing Teeth	24	100.0
Shaving	24	100.0
Grooming Hair	23	95.8
Applying Make-up	14	58.3
Polishing Shoes	5	20.8
Reading	12	50.0
Room Cleaning	24	100.0
Bathing	24	100.0
Storing Bathroom Linens	20	83.3
Storing First Aid and Medical Supplies	24	100.0
Storing Extra Supplies	22	91.7
Storing Soiled Clothes and Linens	12	50.0
Hanging Hand Laundered Garments	11	45.8

\*The families were also asked about child care, dressing and manicuring nails, but none preferred to have storage for these in the bathroom.

Dimensions are always listed as height, depth, and length consecutively.

The recommended numbers given would satisfy the needs of at least eighty-five per cent of the families studied.

Brushing teeth. Teeth were brushed from one to three times daily. This task required storage for toothbrushes, tooth paste or powder, dental floss, and drinking glasses. (See Table X). Mouth wash was reported as used when the family had colds, therefore, in this study it is included with the first aid and medical supplies.

The number of toothbrushes stored varied from one to eight. Storage for six inholders would satisfy most of the families. Many of the homemakers commented that the usual holders would not allow storage for toothbrushes that had gum massage tips on the end. It was therefore important that the holder provided be carefully selected with this in mind if this type of toothbrush was used.

Jars, cans and tubes of toothpaste and powder were present in the homes. Most of the families preferred storage for tubes. It may be that in the future there will be a greater usage of the press cans that are relatively new on the market. If so, a different amount of storage space will be needed.

Dental floss was used by the husbands and wives in many of the homes.

TABLE X

THE NUMBER OF TOOTH BRUSHING ITEMS THAT THE FAMILIES PREFERRED TO STORE IN  
THE BATHROOM WITH RECOMMENDATIONS FOR NUMBER AND SPACE  
REQUIREMENTS FOR THEIR STORAGE

Items	None	Items per family						Total families		Number	Recommendations Space required Inches**
		1	2	3	4	5	6*	Number	per cent		
		Number of families									
Dental Floss	13	11	0	0	0	0	0	11	45.8	1	1.5 x 3.3 x 1.5
Tooth Paste	0	12	9	1	2	0	0	24	100.0	2	2.0 x 2.0 x 7.0***
Drinking Glasses	12	7	2	2	0	1	0	12	50.0	2	5.0 x 2.5 x 2.5
Tooth Brushes	0	0	0	5	8	6	5	24	100.0	6	6.5 x 0.8 x 0.8

\*Six or more items.

\*\*Deminsions given are height, depth, length consecutively.

\*\*\*Space for replicate items was the same.



holders for two glasses, most frequently used by the children, were needed near the lavatory. A paper cup dispenser could be used.

Shaving. The shaving items needed daily at the lavatory were: razors, lathers, soap brushes, styptic pencils, talcum powders, lotions, and extra blades. (See Table XI). Because of similar size and usage and because it was best stored near the man's shaving supplies, the man's deodorant was included.

Both safety and electric razors were used. The total number of razors in the homes varied from one to five. Four or more razors were in four homes. Since all of these undoubtedly were not used, three razors per bath seemed a reasonable number to allow for space allotment.

The size of the razors varied greatly with the electric razors being considerably larger than safety. All of the eleven electric razors were stored in cases, while many of the safety razors were not. Most of the bathroom storage areas were not deep enough for an electric razor.

The lathers used were in tubes, spray or press cans, and soap mugs. Cans were present most frequently. Soap brushes were also allotted space as twelve of the homemakers preferred storage for them in the bathroom.

TABLE XI

THE NUMBER OF SHAVING ITEMS THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family					Total families preferring Number	Number	Recommendations Space required Inches	
	None	1	2	3	4*				Per cent
Styptic Pencils	17	6	1	0	0	7	29.2	1	1.0 x 1.0 x 3.8
Extra Blades	3	12	3	2	4	21	87.5	3	1.0 x 3.0 x 2.0
Razors									
Safety	2	7	8	5	2	22	91.7	2**	1.0 x 3.8 x 2.0
Electric	15	7	2	0	0	9	37.5	1	1.5 x 4.0 x 3.0
Total Razors	0	7	8	5	4	24	100.0	3	2.5 x 5.0 x 5.8
Deodorants	10	9	5	0	0	14	58.3	2	4.0 x 2.5 x 2.5
Soap Brushes	12	11	1	0	0	12	50.0	1	5.5 x 2.0 x 2.0
Talcum Powders	14	8	1	1	0	10	41.7	1	5.8 x 4.0 x 2.0
Lathers	6	9	8	1	0	18	75.0	2	6.0 x 3.0 x 3.0
Lotions	3	7	6	6	3	21	87.5	3	6.0 x 3.0 x 1.5 6.0 x 3.5 x 2.0 6.0 x 4.0 x 2.5

\*Four or more.

\*\*Two or more sets of dimensions are given when different sizes.

The lotions used in shaving were preshave, after shave, and cologne. Twenty-one of the families needed space for these. The sizes of all three were considered together and spaces for three bottles were provided in the storage plans.

Grooming hair. Twenty-three of the homemakers (95.8 per cent) preferred storage for some hair grooming items in the bathroom. The tasks included were shampooing, combing and/or brushing, and setting the hair. The items needed included: shampoo, creme rinse, shampoo brushes, combs, brushes, hair spray, hair tonics, conditioners, and pins, clips or curlers. (See Table XII). Because of the size and less frequent usage, the shampoo, creme rinse, and shampoo brush were stored with the extra supplies.

Applying make-up. Over half of the homemakers preferred storage for make-up items in the bathroom. Perhaps this was because water was often needed and a mirror and good lighting were available. The items stored were: eye pencils, tweezers, lipsticks, mascara, pressed powder, deodorant, foundation cream or liquid make-up, medicated lotions, facecleansers, facial tissue, hand and body lotions, and colognes. (See Table XIII).

TABLE XII

THE NUMBER OF HAIR GROOMING ITEMS THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIRED FOR THEIR STORAGE

Items	Items per family					Total families preferring		Recommendations	
	None	1	2	3	4*	Number	Per cent	Number	Space required Inches
Combs	5	7	7	3	2	19	79.1	3	0.5 x 1.0 x 7.0 0.5 x 2.0 x 8.0 0.5 x 2.0 x 8.0
Brushes	3	11	5	3	2	21	87.5	3	2.0 x 2.8 x 8.0 2.0 x 2.8 x 8.0 2.0 x 3.0 x 6.0
Pins, clips or curlers	17	5	2	0	0	7	29.2	1	2.5 x 3.5 x 5.5
Conditioners	17	7	0	0	0	7	29.2	1	4.0 x 3.0 x 1.5
Hair tonics	5	11	5	3	0	19	79.1	2	5.5 x 2.5 x 1.5 6.0 x 3.0 x 2.0
Hair sprays	16	8	0	0	0	8	33.3	1	7.0 x 2.3 x 2.3

\*Four or more.

TABLE XIII

THE NUMBER OF MAKE-UP ITEMS THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family					Total families preferring		Recommendations	
	None	1	2	3	4*	Number	Per cent	Number	Space required Inches
	Number of families								
Eye Pencils	16	5	3	0	0	8	33.3	1	0.5 x 0.5 x 5.0
Tweezers	15	7	2	0	0	9	37.5	1	0.5 x 3.5 x 0.5
Lipsticks	6	5	2	3	8	18	75.0	4	0.8 x 3.0 x 0.8
Mascara	10	12	2	0	0	14	58.3	1	1.5 x 3.5 x 1.5
Pressed Powder	13	6	1	3	1	11	45.8	2	1.5 x 3.5 x 3.5
Deodorant	8	8	6	1	1	16	66.6	2	2.0 x 2.5 x 2.5 5.0 x 2.5 x 2.5
Foundation Cream (or Liquid Make-Up)	11	8	4	1	0	13	54.2	2	3.0 x 2.5 x 2.0 4.0 x 2.5 x 2.0
Medicated Lotions	16	7	1	0	0	8	33.3	1	3.0 x 3.0 x 3.0
Face Cleansers	2	12	6	4	0	22	91.7	2	3.5 x 3.0 x 3.0 7.0 x 2.5 x 2.5
F Facial Tissues	18	6	0	0	0	6	25.0	1	4.0 x 5.0 x 10.5
Hand and Body Lotions	9	8	6	1	0	15	62.4	2	5.5 x 2.5 x 2.5 6.5 x 3.0 x 2.5
Colognes	13	7	2	2	0	11	45.8	1	6.0 x 3.0 x 2.5

\*Four or more.

Shallow storage near the lavatory was preferred for these items. A wall holder near the lavatory was suggested for the facial tissue. Some of the small items were often misplaced or hard to locate. If they were stored in a box or a special tray, they would be more convenient.

Polishing shoes. Five of the homemakers (20.8 per cent) indicated that at least one member of the family polished shoes in the bathroom. The only item desired by the majority of these was shoe polish. In this study it was stored with the extra supplies.

From the comments made by the homemakers it would appear that a greater number of men would prefer the bathroom for polishing shoes. The homemakers often said that they preferred the basement or utility room because of the stains and mess left by the family members.

Perhaps this activity would be better in another room especially if the bathroom were already over-burdened with more personal type activities.

Reading. Some homemakers stated that family members read in the bathroom, but that they did not prefer storage there because it would encourage spending too much time in an already over-burdened room. This was perhaps true for many families with only one bathroom. However, half of the homemakers would prefer to have a rack of some type for

magazines, newspapers, and books in the bathroom. Therefore, it was suggested by this study.

Cleaning the bathroom. All twenty-four of the families indicated a desire for storage of cleaning supplies in the bathroom. The items needed were: cleansers, commode cleansers, commode brushes, air deodorizers, and sponges. (See Table XIV). Floor mops, waxes, and metal polishes were used in the bathrooms, but other locations were preferred for storage because of more frequent usage there. A plunger was present in the bathrooms in some homes, but because of its size, perhaps it would be better stored in a cleaning closet.

All but one of the homemakers used a commode brush regularly. Most of the homemakers preferred to hang it in a well ventilated place that was out of sight. A round metal or plastic storage unit that would hold both the brush and commode cleanser could be used.

Perhaps storage of these items would be best on a shelf of the linen closet in the bathroom or under the lavatory, if it were enclosed.

Bathing items. Both hand and face bathing and body bathing items were considered here since the items were similar and required the same kind of extra supplies.

Towels, washcloths and soap for hand and face

TABLE XIV

THE NUMBER OF ROOM CLEANING ITEMS THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family					Total families preferring		Recommendations	
	None	1	2	3	4*	Number	Per cent	Number	Space required Inches
Sponges	14	8	2	0	0	10	41.7	1	1.3 x 6.0 x 4.0
Commode Brushes	1	21	2	0	0	23	95.8	1	3.0 x 5.0 x 17.0
Commode Cleansers	14	10	0	0	0	10	41.7	1	7.0 x 3.0 x 3.0
Air Deodorizers	13	9	2	0	0	11	45.8	1	7.0 x 3.0 x 3.0
Cleansers	1	15	5	2	1	23	95.8	2	7.0 x 4.0 x 4.0 8.0 x 3.0 x 3.0

\*Four or more.



bathing were needed near the lavatory. Preferably each family member should have his own towel rack or holder. A nail brush was needed near the sink and might be either hung or stored on a shelf.

The articles used by most of the families for body bathing in addition to towels, washcloths and soap were: shower caps, bath brushes, bubble bath, and bath powder. (See Table XV). Towel racks near the bath tub and shower should be included in the plan with one allowed for each family member. Soap holders that could be reached easily while using a tub or shower were needed. Hooks for shower caps were desired by most of the families. A bath brush hung near the tub or stored on the ledge was preferred by the families. A hook on the door for robes was preferred by all families. The two remaining items: bubble bath and bath powder, because of their sizes, were stored with the extra supplies.

Storing bathroom linens. Twenty of the homemakers (83.3 per cent) preferred to store the bathroom linens in the bathroom. Most of them preferred closed shelves for these.

The number and kind of bathroom linens preferred for storage were: twenty bath towels, eighteen hand towels, six guest towels, twenty-four washcloths, three sets of commode

TABLE XV

THE NUMBER OF BATHING ITEMS THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family			Total families preferring		Number	Recommendations Space required Inches
	None	1	2	Number	Per cent		
Nail Brushes	14	9	1	10	41.7	1	1.5 x 1.5 x 4.0
Bath Brushes	16	8	0	8	33.3	1	2.5 x 15.5 x 4.0
Shower Caps	10	13	1	14	58.3	1	
Soap (at tub and sink)	0	24	0	24	100.0	1	
Linens*							

\*Storage for bath towels, face towels and wash cloths used for both hand and face and body bathing are given in Table XVI.

covers and bath mats. (See Table XVI).

Space recommendations given in Storage Space Requirements For Household Textiles<sup>1</sup> were considered in establishing the recommended space.

Storing first aid and medical supplies. All of the families needed storage for some first aid and medical supplies in the bathroom. The kinds and amounts varied considerably with the families. The items included were: cotton, gauze, adhesive bandages, adhesive tape, Merthiolate or Merchrochrome or iodine, petrolatum, nose drops, cold remedies, aspirin, boric acid solutions, tubes of medicine, prescription bottles, prescription boxes, sun tan preparations, laxatives, baby oils, liniments, antiseptics, foot powders, and mouthwash. (See Table XVII).

Many of the families took medicines in the kitchen where clean glasses were available rather than in the bathroom.

Numerous prescription bottles, dated from 1948 to 1960, were stored in the bathrooms. It was doubtful that all of these were used or would be used again. Perhaps disposal would be advisable.

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<sup>1</sup>A. Woolrich, M. M. White, and M. A. Richards, Storage Space Requirements For Household Textiles, United States Department of Agriculture, Agricultural Research Service, Bulletin 62-2 (Washington: Government Printing Office, 1955).

TABLE XVI

THE NUMBER OF BATHROOM LINENS THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family									Total families		Recommendations	
	None	1-3	4-6	7-9	10-12	13-15	16-18	19-21	Over 21	Number	Per cent	Number	Space required*
	Number of families											Inches	
<b>Towels</b>													
Guest	5	3	13	0	3	0	0	0	0	19	79.1	6	3.0 x 6.0 x 8.0
Hand	2	0	4	2	8	1	3	1	3	22	91.7	18	4.0 x 7.0 x 14.0
Bath	0	0	0	1	9	3	5	3	3	24	100.0	20	6.0 x 10.0 x 12.0
Wash Cloths	0	0	0	1	13	3	3	2	5	24	100.0	24	4.0 x 7.0 x 7.0
Commode Covers	6	15	2	0	1	0	0	0	0	18	75.0	3	4.0 x 7.0 x 14.0
Bath Mats	4	18	1	0	1	0	0	0	0	20	83.3	3	4.0 x 11.0 x 12.0

\*Space required for two of each item.

TABLE XVII

THE NUMBER OF FIRST AID AND MEDICAL SUPPLIES THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM  
WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family						Total families using		Recommendations	
	None	1	2	3	4	5*	Number	Per cent	Number	Space required
	Number of families									
Prescription Boxes	18	5	0	1	0	0	6	25.0	1	1.0 x 3.0 x 1.5
Adhesive Tape	20	1	2	1	0	0	4	16.6	1	1.3 x 3.0 x 3.0
Tubes	14	6	0	1	1	2	10	41.7	3	1.5 x 1.5 x 5.0
Gauze	17	4	2	1	0	0	7	29.1	1	2.5 x 2.5 x 2.5
Prescription Bottles	5	8	2	0	1	8	19	79.1	9	3.0 x 1.5 x 1.5 3.0 x 1.3 x 1.3 3.0 x 1.5 x 1.5 4.0 x 1.5 x 1.5 4.0 x 4.0 x 3.0 4.3 x 2.3 x 1.3 5.0 x 2.0 x 2.0 5.0 x 3.5 x 3.5 6.0 x 3.0 x 3.0
Merthiolate	8	12	4	0	0	0	16	66.6	1	3.5 x 1.5 x 1.3
Petrolatum	17	7	0	0	0	0	7	29.1	1	3.5 x 3.0 x 3.0
Cotton	10	5	1	0	0	0	6	25.0	1	3.5 x 3.5 x 5.0
Nose Drops	10	11	0	3	0	0	14	58.3	1	4.0 x 1.5 x 1.5

TABLE XVII (continued)

Items	Number per family						Total families preferring		Recommendations	
	None	1	2	3	4	5*	Number	Per cent	Number	Space required Inches
Aspirin	13	4	4	2	1	0	11	45.8	2	4.0 x 1.5 x 2.0
Boric Acid	16	8	0	0	0	0	8	33.3	1	4.0 x 1.8 x 1.3
Cold Remedies	14	6	4	0	0	0	10	41.7	1	4.0 x 2.0 x 2.0
Adhesive Bandages	15	9	0	0	0	0	9	37.5	1	4.0 x 3.5 x 1.5
Laxatives	19	5	0	0	0	0	5	20.8	1	5.3 x 2.0 x 1.0
Baby Oil	18	6	0	0	0	0	6	25.0	1	5.5 x 2.5 x 1.5
Liniment	20	4	0	0	0	0	4	16.6	1	5.5 x 2.0 x 2.0
Antiseptics	9	11	3	0	1	0	15	62.4	1	5.5 x 3.0 x 2.5
Foot Powders	16	4	4	0	0	0	8	33.3	1	6.0 x 2.5 x 2.5
Mouth Wash	7	14	3	0	0	0	17	70.8	1	6.0 x 2.5 x 2.5
Sun Tan Preparations	20	4	0	0	0	0	4	16.6	1	6.3 x 3.3 x 1.3

\*Five or more.

It was, however, not the purpose of this study to determine what should be stored or disposed of, but to consider the space needed for articles which the families had and wanted.

Storage of extra supplies. Twenty-two of the families (91.7 per cent) preferred storage for extra supplies in the bathroom. The items included were: toilet tissue, soap, new toothbrushes, and facial tissues. Because of their size and less frequent usage, the following articles were stored here: shampoo, creme rinse, shampoo brush, alcohol, bath powder, bubble bath, shoe polish, syringes, and hot water bottles. (See Table XVIII). Perhaps these items would be best stored on a shelf of the bathroom linen closet.

Storing soiled clothes or linens. Half of the homemakers preferred some type storage for soiled clothes and linens in the bathroom. Those suggested were hampers, built-in bins or chutes to the basement if the washer was located there.

Drying hand laundered garments. A drying rack that would fold up was desired by eleven of the homemakers (45.8 per cent) who preferred the bathroom for hand laundering. Provision of a rack would prevent use of towel racks for garment drying.

TABLE XVIII

THE NUMBER OF EXTRA, LESS FREQUENTLY USED OR IRREGULAR SIZED ARTICLES THAT THE FAMILIES PREFERRED TO STORE IN THE BATHROOM WITH RECOMMENDATIONS FOR NUMBER AND SPACE REQUIREMENTS FOR THEIR STORAGE

Items	Items per family								Total families preferring		Recommendations	
	None	1	2	3	4	5	6	7*	Number	Per cent	Number	Space required
	Number of families											
Toothbrushes	18	3	1	1	0	0	0	0	6	25.0	1	1.0 x 1.5 x 7.0
Shampoo Brushes	19	5	0	0	0	0	0	0	5	20.8	1	1.5 x 3.0 x 7.0
Soap	0	0	4	3	7	2	4	4	24	100.0	6	1.5 x 4.0 x 2.5
Hot Water Bottles	20	4	0	0	0	0	0	0	4	16.6	1	1.5 x 13.0 x 7.0
Facial Tissue	19	3	2	0	0	0	0	0	5	20.8	1	4.0 x 5.0 x 10.5
Bath Powder	8	12	1	2	1	0	0	0	16	16.6	1	4.0 x 5.5 x 5.5
Toilet Tissue	0	1	5	3	8	1	3	3	24	100.0	6	5.0 x 4.5 x 4.5
Syringe	20	4	0	0	0	0	0	0	4	16.6	1	6.0 x 2.0 x 2.5
Shoe Polish	19	1	4	0	0	0	0	0	5	20.8	2	6.0 x 3.5 x 3.5
Crema Rinse	13	11	0	0	0	0	0	0	11	45.8	1	8.0 x 4.0 x 2.0



TABLE XVIII (continued)

Items	Items per family								Total families preferring		Recommendations	
	None	1	2	3	4	5	6	7*	Number	Per cent	Number	Space required
	Number of families											
Shampoo	1	13	6	4	0	0	0	0	23	95.8	2	8.0 x 3.5 x 3.5
Alcohol	19	5	0	0	0	0	0	0	5	20.8	1	8.3 x 3.5 x 2.5
Bubble Bath	10	12	2	0	0	0	0	0	14	58.3	1	8.5 x 6.0 x 2.3

\*Seven or more

### Total Storage Requirements

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The twenty-four families studied preferred that items for thirteen tasks be stored in the bathrooms. Very few of the items were actually in the bathroom due to lack of storage space. There were seventy-one kinds of articles stored. Counting the replicates there was a total of two hundred eight items which the families wanted stored in the bathroom. The needed storage could be supplied in numerous ways. Shelves or drawers, hooks, holders, racks and hampers could be used according to type of items stored.

Shelf or drawer storage. Insofar as possible, storage space for items was considered according to task. The storage for some items, that were used less frequently, were combined for more than one task when the height or depth of the shelf required was similar.

Bathroom storage space needed by the families studied was considered, first according to depth of shelf or drawer required. The linear requirements are given according to five depths, three shallow and two deep in Table XIX. Any combination of shallow or deep shelves and drawers would be possible where linear inches are given. All of the items could be stored on deep shelves or in deep drawers, but deep shelf storage of small items would not be convenient to see

TABLE XIX

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LINEAR INCHES OF SHELF OR DRAWER STORAGE NEEDED FOR THE EIGHT  
 REQUIRED HEIGHTS GIVEN FOR ALTERNATE DEPTHS TO SATISFY  
 THE STORAGE PREFERENCES OF THE FAMILIES STUDIED

Height (Inches)	Articles Stored	Linear inches of storage space for alternate depths of shelves or drawers				
		4	5	6	12	16
3.0	Make-up	8	5	5	4	4
	Dental Hygiene	8	7	7	2	2
4.5	Hair Grooming	23	18	15	8	6
5.0	First Aid, Medical	27	21	19	8	7
7.0	Shaving	24	20	18	9	6
	First Aid, Medical	16	12	10	5	4
8.0	Make-up	20	13	11	6	5
	Hair Grooming	7	6	6	-	-
9.0	Cleaning	-	-	10	6	4
10.0	Extra	-	-	44	24	20
12.0	Linens	-	-	-	120	81

and to reach. Since articles stored in drawers can be pulled out into view, such storage space could be planned for them as an alternate to shallow shelves.

The three shallow depths, four, five, or six inches, are alternate depths and any one or combination of two or three might be used. Likewise, either the twelve or the sixteen inch depth, or a combination of the two might be used to satisfy the bathroom storage requirements of the families.

The linear inches of shelving or of drawers varied according to the depth provided. In most cases the deeper the shelf or drawer, the fewer the linear inches required. However, the deeper the shelves, the more apt articles are to be stored two deep. In some cases they were merely turned in another direction when placed on a different depth of shelf.

The total length of shelves and drawers needed, once the depths are chosen, can be summed according to the choices made from Table XIX. For example, if all shallow shelves were to be four inches in depth, a total of 133 linear inches of such shelving would be needed. If make-up, dental, hair grooming and shaving items were to be combined in a shallow cabinet near the sink and a four inch depth was chosen for this cabinet, the total length of the shelving needed would be seventy-three inches. Storage for first aid and medical supplies and cleaning supplies could be

planned in another cabinet six inches in depth with a total of thirty-nine inches for the length of the shelves. Since some of the articles for extra supplies and bathroom linens cannot be stored conveniently on such shallow depths of shelves, a total of one hundred forty-four linear inches of twelve inch deep shelves or a total of one hundred one inches of sixteen inch deep shelves would provide the deep storage space needed by the families studied.

The size of the cabinets is also dependent on the distance between the shelves or distance from top to bottom of drawers. Once the depth has been chosen from the alternatives, the linear requirement can be summed and the height of the cabinet or cabinets is then dependent on the distance between shelves or drawers. (See Table XIX). Low articles that can be stored within a small space between shelves could, of course, be stored with more space above them, but this would hardly be economical. High articles, such as those requiring eight inches between shelves obviously could not be stored on a shelf that provides only five inches between shelves. It is generally accepted that the height for a shelf should not exceed seventy-two inches. If the taller shelves needed are placed at the top the other shelves are lowered. A lower shelf would be advisable for more frequently used items or items used by children. If a cabinet

is placed over the lavatory some clearance is needed for the faucets. If a sliding door or an open shelf is planned, less clearance will be needed.

When a certain length of cabinet is to be used, the distance of the shelves can be planned to fit the height requirements by first considering the amount for the lower heights and providing any excess needs in the next higher bracket.

#### Storage to Supplement Shelves or Drawers

Some articles were more convenient and economical of space if special storage provisions were made in the bathroom (See Table XX).

For the families studied, holders were needed at the tub and lavatory for soap. An additional holder placed higher for the shower user would add convenience. Holders for six toothbrushes and two drinking glasses were needed near the lavatory. Also located nearby, a wall holder for facial tissue was needed.

Hooks were needed for various brushes including bath brush, nail brush, shampoo brush, and commode brush. The latter might be stored in a round metal or plastic holder with the commode cleanser. Hooks were needed for shower caps at the tub or shower, for hot water bottles and for bathrobes.

TABLE XX

BATHROOM STORAGE FACILITIES TO SUPPLEMENT  
SHELF AND DRAWER STORAGE

16

Article	Suggested Facility
Bathbrush	Hook
Bathrobes	Hook on door
Commode Brush	Hook or round metal holder
Drinking Glasses	Holder for two at lavatory
Facial Tissue	Wall holder
Hand laundered garments	Folding rack
Hot water bottle	Hook
Magazines, newspaper	Rack or holder
Shampoo Brush	Hook or shelf
Shower Caps	Hook near tub
Soap	Holder at lavatory Holder at tub and shower
Soiled clothes and linens	Large hamper, chute, or built-in bin
Toothbrushes	Holders for six at lavatory
Towels	Hooks or holders for two per family member

A magazine rack was needed for newspapers and magazines. A drying rack for hand laundered garments was required in order to free towel racks. Individual storage for two towels, hand and bath, was needed by each family member. One was preferred near the tub and the other near the lavatory. These might be towel racks, hooks or any of the other type towel holders.

Storage for soiled clothes and linens was needed. It might be a laundry chute or large hamper or a built-in bin.

For all practical purposes it appears that three types of storage: shallow shelves or drawers near the lavatory, deep shelves or drawers conveniently placed elsewhere in the bathroom, and supplementary storage were preferred in the bathroom to satisfy the storage needs of the majority of the families.



## CHAPTER V

### SUMMARY AND CONCLUSIONS

Inadequacy of storage facilities in bathrooms for both old and new houses is easily recognized. Neither housing designers nor homemakers seem aware of the gross inadequacies of bathroom storage. It is important, therefore, that builders, designers and families have access to accurate information about the bathroom storage needs of families. Such information should be based on empirical study of the tasks family members perform in the bathroom and the supplies and equipment which they prefer to have stored there. The present study was undertaken to gather such information and to interpret it into the kinds and amount of storage space families require in bathrooms.

The data were obtained by personal interview with the homemakers in February, 1960. The bathroom storage preferences of twenty-four families in Guilford County, North Carolina, with incomes from 4,000 to 15,000 dollars form the basis of this study. Because childless homes would not be as representative of family needs, the families were selected on the basis of having at least one child under eighteen years of age.

Tasks performed in the bathroom for which storage was preferred in the majority of the homes studied were: shaving, grooming hair, applying make-up, polishing shoes, reading, room cleaning, and bathing. In addition, storage was required for bathroom linens, first aid and medical supplies, extra supplies, soiled clothes and linens and hand laundered garments.

The amounts of storage space recommended for the families was based on the finding that many items were used by almost all the families. At the same time the families tended to have some peculiar preferences and to omit some of the other items. Since space not needed by families for their omissions could be used for their preferences, planning storage for the quantity of each item that eighty-seven per cent of the families had on hand should meet the needs of all families.

The kind and number of articles used in the bathroom varied with the families. Articles which at least four homemakers said that members of their families preferred to use and to store in the bathroom were allowed storage space in the recommendations. On this basis, storage space was needed for seventy-one different kinds of articles. The number of each of the seventy-one which the families used

and preferred to store in the bathroom varied. The number for which storage space was allowed would satisfy the preferences of the large majority of the families. Some of the families wanted space for unusually large numbers of items, for example, eleven packages of razor blades or twenty-six bars of soap. Such preferences were disregarded in determining the space requirements. On the whole, eighty-seven per cent of the families would be satisfied with the number of items for which space was allowed. Here again, those who wanted unusually large numbers of some kinds of items might want a smaller number of another kind of item so that, by adjusting location of storage, all might find enough space for their particular preferences. Counting all replicates, there were two hundred eight individual items for which storage space was allowed. Sixty-two of these were the extra linens used for hand, face and body bathing.

In determining the amount of space to allow for each item the measurements of that item as found in the homes studied, were listed in ascending order according to height. All three measurements, height, depth and length were listed. From these lists the three measurements, height, depth and length, that would accommodate the majority of the sizes used by the families studied were established. These measurements became the basis, therefore, of the kind and amount of storage space needed in bathrooms as established by this study.

The measurements for height of items indicated that eight distances between shelves or depths of drawers are required for convenient storage of items best stored on shelves or in drawers. The depth of the items to be stored indicated that two depths, shallow and deep, are required for convenient use of storage space. The shallow storage needed to be at least four inches and the depth at least twelve inches. The shallow depth might also be five or six inches if articles were to be stored one behind the other. Dependent on the depth of the shelves or drawers, the linear inches of such space needed were calculated. Thus three measurements, height, depth and length, for the shelves and drawers, were established to meet the bathroom storage requirements of the twenty-four families studied. These became the basis for determining the size of cabinets, shallow and deep, that would prove adequate for the families' need for bathroom storage except for items to be hung or placed in holders.

Three types of storage, shallow near the lavatory, deep storage, and supplementary storage, were recommended. Shallow storage for cosmetics, dental hygiene, hair grooming, and shaving items and for first aid and medical supplies could be provided in numerous ways. Projecting the shallow storage as wall cabinets for items used near the lavatory, indicated that two cabinets from nineteen to thirty inches

from top to bottom were needed. The differences in size varied with the depth and length of shelves that might be used. Some possible combinations with shelves of four, five and six inch depths and with fourteen, sixteen, eighteen, twenty and twenty-four inch lengths, including the spacing between the shelves, are given in Table XXI.

Deep storage for linens, extra supplies and cleaning supplies could be provided as closets, shelves or drawers. Two depths, twelve or sixteen inches, were suggested. The length of the shelves or drawers was calculated from the linear requirement of the items stored. Some of the storage lengths are more economical of space than others because some lengths allow more flexibility of storage. Some of the alternates for deep storage areas are given in Table XXII.

Supplementary storage for items such as brushes, hot water bottles, robes, towels, soap and magazines, could also be provided in numerous ways. Hooks, holders, hampers and racks were suggested.

Note that the amount of storage preferred was very different from the amount of storage the homes actually had. All the bathrooms had a small medicine cabinet that provided some shallow storage. The cabinet was generally 18.5 x 4.3 x 14.5 inches which is an average of 43.2 linear inches of shallow storage. This was slightly over a third of what

TABLE XXI

ALTERNATES FOR SHALLOW STORAGE IN BATHROOMS  
TO MEET THE NEEDS OF THE TWENTY-FOUR FAMILIES STUDIED

Depth inches	Length inches	Inches between shelves					Total number		Practical Application
		3.0	4.5	5.0	7.0	8.0	Surfaces	Linear inches	
4	14	1	2	2	3	2	10	140	2 cabinets 30x4x14
5	14	1	1	2	2	2	8	112	2 cabinets 28x5x14
6	14	1	1	1	2	2	7	98	2 cabinets 21x6x14
4	16	1	1	2	3	2	9	144	2 cabinets 30x4x16
5	16	1	1	1	2	2	7	112	2 cabinets 24x5x16
6	16	1	1	1	1	2	6	96	2 cabinets 21x6x16
4	18	1	1	2	2	2	8	144	2 cabinets 28x4x18
5	18	1	1	1	1	2	6	108	2 cabinets 20x5x18
6	18	1	1	1	2	1	6	108	2 cabinets 20x6x18
4	20	1	1	1	2	2	7	140	2 cabinets 24x4x20
5	20	1	1	1	2	1	6	120	2 cabinets 20x5x20
6	20	0	1	1	2	1	5	100	2 cabinets 19x6x20
4	24	1	1	1	1	2	6	144	2 cabinets 20x4x24
5	24	0	1	1	2	1	5	120	2 cabinets 19x5x24
6	24	0	1	1	1	1	4	96	1 cabinet 27x6x24

TABLE XXII  
 ALTERNATES FOR DEEP STORAGE IN BATHROOMS  
 TO MEET THE NEEDS OF THE TWENTY-FOUR FAMILIES STUDIED

Depth inches	Length each inches	Total Number	
		Surfaces*	Linear inches
12	30	5	150
12	32	5	160
12	40	4	160
16	27	4	108
16	32	4	128
16	40	3	120

\*Height between all shelves or depth of all drawers for these calculations was 12 inches.

was desired. Only four of the bathrooms had closets to provide the deep storage needed. It was obvious that the storage space provided in the bathrooms studied was far from adequate.

Although one can not make general storage recommendations for all bathrooms from the twenty-four families studied, the inadequacies pointed up and the desire of the homemakers for better storage indicate the great need for further study of bathroom storage areas.

It is not possible to project general recommendations for all bathrooms from a study of a small number, however, this study does indicate the need for well planned storage space in the bathroom.

Clear, concise and accurate information regarding solutions that provide convenient bathroom storage should be made available to families, builders and designers. The amount of storage, the kind of storage and ways of obtaining it in both old and new homes are all of vital importance. Perhaps with an increased knowledge and awakened realization of its importance, convenient, adequate storage would be incorporated into housing plans.



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APPENDIX

STORAGE FOR BATHROOMS

Name \_\_\_\_\_ Address \_\_\_\_\_

No. persons in house \_\_\_\_\_

Ages \_\_\_\_\_ Years \_\_\_\_\_ Remarks by Homemaker:  
Husband . . . . . \_\_\_\_\_  
Wife . . . . . \_\_\_\_\_  
Children  
Girls . . . . . \_\_\_\_\_  
Boys . . . . . \_\_\_\_\_

Number  
Bedrooms . . . . . \_\_\_\_\_  
Bathrooms . . . . . \_\_\_\_\_

Years  
Age of house . . . . . \_\_\_\_\_  
Length of residence . . . . . \_\_\_\_\_

Approx. cost . . . . . \$ \_\_\_\_\_  
or monthly rent . . . . . \$ \_\_\_\_\_

If house is owned:  
Plans were obtained from: (check)  
Stock . . . . . \_\_\_\_\_  
Magazine . . . . . \_\_\_\_\_  
Friends . . . . . \_\_\_\_\_  
Contractor . . . . . \_\_\_\_\_  
Architect . . . . . \_\_\_\_\_

Bought completed . . . . . \_\_\_\_\_

Profession of husband \_\_\_\_\_

Profession of wife . . . . . \_\_\_\_\_

Your total combined yearly income: (check)  
\$1,000 - \$3,000 . . . . . \_\_\_\_\_  
\$4,000 - \$6,000 . . . . . \_\_\_\_\_  
\$7,000 - \$9,000 . . . . . \_\_\_\_\_  
\$10,000 - \$15,000 . . . . . \_\_\_\_\_  
Over \$16,000 . . . . . \_\_\_\_\_

Education:	Wife	Husband
Grade School . . . . .	_____	_____
High School (1-3) . . . . .	_____	_____
High School (4) . . . . .	_____	_____
College (1-3) . . . . .	_____	_____
College (4) . . . . .	_____	_____
Graduate work . . . . .	_____	_____
Professional school . . . . .	_____	_____

Schedule No. \_\_\_\_\_



Bathing (Body, Face, Hands)

Soap: Holder at tub? Yes\_. No\_. Size of Soap \_\_\_\_\_.

Holder at sink? Yes\_. No\_. Size of Soap \_\_\_\_\_.

Does anyone not use soap? Yes\_. No\_. Specify \_\_\_\_\_.

Items	Where Used	Size & Shape	No.	Extras		Store Now	Preferred Storage	
				No.	Where		Location	Type
Bath brush								
Wife								
Husband								
Children								
Bath powder								
Wife								
Husband								
Children								
Bubble bath								
Wife								
Children								
Complexion Brush								
Wife								
Husband								
Children								
Hand & body lotion								
Wife								
Children								
Nail brush								
Wife								
Husband								
Children								
Shower cap								
Wife								
Girls								
Special face cleaners								

Schedule No. \_\_\_\_\_

### Shaving Face

Items	Where Used	Size and Shape	No.	Store Now	Preferred Storage		Extras No. Where
					Location	Type	
Electric razor							
Safety razor							
Blades							
Freshave lotion							
After shave lotion							
Lather brush							
Soap mug							
Spray lather							
Tube lather							
Talcum powder							
Styptic pencil							
Hand mirror							
Men's cologne							

### Shaving Legs

Do you shave your legs in the bathroom? Yes \_\_. No \_\_.  
 Where would you prefer to shave them? \_\_\_\_\_

Items	Where Used	Size and Shape	No.	Store Now	Preferred Storage		Extras No. Where
					Location	Type	
Electric razor							
Safety razor							
Blades							

Schedule No. \_\_\_\_\_

### Care of Hair

Does anyone shampoo hair in the bathroom? Yes \_\_. No \_\_.  
 Wife \_\_. Husband \_\_. Children \_\_.  
 Does anyone comb and/or brush hair there? Yes \_\_. No \_\_.  
 Wife \_\_. Husband \_\_. Children \_\_.  
 Does anyone set their hair in the bathroom? Yes \_\_. No \_\_.  
 Wife \_\_. Husband \_\_. Children \_\_.

Items	Where Used	Size and Shape	No.	Preferred Storage		Store Now	Extras No. Where
				Location	Type		
Comb							
Wife							
Husband							
Children							
Brush							
Wife							
Husband							
Children							
Shampoo							
Wife							
Husband							
Children							
Creme Rinse							
Wife							
Children							
Shampoo Brush							
Family							
Tint							
Wave Lotion							
Conditioner							
Pins, clips, curlers							
Wife							
Children							
Spray Net							
Wife							
Children							
Hair Tonic							
Husband							

Schedule No. \_\_\_\_\_



Make Up

Where do you prefer to makeup your face? \_\_\_\_\_ Remarks \_\_\_\_\_

Do you ever make up in the bathroom? Yes \_\_. No \_\_.

Items	Where Used	Size and Shape	Store No. Now	Preferred Storage		Extras	
				Location	Type	No.	Where
Cold cream							
Cotton balls							
Deodorant							
Eye pencil							
Eye shadow							
Facial tissue							
Foundation							
Lipstick							
Liquid make up							
Mascara							
Medicated lotion							
Night cream							
Powder							
Rouge							
Tweezers							

Schedule No. \_\_\_\_\_

Care of Nails

Does anyone care for finger nails or toe nails in the bathroom? Yes \_\_. No \_\_.  
 Who? Wife \_\_. Husband \_\_. Children \_\_.  
 Would you prefer the bathroom for this activity? Yes \_\_. No \_\_.

Items	Where Used	Size and Shape	No.	Store Now	Preferred Location	Storage Type	Extras No.	Where
Files								
Wife								
Husband								
Children								
Nail scissors								
Wife								
Husband								
Children								
Clippers								
Wife								
Husband								
Children								
Polish								
Wife								
Cuticle remover								
Wife								
Orange sticks								
Nail builder								

Schedule No. \_\_\_\_\_

### Polishing Shoes

Are shoes polished in the bathroom? Yes \_\_. No \_\_.  
 If yes, by whom? Wife \_\_. Husband \_\_. Children \_\_.  
 If not, where? \_\_\_\_\_  
 Where is the preferred place? \_\_\_\_\_

Items	Where Used	Size and Shape	No.	Store Now	Preferred Storage		Extras	
					Location	Type	No.	Where
Liquid polish								
Wife								
Husband								
Children								
Paste polish								
Wife								
Husband								
Children								
Shine cloth								
Wife								
Husband								
Children								
Brushes								
Wife								
Husband								
Children								
Suede Brushes								
wife								
Suede spray								
Wife								
Shoe dye								
Wife								
husband								
Cloths								

Child Care

Does your baby require any special care in the bathroom? Yes \_\_. No \_\_.

Is this the place preferred for child care? Yes \_\_. No \_\_.

Items	Where Used	Size and Shape	No.	Store Now	Preferred storage		Extras	
					Location	Type	No.	Where
Bath pan								
Bath cloth								
Baby soap								
Oil								
Powder								
Shampoo								
Cotton buds								
Clean clothes								
Soiled clothes								
Clean diapers								
Soiled diapers								

Schedule No. \_\_\_\_\_

Reading

Items	No.	Size and Shape	Store Now	Preferred Location	Storage Type
Newspapers:					
Wife					
Husband					
Children					
Magazines:					
Wife					
Husband					
Children					
Books:					
Wife					
Husband					
Children					

Schedule No. \_\_\_\_\_



Laundering

Do you launder in the bathroom? \_\_\_\_\_  
 Does anyone else? \_\_\_\_\_  
 Where do you prefer to do hand washing? \_\_\_\_\_

Items Washed	Where

Where do you hang these to dry? \_\_\_\_\_  
 Is there adequate space? Yes \_\_\_\_ No \_\_\_\_  
 What type drying facilities preferred? \_\_\_\_\_

Supplies	Size and Shape	No.	Store	Preferred Storage		Extras	
			Now	Location	Type	No.	Where
Detergent							
Bleach							
Starch							
Rinse							
Spot Remover							
Ammonia							
Cold water soap							

Soiled clothes and linens:

Location \_\_\_\_\_  
 Size \_\_\_\_\_  
 Preferred type \_\_\_\_\_

Schedule No. \_\_\_\_\_

Bath Linen Storage

Location \_\_\_\_\_

Distance to bathroom door? \_\_\_\_\_

How many shelves or drawers? \_\_\_\_\_

Distances between? \_\_\_\_\_

Depth? . . . . . \_\_\_\_\_

Width? . . . . . \_\_\_\_\_

	No.	Space for two	Preferred No.
Towels: Bath			
Face			
Hand			
Guest			
Washcloths			
Bath mats			
Commode covers			

Is your linen storage adequate? Yes \_\_. No \_\_.

Preferred location? \_\_\_\_\_

Preferred type:

Open shelf \_\_\_\_\_

Closed shelf \_\_\_\_\_

Drawers \_\_\_\_\_

Trays \_\_\_\_\_

Schedule No. \_\_\_\_\_





Room Cleaning

Items	Size and Shape	No.	Store Now	Preferred Storage		Extras	
				Location	Type	No.	Where
Commode brush							
Commode cleanser							
Floor mop							
Sponge							
Cleanser							
Wax							
Metal polish							
Air deodorizer							

Storage of Extra Items

Where is extra toilet tissue stored? . . . . . \_\_\_\_\_

How much? . . . . . \_\_\_\_\_ Rolls

Prefer storage? . . . . . \_\_\_\_\_

  

Where is extra soap stored? . . . . . \_\_\_\_\_

How much? . . . . . \_\_\_\_\_

Size? . . . . . \_\_\_\_\_

Prefer storage? . . . . . \_\_\_\_\_

Schedule No. \_\_\_\_\_

Other Items Stored in Bathroom

List Items	Size and Shape	Why stored in Bathroom?
------------	----------------	-------------------------

Schedule No. \_\_\_\_\_

Are there any other activities requiring storage that take place in the bathroom?

How do you feel about the storage you have in the bathroom?

What suggestions for improving the storage in your bath?

What suggestions for improving the storage in general in all bathrooms?  
(Closets \_\_\_\_\_) (Individual cabinets \_\_\_\_\_) Cabinet under sink \_\_\_\_\_)