

Washrooms and Lockers



Showers for employees at Link-Belt Company's Colmar plant are adjacent to lavatory and toilet rooms on mezzanine above shop offices where lockers are also located. Salt-glazed tile simplifies maintenance. (The Austin Co.)

FACILITIES for personal cleanliness, comfort and convenience are conspicuous factors in good working conditions. Adequate and well-maintained washrooms, toilets and lockers encourage better attitudes and attract desirable workers.

Attention to these requirements in planning industrial and commercial buildings will insure sufficient space and convenient location. Otherwise they may have to be fitted later into less suitable space.

Many plants have outgrown their original facilities. A survey of present equipment checked against the number of employees will show whether additions are needed. Also, equipment should be examined critically by modern standards of sanitation and appearance.

Assistance in planning new quarters or modernizing existing equipment is offered by many manufacturers of washroom equipment and supplies.

Higher standards of sanitation and lower maintenance costs can be achieved at little extra cost when buildings are planned. Dirt catching cracks and corners and dust collecting surfaces can be avoided. Floors and walls of easily cleanable material can be specified.

Location. Depending on the size and type of plant and its operations, lockers, lavatories and toilets may be

in one central location or scattered through the plant.

In smaller plants, washrooms and lockers are usually near the entrance.

Toilets should not be more than 200 feet away from any work place. In multi-story buildings, one on each floor is desirable. If that is not practicable, they should not be more than one floor above or below the work place.

Washrooms in large one-story buildings usually are scattered throughout the building. Where there are many small isolated buildings, as in chemical plants and railroad yards, or where much of the activity is outdoors, a separate building may house all these facilities.

Accommodations should be located so that employees will not have to cross highways or railroad tracks to reach them.

Washing Facilities

Max. No. Persons Using Facilities at One Time	No. Washing Facilities
15	1
30	2
50	3
For each additional 25 persons	1 additional
Note: Where circular fountains are used, 17 inches of outside rim equals one lavatory.	

When lockers and washrooms of a large plant are near the main entrance, small rooms with lavatories and toilets are often scattered through the plant. This saves the workers' time and makes it possible to close the main room during working hours, lessening danger of theft and requiring less supervision.

Separate washrooms and lockers are desirable for departments where there is exposure to excessive dust, dirt, heat, vapors, or moisture. These need more lavatories or shower baths than cleaner departments.

Offsetting the advantages of scattered facilities, is the higher cost of installation and maintenance. Centralized toilet and washing facilities are often preferable where women are employed. In some plants a full-time attendant may be needed.

In some large plants with underground passageways connecting buildings and departments, personal service facilities are often located along them, conserving space for manufacturing operations. Another space-saving method is to locate them on balconies.

Light. Fixtures should provide sufficient light in all parts of the room. Walls, ceilings and partitions should be light in color to conserve light and encourage cleanliness.

Ventilation. Unless the washroom has sufficient outside windows for natural ventilation, forced ventilation will be needed.

Floors, and walls to a height of at least six inches, should be of impervious material, such as glazed tile or concrete. Walls should form a tight joint at the floor level, or there should be a cove base at least six inches high.

Wash Fixtures

Group washing equipment. In industrial plants, institutions, schools and other establishments where facilities must be provided for large groups, circular wash fountains are the most frequent choice.

Eight to 10 users can be accommodated at a 54-inch circular fountain and 5 to 6 at a 36-inch unit. Fewer valves and plumbing connections mean additional economies in installation and maintenance.

Economy of water is another advantage. Several persons washing at a circular fountain use little more water than one at an individual basin. Each user washes in clean running water of regulated temperature. A foot or hand-controlled mechanism regulates the flow.

Semi-circular units 36 or 54 inches wide mounted against a wall are

used for narrow or irregular washrooms.

Precast stone and marble are the most frequently used materials. Some models are also available in enameled iron and stainless steel.

Individual basins of vitreous china or enameled iron make an attractive installation where comparatively small groups are to be accommodated.

Mixing faucets, rather than separate faucets for hot and cold water, are recommended. Hot and cold handles should be plainly marked, with the hot water valve always on the left side. Thermostatic control of water temperature is a desirable safeguard.

Stoppers should not be used. Faucets should permit washing in running water.

Where low first cost is a consideration, enameled troughs may be used. Over these are hot and cold water pipes with mixing faucets spaced not less than 24 inches apart. Double-width troughs, or single-width troughs back to back, save space.

Spray heads at basins or troughs encourage a thorough job of washing. They should be high enough above the trough to permit washing head, arms and shoulders under the spray.

Showers are needed in many industries, particularly where operations are hot or dirty, or where toxic materials are used. Requirements depend upon nature of the processes. They range from one shower to every five men to one for every 15 men.

Shower installations may be of the compartment or the circular multi-stall type.

Floors and approaches should be of slip-resistant material, such as concrete with an abrasive surface. A curb 4 inches high should be erected around shower stalls to keep water within the enclosure.

Painting the curb a contrasting color helps to prevent tripping.

Fungous infections. Warm moist air in shower rooms offers ideal conditions for propagation of the fungi that cause "athlete's foot." Floors and shower stalls should be scrubbed daily as a general sanitation measure. Disinfection by germicides is also helpful.

Preparations for toughening the skin, antiseptic foot powders, and careful drying of the feet are among the preventives used. Pans of antiseptic solution at the entrance of the

shower stalls have been found ineffective for killing fungi.

Emergency showers. Quick-acting showers should be installed at convenient locations where caustics, acids and other corrosives are handled.

Skin Cleansers

Skin cleansers may be classified as soaps, sulfonated oils, and synthetic detergents.

Powdered soaps are more economical than cakes. These consist principally of powdered hard soap and a water softener, to which a scrubbing agent may be added. Corn meal, the most commonly used scrubber, may be coarse or fine. Most of these soaps can be used with hard water.

Liquid soaps are generally satisfactory where a scrubber is not desired. They are frequently used in office washrooms and in first-aid rooms.

Soap should contain no free alkali and should show a low pH in dilute solution. This can be determined before purchasing.

Sulfonated oils are useful for dry and soap-sensitive skins. They are frequently used where workers are exposed to the defatting action of petroleum oils and organic solvents.

Synthetic detergents of several types, gentle but effective in their action, are being used in many industries. They are particularly useful for removing oil, wax and tar.

Waterless skin cleansers are a recent development. They are said to be non-irritating but effective in removing grease and grime. Dispensers which include a receptacle for waste towels are portable and can be set up quickly where needed and without plumbing connections. Dispensers for paper towels can be attached.

Use of naphtha, carbon tetrachloride, turpentine and other organic solvents for skin cleaning should be avoided. Some are toxic, some are flammable, and all have a drastic defatting action. If they must be used to remove substances such as lacquer, which resist other cleansers, emollient creams help to offset loss of natural skin oils.

Germicidal cleansers. Ordinary soaps and synthetic detergents re-



Hand creams, removable with soap and water, protect the skin against irritating substances on the job. (Boyer Campbell Co.)

move transient bacteria from the surface but are not effective in reducing those embedded in the skin. Many germicides, such as phenol compounds, have been tested as ingredients of skin cleansers but required high concentrations that made them unsuitable for daily use.

A promising recent development is hexachlorophene which has been incorporated in soaps and detergents used for medical, surgical and deodorant purposes.

Drying the Skin

Paper towels meet sanitary requirements and are economical and convenient. Dispensers should be kept filled and receptacles for used towels provided.

Recessed waste receptacles take one more object off the floor, improving the appearance of the washroom and making cleaning easier.

Mechanical hot air driers are acceptable from the hygienic standpoint. They are foot operated and may be of the pedestal type or recessed into the wall. Equipment should be well grounded and the electrical connection permanently installed without extension cords or plugs.

Towel services are used by some establishments, usually stores and offices. For industrial use, individual towels kept in lockers may not be changed often enough and they may come in contact with soiled work clothes.

Toilets

Toilets should be partitioned off from washrooms and lockers. Partitions of enameled metal are attractive in appearance and easy to keep clean. These partitions may be suspended from the ceiling or mounted on the walls.

Wall-mounted toilets save floor

Space Allowed for Toilet Facilities

(Minimum Floor Space—Square Feet)	
Closets	16
Lavatories	12
Urinals	12

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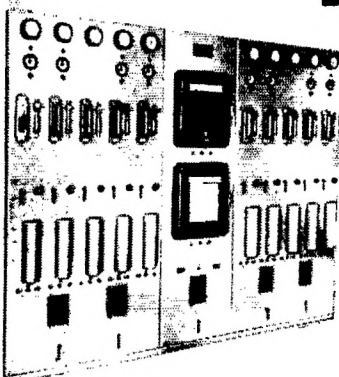
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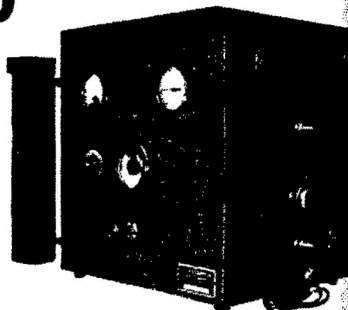


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cleaning easier and quicker. The oval-rim type of toilet with open-front plastic seat is most widely used. Foot-operated flush valves are favored by many.

The flushing mechanism should be rugged since employees often kick the handle instead of operating it by hand. Flush valves should be equipped with vacuum breakers to avoid back siphonage.

Minimum number of toilets specified by American Standard Code Z-4.1:

No. persons	No. toilets
1- 9	1
10- 24	2
25- 49	3
50-100	5
Over 100	1 for each additional 30 persons

Toilets should be not more than 200 feet from any work place; preferably less than 150 feet.

Facilities for men and women should be plainly marked.

Urinals should be placed throughout the plant in convenient locations to avoid loss of time. One urinal for each 40 men is usually sufficient. Automatic flush valves use more water but are more effective in maintaining cleanliness since many persons seem reluctant to touch hand-operated valves.

Floors of toilet rooms should be of impervious materials, smooth and free from cracks. Tile and concrete are satisfactory. Floor drains permit frequent flushing.

If possible, toilet rooms should have outside windows for light and ventilation. State or municipal regulations usually contain provisions for ventilation.

Switches for lights, electric driers or other equipment should be located so they cannot be operated by a person in contact with piping or other grounded conductor. In pull-chain fixtures the chain should be interrupted by an insulating link close to the fixture.

In plants where eating rooms are close to toilet rooms, covered receptacles for disposal of waste food should be provided in the lunch-rooms. Eating lunches in the toilet room should not be permitted.

Cuspidors should be provided where needed and cleaned at least daily. The disposable type requires less handling.

Lockers

A well-equipped locker room is an aid to orderly habits and often to health.

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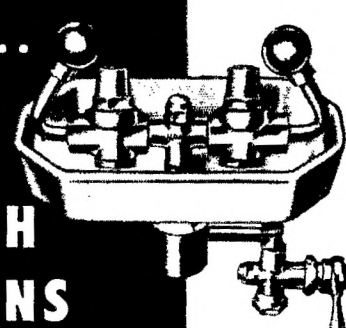
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Washrooms and Lockers

—From page 56

Exposure to toxic substances for extra precautions to prevent dangerous materials being carried away on clothing. Separate lockers prevent contact between street and work clothes. They should preferably be in separate rooms with shower stalls between them.

In such plants supervised washup periods and shower baths are important safeguards.

Sloping tops prevent their use for storage. Dust is conspicuous and easier to remove than with flat-topped lockers.

Built-in lockers extending to the ceiling avoid dust-catching surfaces.

Lockers should be at least four inches off the floor to permit flushing the floor without wetting the contents of the lockers.

Forced ventilation supplied through perforations in the bottom of the lockers or through louvers in the doors is helpful in removing odors. If the work is heavy or wet, circulation or heated air through the lockers is desirable.

Lockers in which oil-soaked clothing, waste, or newspapers are kept create a serious fire hazard. Lockers should have solid, fire-resisting sides and backs, but doors should have louvers for ventilation. Employees should not be permitted to leave clothing or rags saturated with oil or paint in lockers. Locker rooms should be fire-resistant, separated by fire walls from the main building.

Baskets and hangers on elevating chains are used instead of lockers in some industries, such as mines and foundries. Damp work clothing can be dried out between shifts and the drying is often hastened by steam coils at the ceiling. Such an arrangement conserves floor space.

Rest Rooms

A rest room should be provided in all establishments where 10 or more women are employed. Where there are fewer women and a separate room is not available, suitable space, properly screened, should be provided.

For 10 women, minimum space is 60 square feet, with at least 2 square feet for each additional woman employee. For less than 100 women at least one bed or couch should be provided; for 100 or 250 workers, 2 beds, and 1 bed for each additional 250 workers.