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Requirements for the Design of the Household Part in Modern Production Buildings

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Abstract: This article describes the rules for designing sanitary facilities in modern industrial buildings, design requirements, and issues of creating comfort for employees in the building.

Keywords: Industry, enterprise, sanitary facilities, workshop, auxiliary building, wardrobe room, sanitary unit, production process.

INTRODUCTION

Taking care of people's health, improving their working conditions, increasing their professional skills is one of our primary goals. To form the personnel system in the cultural-household service quality center organized in the industrial production facilities, maintain the stability of their composition, and the employees It has a positive effect on health and mood, and as a result significantly increases the labor productivity and quality of work [1].

In the auxiliary parts of industrial enterprises, as a rule, there are premises for sanitary and household, cultural and sports, communal and household, administrative and technical, commercial, technical service, health care, public catering, vocational training and public organizations[2].

The system of cultural and household services for industrial enterprises will be implemented in 4 stages:

1. The first stage covers the premises and buildings of the workshop. These include primary service system facilities such as toilets, smoking areas, drinking fountains, kiosks and vending machines, and rest rooms (service radius 75-100 m).
2. The 2nd level of service includes workshops and inter-workshop rooms and facilities. All of these are considered daily service facilities (service radius 300-400 m) and include a changing room (wardrobe), shower room, washroom, catering, first aid stations, and rooms for public organizations.
3. The third stage is periodic service facilities (service radius 800-1000 m), which include general medical and health care points, branches of polyclinics, canteens, gyms and clubs.
4. The fourth stage is facilities of regional importance with a service radius of 1.5-2.0 km: Episodic service facilities include public catering establishments, polyclinics, medical and sanitary facilities, industrial palaces, and engineering centers[(3].

RESEARCH MATERIALS AND METHODS

Sanitary-household rooms are divided into general and special rooms. Examples of common areas include cloakrooms, washrooms, toilets, smoking areas, nursing rooms, etc. Special rooms include shower rooms, laundry, clothing and footwear cleaning, dusting, drying, repair rooms, rooms for heating and cooling workers, a foot bath room, a drinking water supply, and rooms with equipment for placing clean and dirty clothes. All rooms intended for various functions are located in one building, unless this contradicts the construction standards and regulations of industrial enterprises. The total usable area of auxiliary buildings usually constitutes 20-30% of the total usable area of an industrial enterprise. The area of service rooms per person in the general list is assumed to be 4 m2. Of the determined total area, 65% is allocated for sanitary and household services, 25% for public catering, 2% for medical services, and 8% for cultural service rooms [4].

The production process in industrial enterprises is divided into four groups according to the sanitary classification:

- The first group, in turn, is divided into 3 subgroups (a, b, c) and is characterized by the fact that the production processes take place under normal conditions and the absence of harmful gases.
- The second group, in turn, is divided into five subgroups (a, b, c, d, e) and is characterized by the fact that the production processes take place in unfavorable meteorological conditions (or with dust formation), with heavy physical labor.
- The third group is divided into four subgroups (a, b, c, d) and the production processes are characterized by the release of harmful substances and the contamination of work clothes.
- The fourth group is divided into three subgroups (a, b, c) and the production processes require special rules to ensure product quality [5]

In the design of the household part in auxiliary buildings, as a rule, changing rooms, showers and washing rooms are combined into a “wardrobe block”. Wardrobes are intended for street, home, and special clothing [6].

In production processes I, IIa, the wardrobe block is designed as a general unit for all clothing, in other cases it is designed separately for each group.

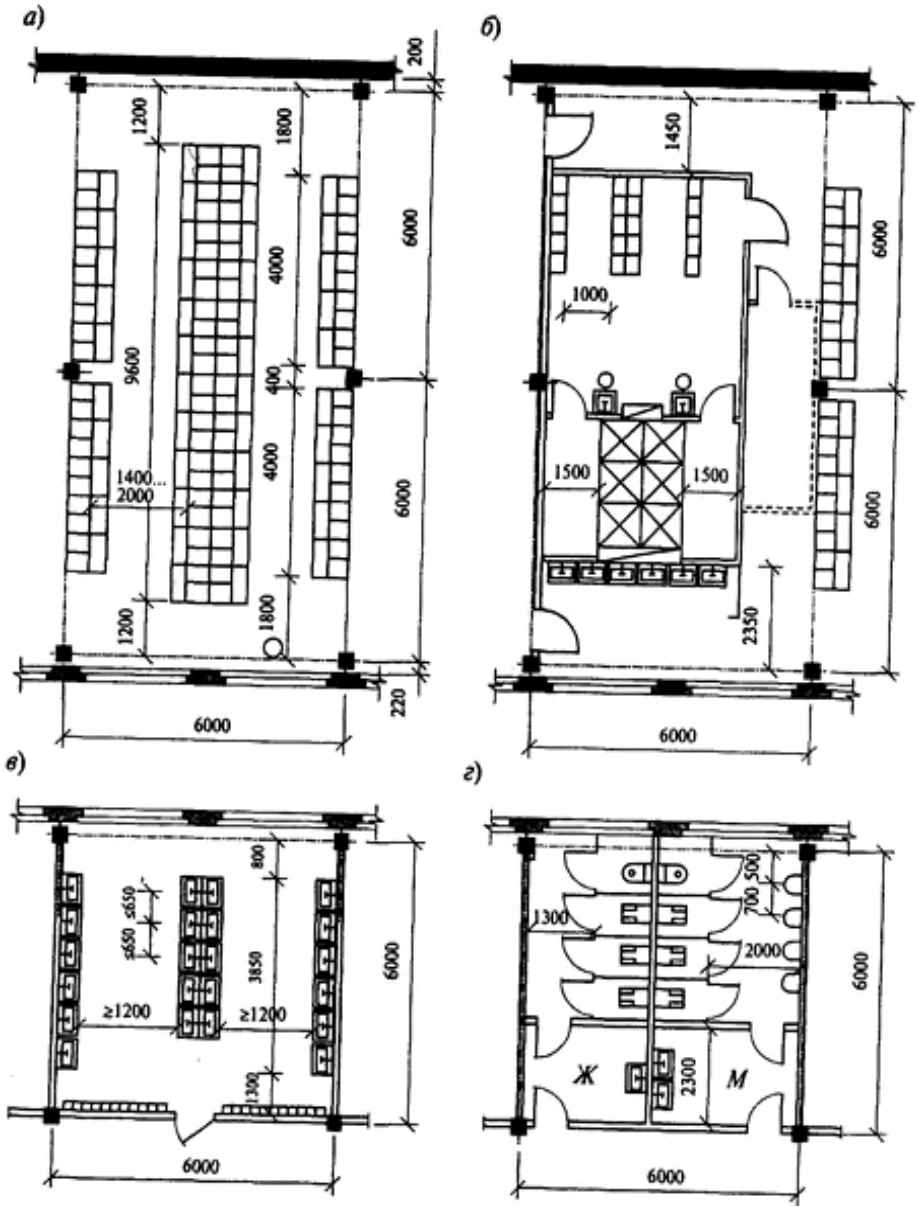
In production processes II (except IIa), III and IV, a separate wardrobe is designed for special clothing. Workers who come to work take off their clothes (street and home), bypass the shower room and go to the special clothing wardrobe. After returning from work, they go to the wardrobe of street and home clothes through the shower room and the anteroom [7]

In industrial enterprises, public catering, medical and cultural service rooms, workshops, public organizations, and administrative rooms, which are part of auxiliary buildings, are usually provided with natural light. It is necessary to design the rooms in the auxiliary buildings and their location so that they are convenient for workers. For example, the kitchen, medical center, cultural and educational rooms, and cloakroom-shower rooms are located on the first floor, close to the passage. Cloakrooms, like other sanitary and domestic rooms, may not be provided with natural light if this is not possible in the design [8].

Storage of clothes in wardrobes can be carried out on individual shelves with hooks, in a combined form. Shelves are made in an open or closed form, in a one- or two-sided design. The dimensions of the shelf compartments are taken as follows: depth 500 mm, width 200-500 mm, height 1650 mm; the number of compartments in the shelf is 2, 3, 4, 5. The materials from which the shelves are made must be moisture resistant. Therefore, they are made of metal, plastic, wood with a moisture-resistant finish. Wardrobes are also equipped with benches (group Ia is not included). The benches are 250 mm wide and are installed along the rows of shelves. In

enterprises with production processes in groups Ib and IIa, benches in utility rooms are placed on one side of the aisles between the shelves; in other cases, they are placed on both sides (Pic.1).

The distance between the fronts of the shelves is 1 m (if there are no chairs); 1.4 m (if chairs are placed on one side) and 2 m (if chairs are placed on both sides). If the wardrobes are equipped with hooks, 8 or 6 hooks are accepted per 1 m length.



Pic.1. Examples of layouts of individual sanitary and utility rooms:

a – dressing rooms for storing street and special clothing in 400x500 mm cabinets for 88 people; b – shower with washbasins and foot baths; c – washbasin with 22 taps; d – toilet (women's and men's).

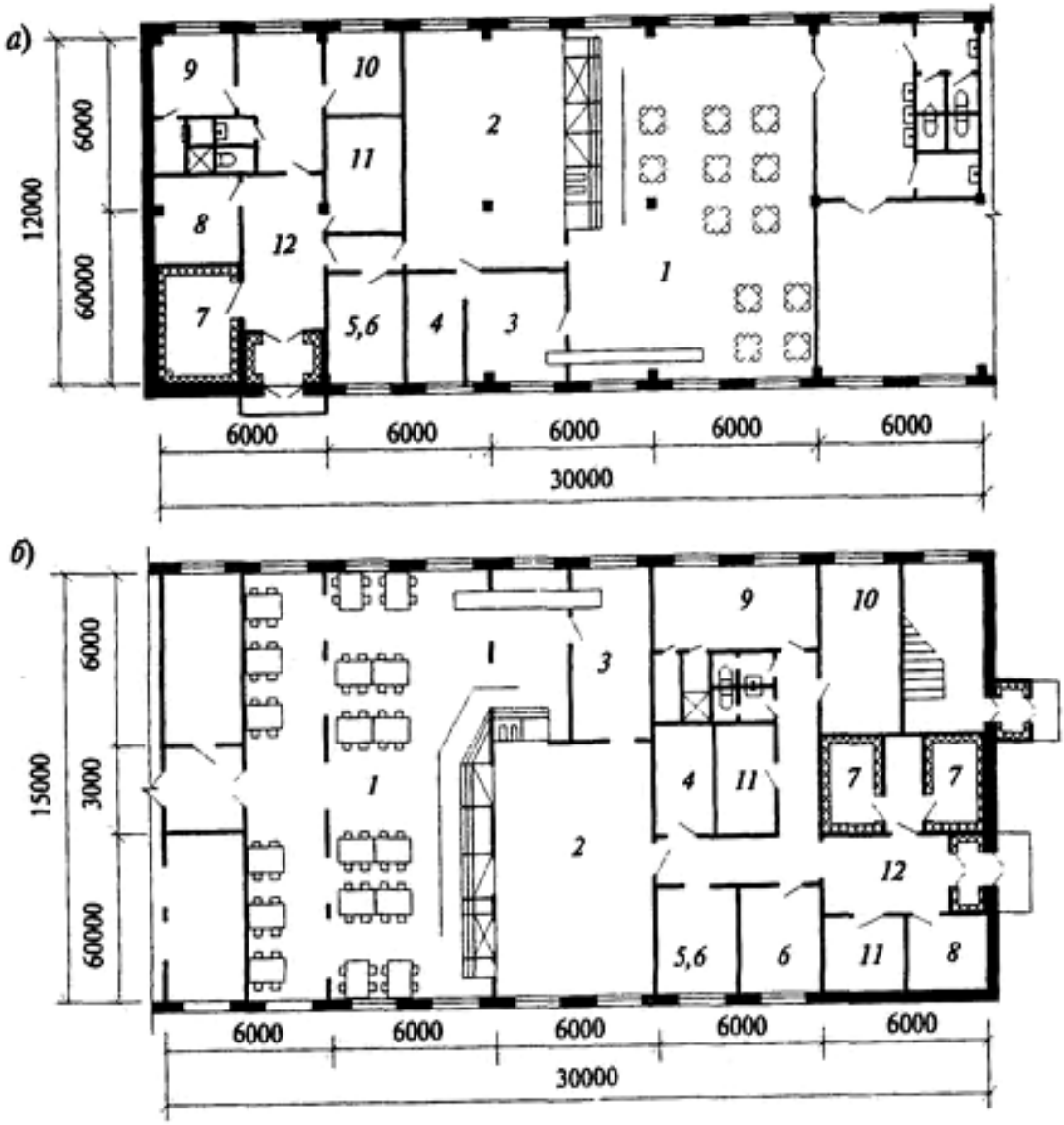
Sanitary facilities (toilets) are located in living quarters, directly in workshops (at a distance of 75 m from the workplace) or in open areas (at a distance of 150 m from the workplace). In multi-storey industrial buildings, toilets are located on each floor or floor by floor (depending on the number of employees).

A hand-washing sink is installed in the sanitary facility, at the entrance. One hand-washing sink will be installed for every four toilet stalls. One sink will be installed for every 15 employees.

The distance between rows of toilet bowls is assumed to be 2 m (with 6 or more bowls) or 1.5 m (with less than 6 bowls). If there is a wall on one side, this width is taken as 1.3 m. In multi-

storey industrial enterprises, toilets are designed near the staircases of the building, while in single-storey enterprises they are located in the basement, in the attic or in a closed room. When 15 or more women work in a maximum shift, personal hygiene rooms are designed for them. Such rooms are located near the women's toilets. The changing rooms consist of a changing room (0.7 m2 per person) and a connecting block (shower measuring 1.8x1.2 m). 1 shower block is provided for every 100 women.

Employees are allowed 20 minutes to be in the kitchen and 12 minutes to be in the cafeteria. When calculating the catering system, it is assumed that 60% of employees in the largest shift use the kitchen, 20% use the cafeteria, 10% use the dining room, and the remaining 10% are on vacation or absent for various reasons. When calculating the number of seats, it is assumed that a maximum of four seats can be occupied per shift. In some cases, a single break in an enterprise is considered a meal. In such cases, the number of seats is considered equal to the number of workers on the shift. Meals are organized in a self-service manner (Pic.2).



Pic.2. *Layout solutions for canteens:*

a - in industrial buildings with a frame structural scheme 12 m wide (canteen for 50 seats); b - in industrial buildings with transverse load-bearing walls with a span of 6.0 m (canteen for 75 running meters); 1 - dining room with a distribution area; 2 - hot shop = kitchen; 3, 4 - canteen and kitchenware washing areas; 5, 6 - bread slicing and cold shop; 7 - refrigerated chambers; 8 - storeroom and container washing area; 9, 10 - administrative and utility rooms; 11 - warehouse premises; 12 - loading.

CONCLUSION

Thus, it is required that the sanitary and household parts of the auxiliary buildings have all the necessary amenities, and that all sanitary and hygienic rules be established in them. In addition to the above requirements, all conditions related to the organization and provision of the production process for engineering, technical and auxiliary personnel must be created. Creating all conditions for full-fledged rest for workers and employees during breaks and after work in auxiliary buildings reduces their fatigue, preserves their health, and allows them to increase labor productivity.

References:

1. M.T. Abdujabbarova, Architectural design (Industrial buildings). Training manual, TAKI, Tashkent, 2020.
2. M.T.Abdujabbarova, Modern Formation of Sewing Enterprises in the Cities of Uzbekistan. Solid State Technology Volume: 63 Issue: 5 Publication Year: 2020. 6967-6972 page.
3. M.M. Vakhitov, H.A. Akrmov, Industrial buildings. Textbook. "Industrial buildings".Tashkent, 2006.
4. Marozova E.B, Typology of industrial buildings and structures. Textbook. Minsk, BNTU, 2014.
5. KMK 2.09.04-09, "Production of industrial buildings and structures.
6. A.P. Mikheev, Industrial buildings. Textbook. ASV Publishing House, Moscow, 2016.
7. M T. Abdujabbarova, Problems of Lighting in Modern Sewing Industries. AMERICAN Journal of Engineering, Mechanics and Architecture Volume 2, Issue 4, 2024 ISSN (E): 2993-2637
8. A.S. Ilyashev, Yu.S. Timyansky, Yu.N. Khromets, "Manual for the design of industrial buildings" Moscow, "Higher School" 1990.
9. M.T. Abdujabbarova, The sanitary and hygienic norms of the sanitary and hygienic work. "Construction of architectural structures and integration" RIAA. TAKHI - 2018, 64-66-b.
10. N.G. Samigova, "Hygiene and physiological foundations for optimizing working conditions for workers in the sewing industry of Uzbekistan" 14.00.02-Hygiene. dissertation. Tashkent, 2005.
11. G.B. Beznoshchenko, N.A. Malyshkina, Industrial and hygienic characteristics and working conditions of workers of the sewing association // Depository manual. - Omsk, 1989.