ANNA GELFOND

ARCHITECTURE OF PUBLIC BUILDINGS

ELECTRONIC TEXTBOOK

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Architecture of public buildings

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Reviewer:
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Director of the architectural bureau "Association of Theater Architects"

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The electronic textbook is based on An illustrated course in The discipline «Architecture of Public Buildings». It is intended for students of educational institutions of higher education studying in the field of training «Architecture».

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LECTURE 16. TRAIN STATIONS
LECTURE 17. BUILDINGS OF HOSPITALS
LECTURE 18. MULTIFUNCTIONAL BUILDINGS AND COMPLEXES. BUSINESS CENTERS. "END-TO-END" ARCHITECTURAL TYPOLOGY OF PUBLIC BUILDING
LECTURE 19. ARCHITECTURE OF TEMPORARY BUILDINGS
LECTURE 20. TECHNICAL AND ECONOMIC ASSESSMENT OF PROJECT SOLUTIONS OF PUBLIC BUILDING. TECHNICAL AND ECONOMICAL INDICATORS

The architecture of public buildings plays a responsible role in shaping the integral spatial environment of cities and settlements. New concepts of habitat organization and the development of new standards of life quality require study of buildings and territories interaction. We must create conditions for the formation of a harmonious aesthetically valuable architectural environment. The design of buildings and public spaces should focus on solving the problems now facing the world of architectural community:

- preserving historical and cultural traditions;
- consideration of natural and environmental factors;
- balance of local (regional) and universal (global) qualities when forming the architectural image of buildings or spaces;
- defining the development of new technologies;
- formation of socio-public and individual-personal architectural environment;
- creating an architectural environment that is accessible to people with low mobility.

When forming an integral architectural environment of cities and settlements, it is necessary to pay attention to the balanced architectural and compositional unity of all its components: functional saturation of territories; development of all types of communications – engineering, transport, pedestrian; improvement of the public service system; formation of current types of residential, public, religious, industrial buildings and structures; as well as protection and adaptation for modern use of cultural heritage objects. Based on a system of criteria (social; urban planning; architectural and typological; environmental) assessment of the existing structures of the public service system should be made, the degree of their suitability for modern use should be made. When developing a strategy for the effective development of the network of service facilities, it is necessary to provide for:

- multifunctionality and multidisciplinary use;
- modularity and mobility, the use of fast built objects of the service system;
- creating a barrier-free environment and universal design for people with low mobility;
- architectural and compositional unity, balance of the public service system.

LECTURE 1

GROUPS OF PUBLIC BUILDINGS. THE MAIN FACTORS THAT FORM THE TYPOLOGICAL FEATURES OF PUBLIC BUILDINGS

List of the main functional and typological groups of public buildings:

A. Buildings for public service facilities:

1. Buildings for educational goals.
2. Social services and Hospital Buildings.
3. Public service buildings.
4. Buildings for cultural and leisure activities.
5. Buildings for temporary stay.

B. Buildings of public and State service facilities:

1. Administrative buildings.
2. Special management buildings.

BUILDINGS FOR EDUCATIONAL GOALS:

1.1 Educational institutions:
- pre-schools;
- general education institutions (schools, gymnasiums, lyceums, colleges, boarding schools, etc.);
- institutions of professional education: primary, secondary, university.

1.2 Extracurricular institutions for schoolchildren and young people.

1.3 Special institutions: clubs, driving schools, additional schools, etc.

PRE-SCHOOLS

SCHOOLS

UNIVERSITY

SOCIAL SERVICES AND HOSPITAL BUILDINGS :

2.1. Healthcare institutions —

- medical institutions with a hospital, medical centers, etc.—
- clinics;
- pharmacies, dairy kitchens;
- Asylums;
- ambulance station;
- sanatorium-and-Spa institutions.


ЛУКОЙЛ

PUBLIC SERVICE BUILDINGS:

3.1. Shopping malls and entertainment complexes.
3.2. Catering enterprises indoor and street cafes.
3.3. Non-industrial objects of household and communal services of the population:
- enterprises of household services of the population;
- institutions of public services for direct service for population;
- courts.

3.4. Communication facilities for direct service for population.
3.5. Transport institutions for direct service for population:
- buildings of railway stations of all types of transport;
- passenger service institutions, transport and travel agencies.

3.6. Structures, buildings for sanitary goals.

BUILDINGS OF SHOPS AND SHOPPING CENTERS


СЫЛЬКО

BUILDING THE ENTERPRISES OF THE FOOD

STATION BUILDINGS


САНКТ-ПЕТЕРБУРГ

BUILDINGS FOR CULTURAL AND LEISURE ACTIVITIES

4.1. Objects of sports and physical culture.

4.2. Buildings and premises for cultural and educational purposes:

- libraries and reading rooms;
- museums and exhibitions.

4.3. Entertainment and leisure facilities:

- entertainment facilities-theaters, cinemas, concert halls, circuses;
- club and leisure and entertainment facilities.

SPORTS FACILITIES


КАРАВАН
ВЕНГРИЯ
31 АВГУСТА
19:00
БАСКЕТ-ХОЛЛ
Rezidenz Plaza
Сеть салонов элитной мебели
DOMO
38-38-38
Баскет-холл
КАССЫ

MUSEUM AND EXHIBITION BUILDINGS


ПАВИЛЬОН N 71

THE BUILDING OF THEATERS


ЦИРК
ЛЕГЕНДАРНЫЙ
ЦИРК ЗВЕРЕЙ ФИЛАТОВА


ВИТАС


НАСТОЯЩИЙ СИТАЛЛОВЫЙ ДОМИК · ПАРАД ЧУДЕС
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BUILDINGS AND PREMISES FOR TEMPORARY STAY:

5.1. Hotels, motels, apartment hotels.

5.2. Recreation and tourism institutions — boarding houses, tourist bases, year-round and summer camps, including for children and young people, etc.

5.3. Dormitories of educational institutions and dormitories of boarding schools.

HOTELS


MARINA AMBASSADOR TOWER

OF ADMINISTRATIVE BUILDINGS:

1.1. The establishment of management bodies.

1.2. Administrative institutions, offices, firms, agencies

SPECIALIZED MANAGEMENT BUILDINGS:

2.1. Credit and financial and insurance organizations, banks

2.2. Courts and prosecutor's offices, notarial and legal institutions.

2.3. Law enforcement organizations: tax services, police, customs.

2.4. Institutions of social protection of the population: labor exchanges.

BUILDINGS OF ORGANIZATIONS THAT PRODUCE PRODUCTS:

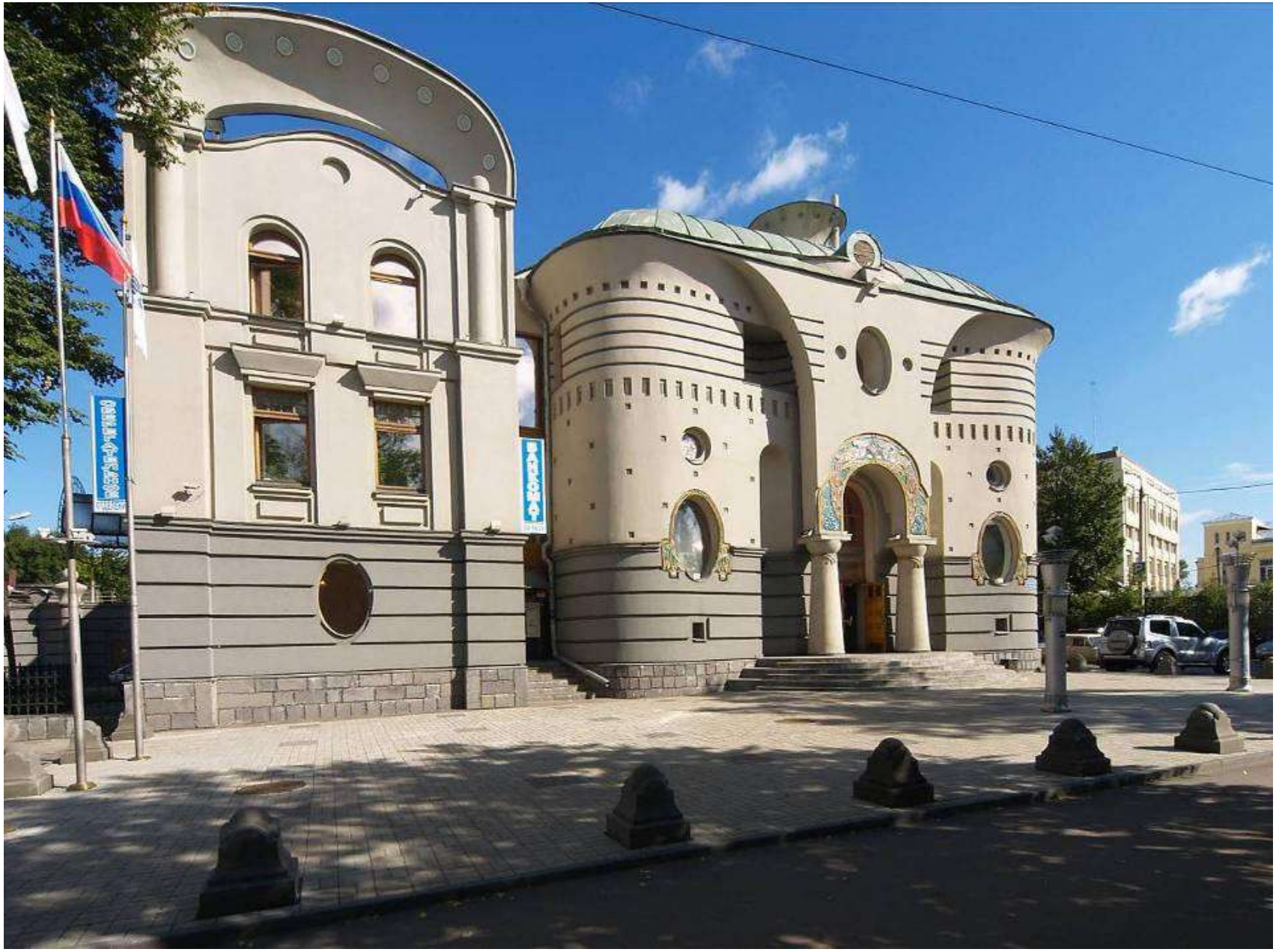
3.1. Research organizations, with the exceptionof large and special facilities.

3.2. Design and engineering of the organization.

3.3. Editorial and publishing and information organizations, with the exception of printing houses.

These types of buildings, institutions and premises are not alwaysfound as an independent architectural object, they are oftenpart of multifunctional complexes.

BANK BUILDINGS AND COMPLEXES

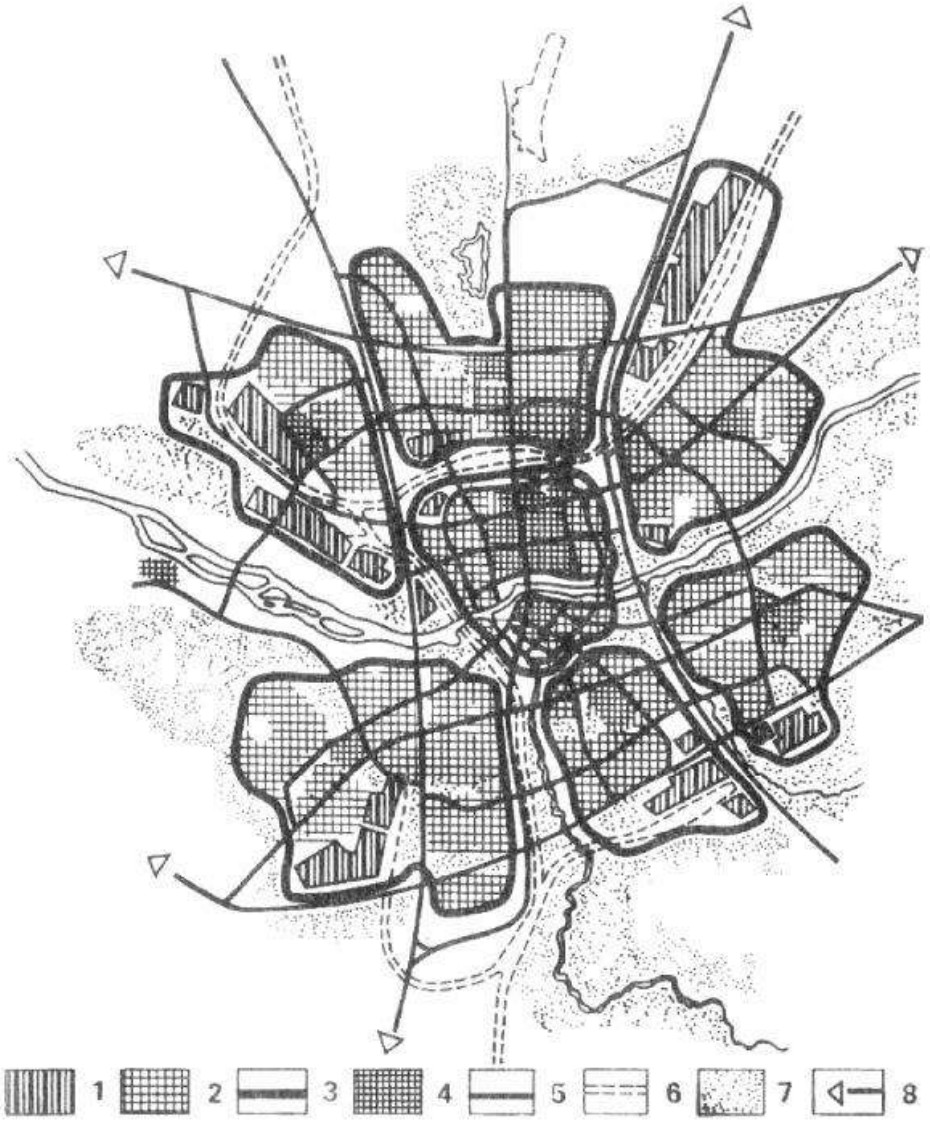


PARKING

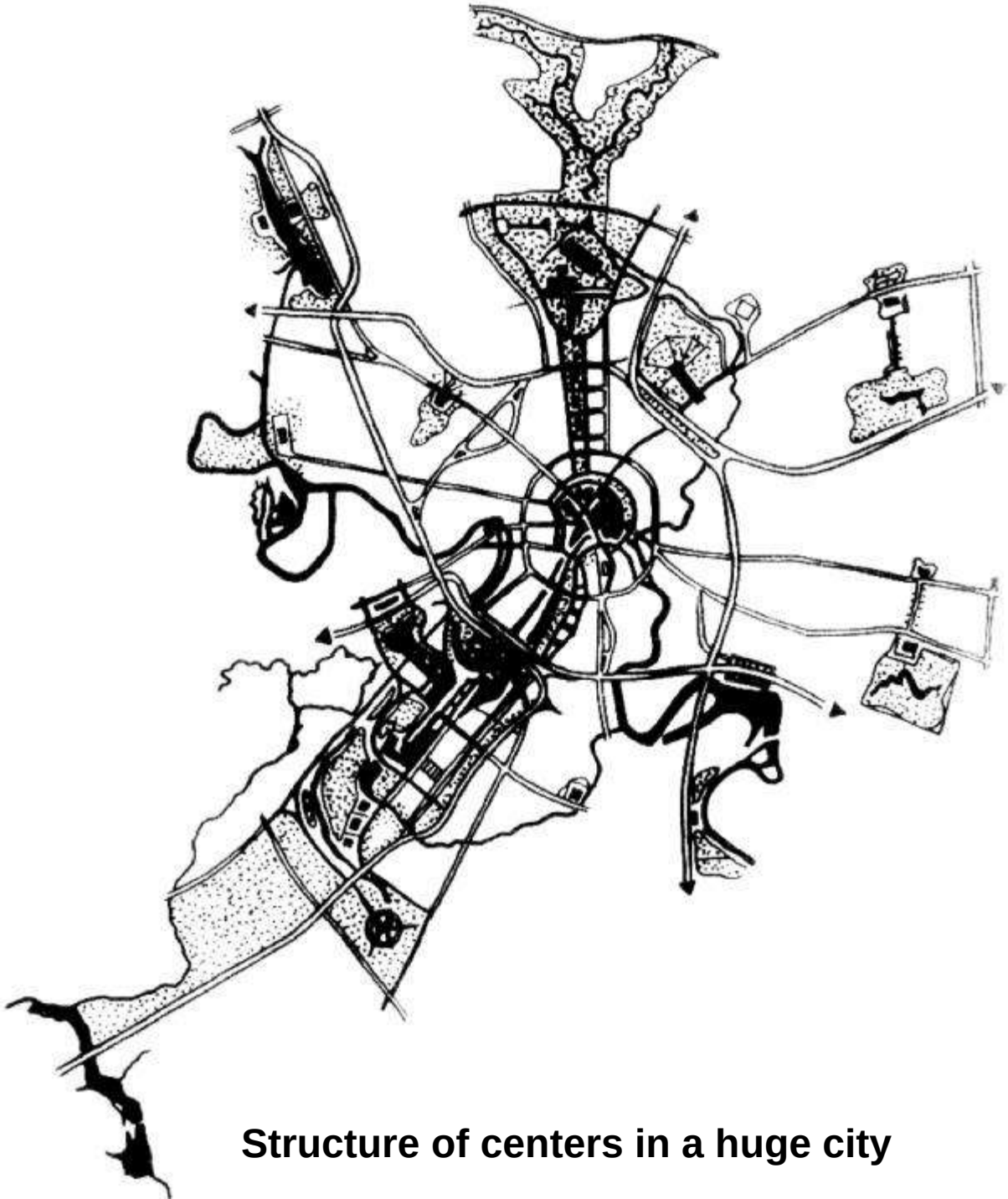

АВТОСЕРВИС

BUSINESS CENTER

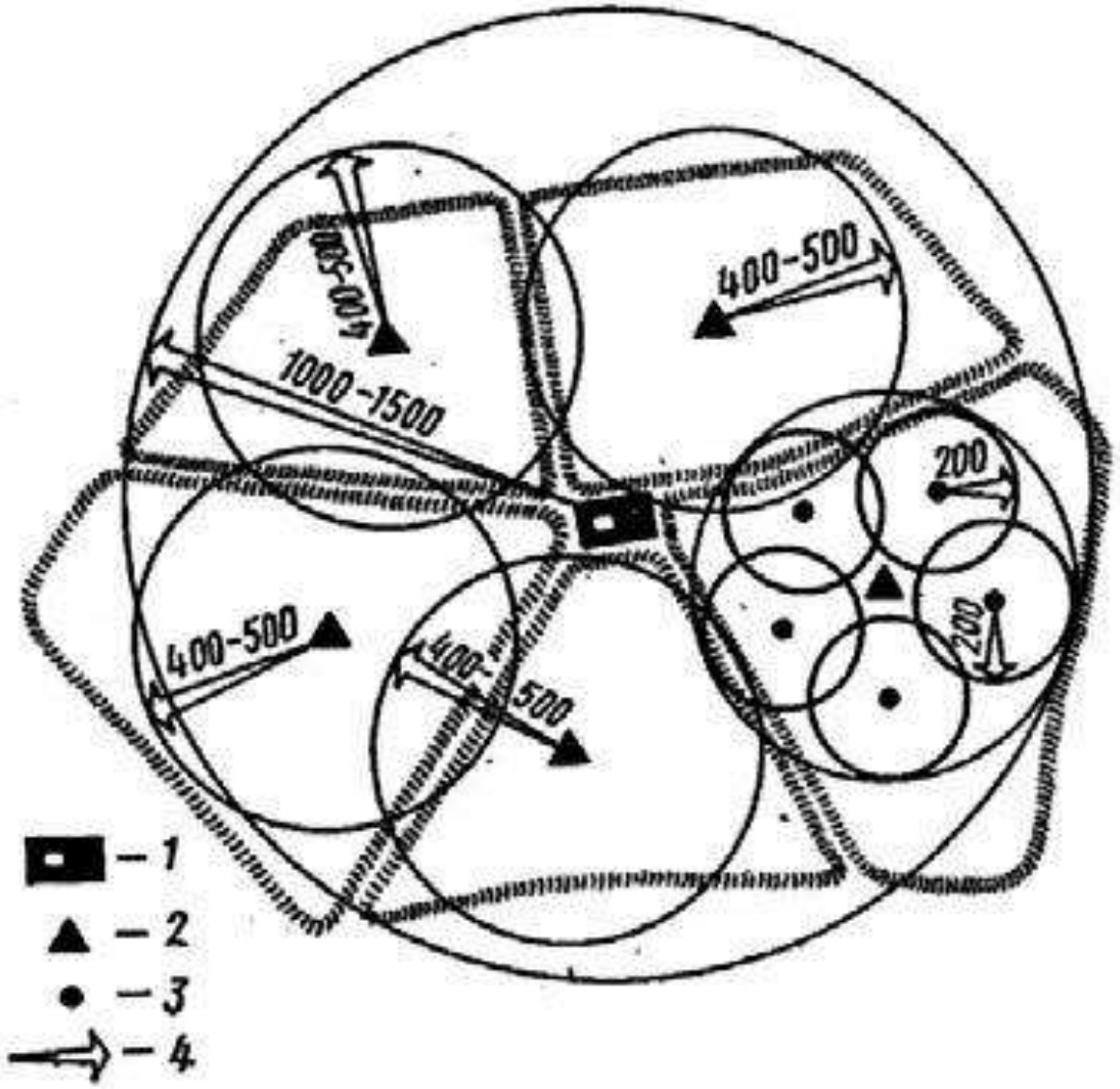
MULTIFUNCTIONAL BUILDINGS AND COMPLEXES



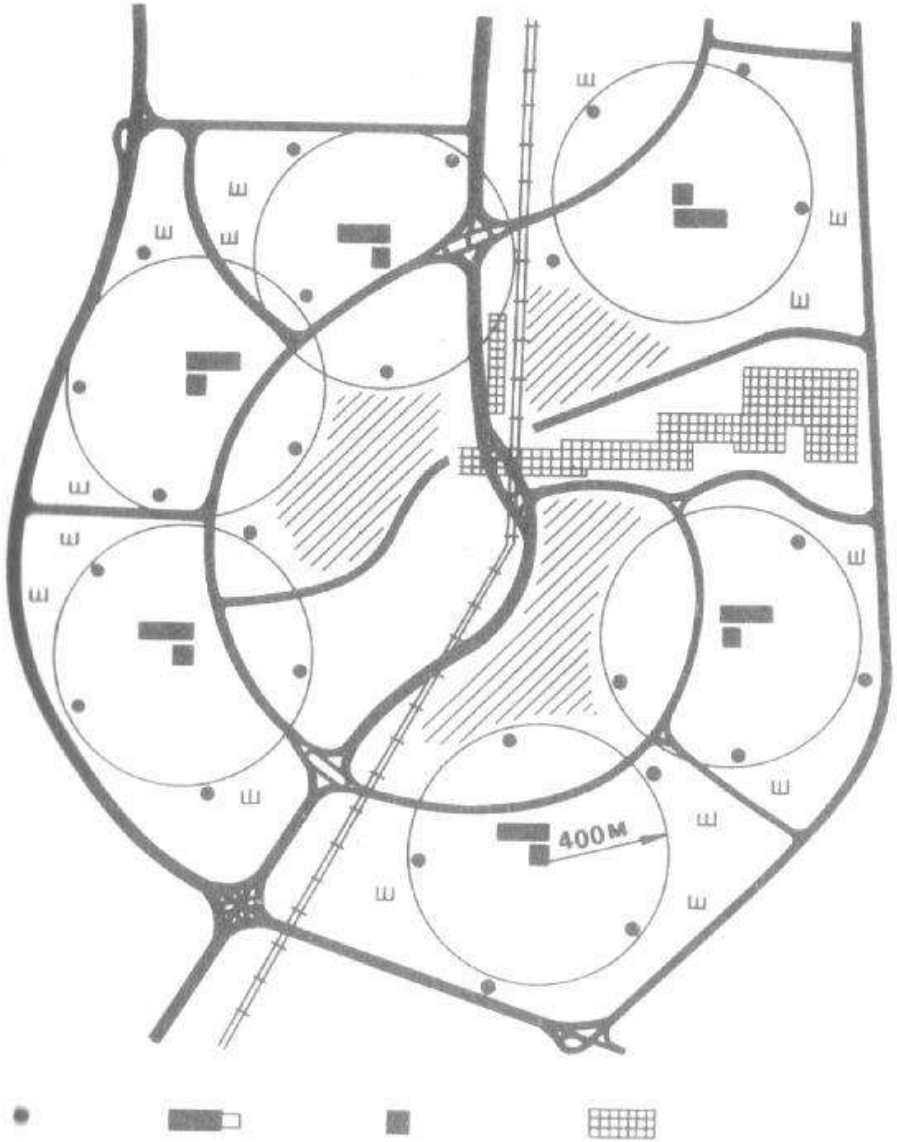
Functional-planning organization of a huge city:
1 — industrial areas; 2 — residential areas; 3 — boundaries of the planning areas; 4 — areas community centers; 5 — roads; 6 — territory of external transport; 7 — green plantings and open spaces; 8 — main directions of communication with the cities of group systems populated areas



Structure of centers in a huge city

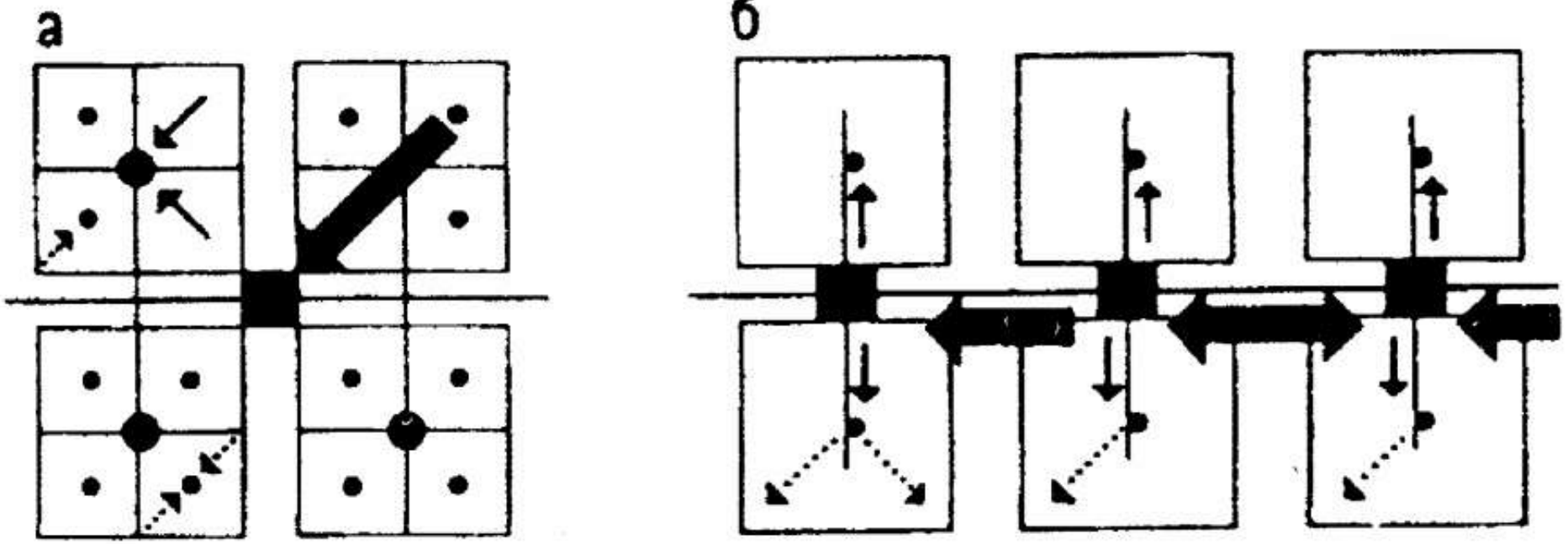


The scheme is a stepped servicing residential district:
1 — residential area — periodic service; 2 — center for micro-district (quarter) — daily service; 3 — heart of residential kindergartens; 4 — the radius of service



Scheme of a residential area with a step-by-step system of cultural and consumer services:

1 — primary service unit; 2 - district center of the district - daily service;
3 - residential area center-periodic service; 4 - citywide center - occasional service



Service system diagrams:
a -step; b-communicative

MY TEXT BOOKS

ГЕЛЬФОНД А.Л.
АРХИТЕКТУРНАЯ ТИПОЛОГИЯ
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/ Н. НОВГОРОД: ННГАСУ, 2003. - 201 С. : ил.

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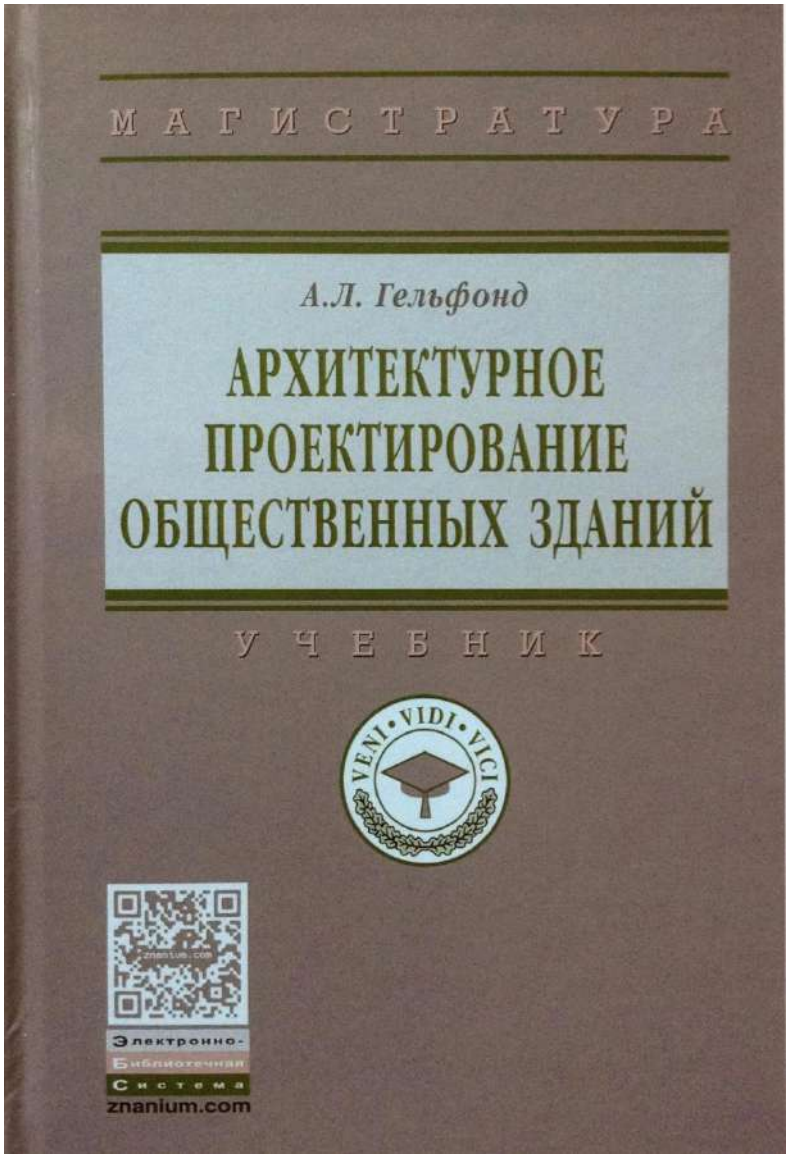
М.: «АРХИТЕКТУРА-С», 2006. - 280 С. : ил.

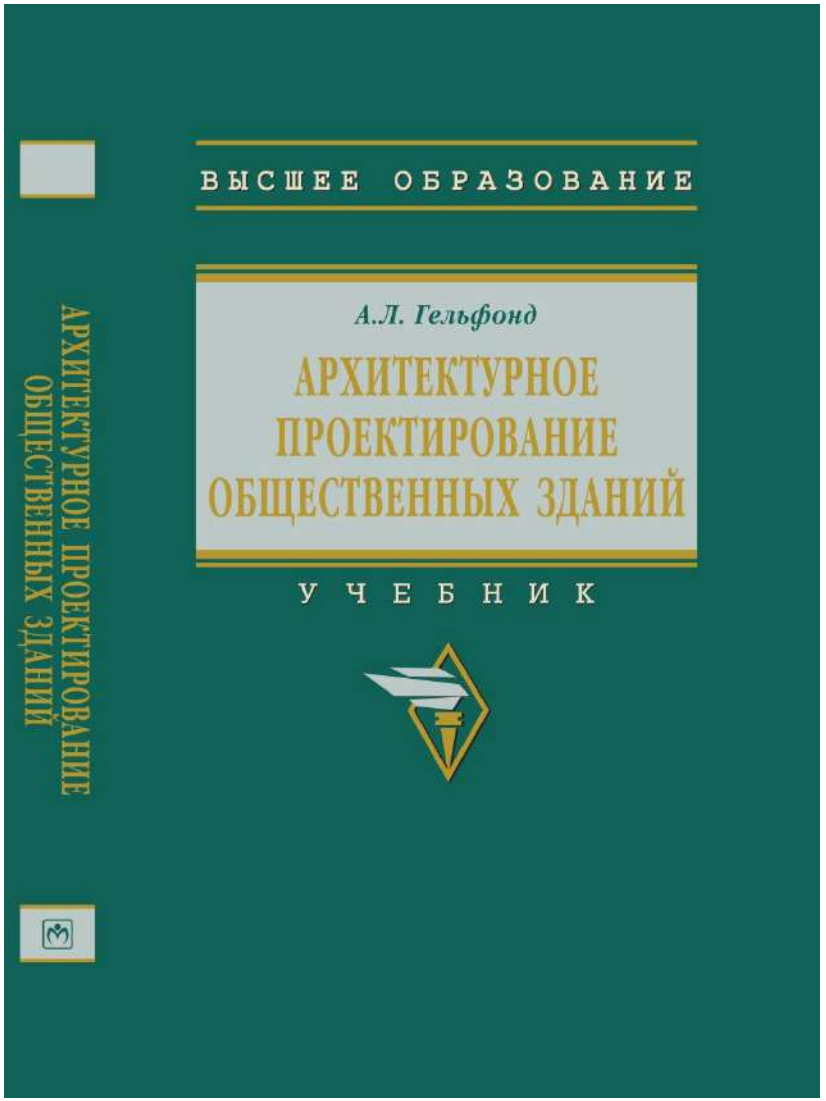


ГЕЛЬФОНД А.Л.
АРХИТЕКТУРНОЕ ПРОЕКТИРОВАНИЕ ОБЩЕСТВЕННЫХ ЗДАНИЙ: УЧЕБНИК. / М.: «ИНФРА-М», 2016. – 368 С. : ил.

А.Л. ГЕЛЬФОНД
АРХИТЕКТУРА ОБЩЕСТВЕННЫХ ЗДАНИЙ

ЭЛЕКТРОННЫЙ УЧЕБНИК

НИЖНИЙ НОВГОРОД, 2022



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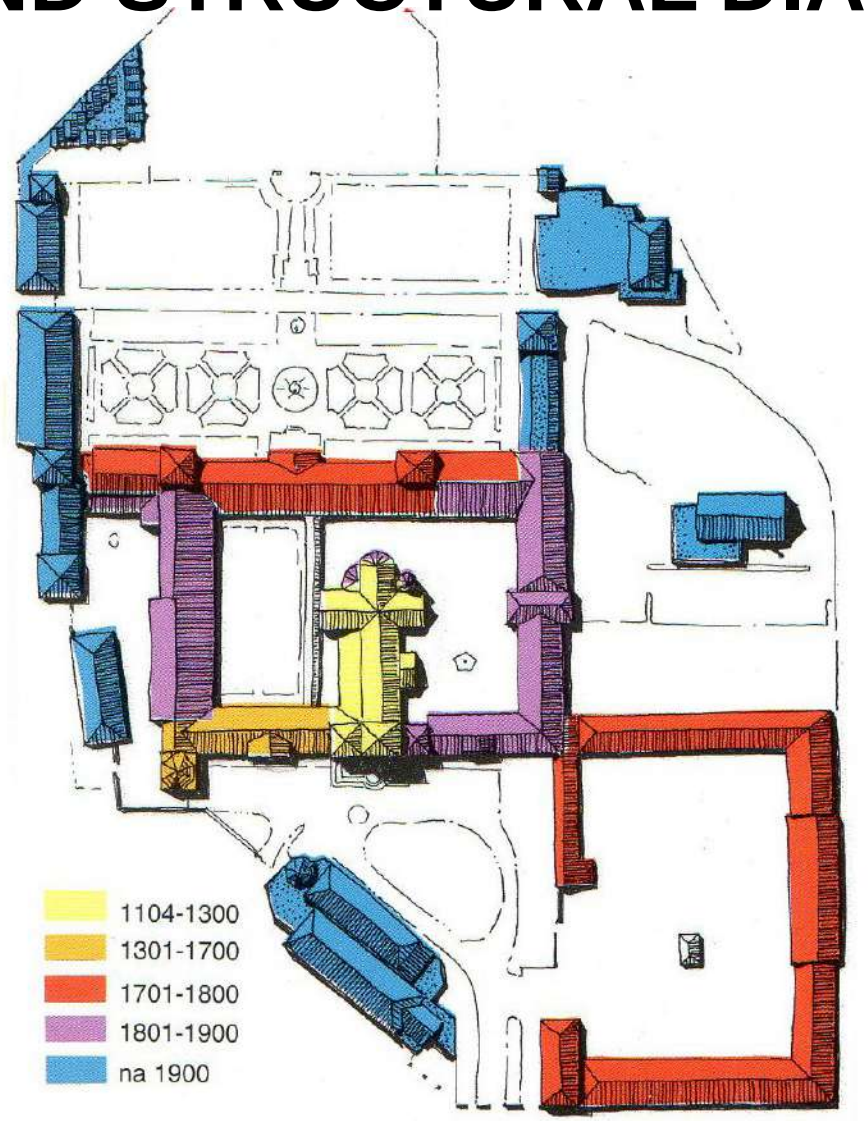
АРХИТЕКТУРНОЕ ПРОЕКТИРОВАНИЕ ОБЩЕСТВЕННЫХ ЗДАНИЙ: УЧЕБНИК. / М.: «ИНФРА-М», 2023. – 373 С. : ил.

LECTURE 2.

FUNCTIONAL, VOLUME-PLANNING, COMPOSITE AND STRUCTURAL DIAGRAMS OF BUILDINGS



TYPOLOGICAL COMPONENTS OF THE BUILDINGS AND STRUCTURES: FUNCTION, CONSTRUCTION, FORM

Let us dwell on a number of definitions that gave the concepts of **"function"**, **"construction" and "form"** to theorists of architecture.

Academician A.V. Ikonnikov defined the **function** and **form** of an architectural object as follows: "A function is the entire complex of versatile problems solved by architecture, materially practical and informational"; "the form of an architectural object expresses the way it is organized and the way it exists in the contexts of the environment and culture." And then he expanded the concept of architectural form: "**Three tactics** for translating technology into an object form can be revealed. In the **first** case, the nature of the production process is among the sources of its design. **The second** concept of a mold is based on the figurative expression of an ideal technology embodied by some other means. **The third** concept is to exclude traces of the process from the figurative language of architecture. It goes back to the principle of universality of the form bearing meaning, regardless of the aims of the object, its material and the method of implementation “.

Functionalism theorists believed that a function can single-handedly influence the structural and artistic features of a form. So, A. A. Vesnin wrote: "To allow an architectural **function** is to build a building not only without compromising its functional content, but also using it as an important basis for architectural composition”.

"**The plan**, its system - that's what defines the whole," L.M. Lisitsky assessed the role of the planning structure in the formation of the architecture of the building.

Practice proves that viable architectural object is only when the forms result from the content of the structure, but do not flow out mechanistically, but dialectically, i.e. at the same time forming this content. Interaction of function, architectural form and construction is mutual; architectural form follows the function and conditions of its existence. The influence of the architectural form on the process taking place in, is observed quite often. Examples are numerous objects reconstructed for other public functions.

Academician I. G. Lezhava outlined in theoretical works,

that in architectural form the space is inextricably connected

venous, figurative and functional beginning and that "any form has a certain functional potential that extends the spectrum of its aim." "Adaptive capabilities are probably one of the basis on which the interaction of architectural form and function develops.

Functional potential is the range of potential capabilities of an architectural object when a function changes.

Among its main components, one can reveal a group of "actual functions," that is, functions associated with recipient’s valuable characteristics of the form of the object. Current functions include a group of "parent functions" that define the primary aim of an object. "Generating functions" contribute to the appearance of "generated," or "working functions," that is, functions in which part of the properties that are concentrated in an architectural object after its construction. Work functions are divided into dominant and related functions (allocated at each time the object exists).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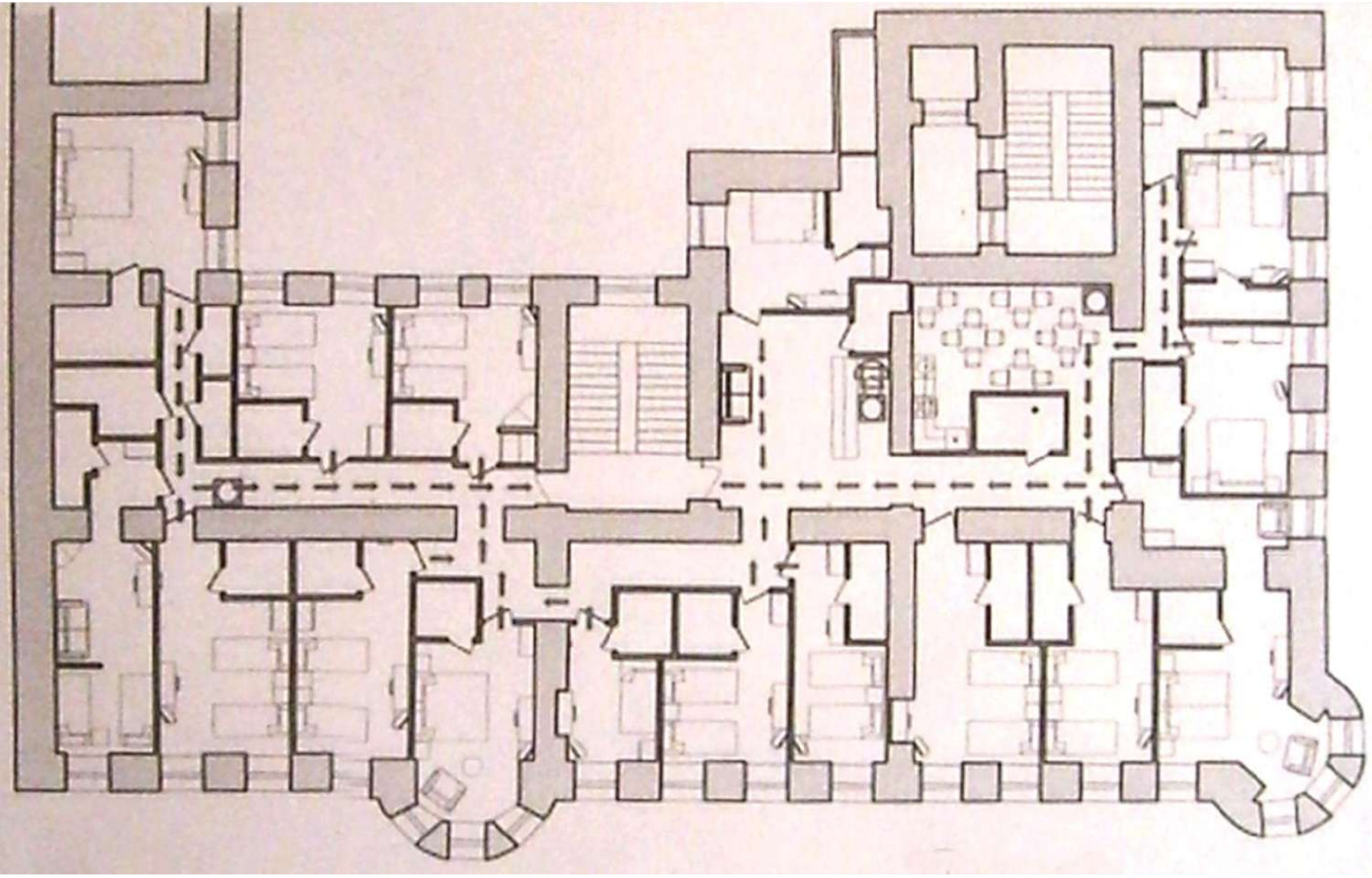
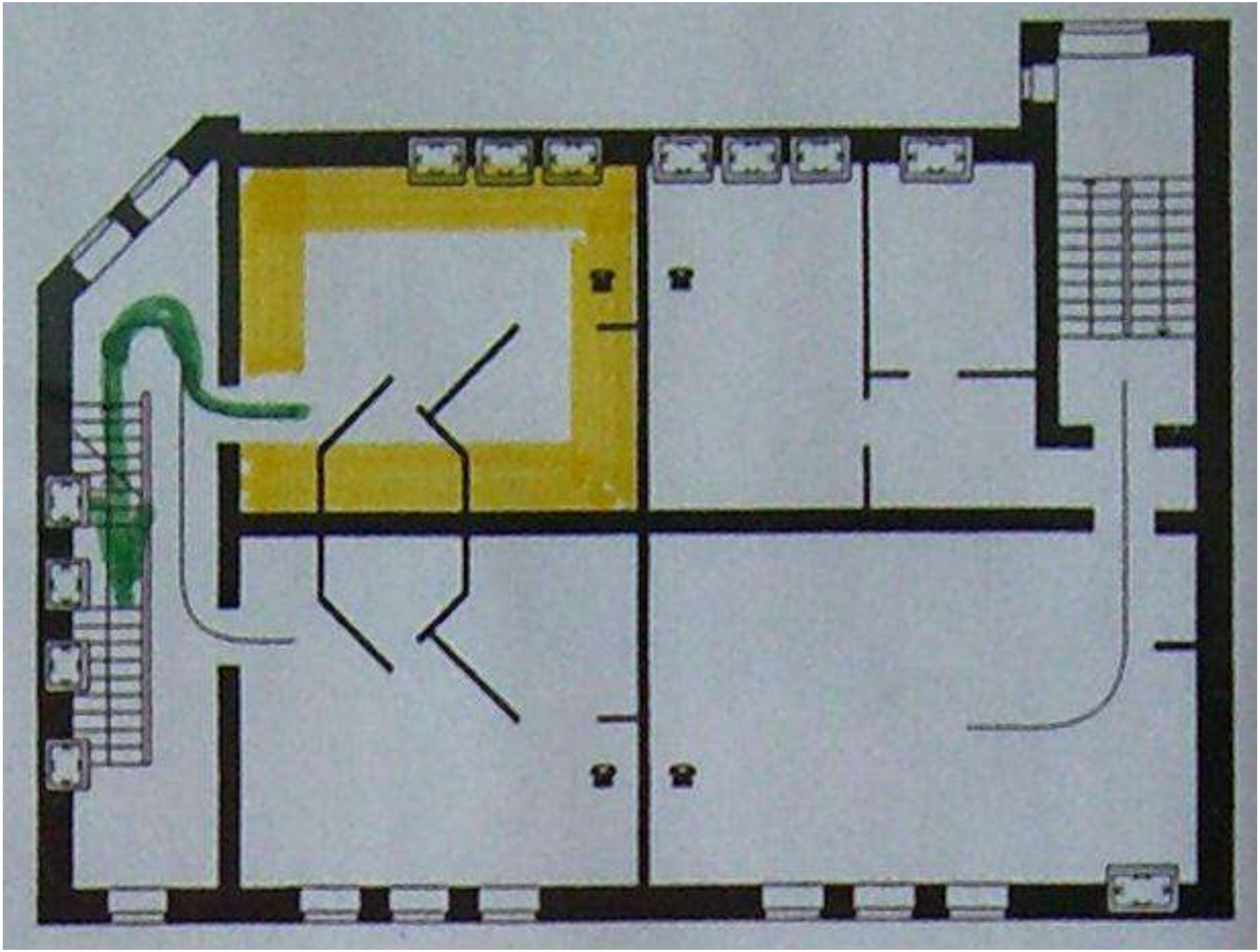





TATE MODERN COLLECTION
HUYGHE
KANDINSKY
WWW.TATE.ORG.UK

The basis of architectural interpretations is a wide range of phenomena related to the nuances of the interaction of form and function. N. A. Ladovsky designated creative credo in 1919-1921: "The design is part of architecture as it defines the concept of space", "the technical design is the connection of designed material elements according to a certain plan - a scheme to achieve power effect."

M. Ya. Ginzburg spoke of the construction as an "aesthetic system": "The constructive system, thanks to our perceptive experience and psycho-physiological features of a person, gives rise to another system that self-introduces and at the same time flows and depends on the construction of the world of form, or, correctly speaking, the aesthetic system".

Based on the above, we conclude that the building, as a whole, must consist of different quality systems with different dominants, by which we understand function, structure and form. When creating an architectural object the architect's task is to link these components into a single holistic system.

SPACE-PLANNING STRUCTURE OF BUILDING.

FUNCTIONAL ZONING

The space-planning structure of the building is a system of combining the main and auxiliary rooms of selected sizes and forms into a single integral composition.

The composition structure is a system of bonds that combine individual elements of the composition into a single whole. As noted above, all functions of a public building can be divided into "dominant" and "related" . All functional processes in a public building, regardless of its dominant function, can be divide into general, specific and auxiliary.

Functional zoning is breakdown of the structure into zones

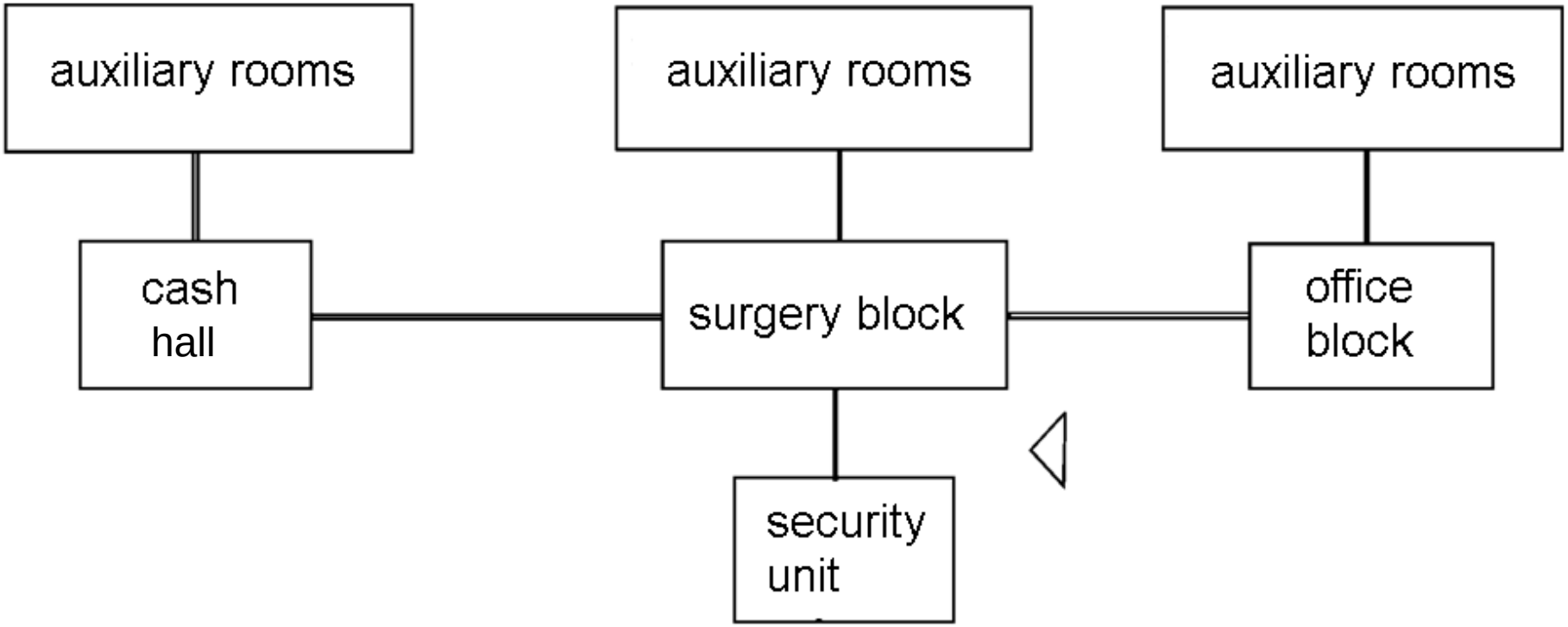
from homogeneous groups of rooms based on commonality of their function.

Functional blocks are common in function groups.

The following types of functional zoning are distinguished: **horizontal, vertical, horizontal-vertical.**

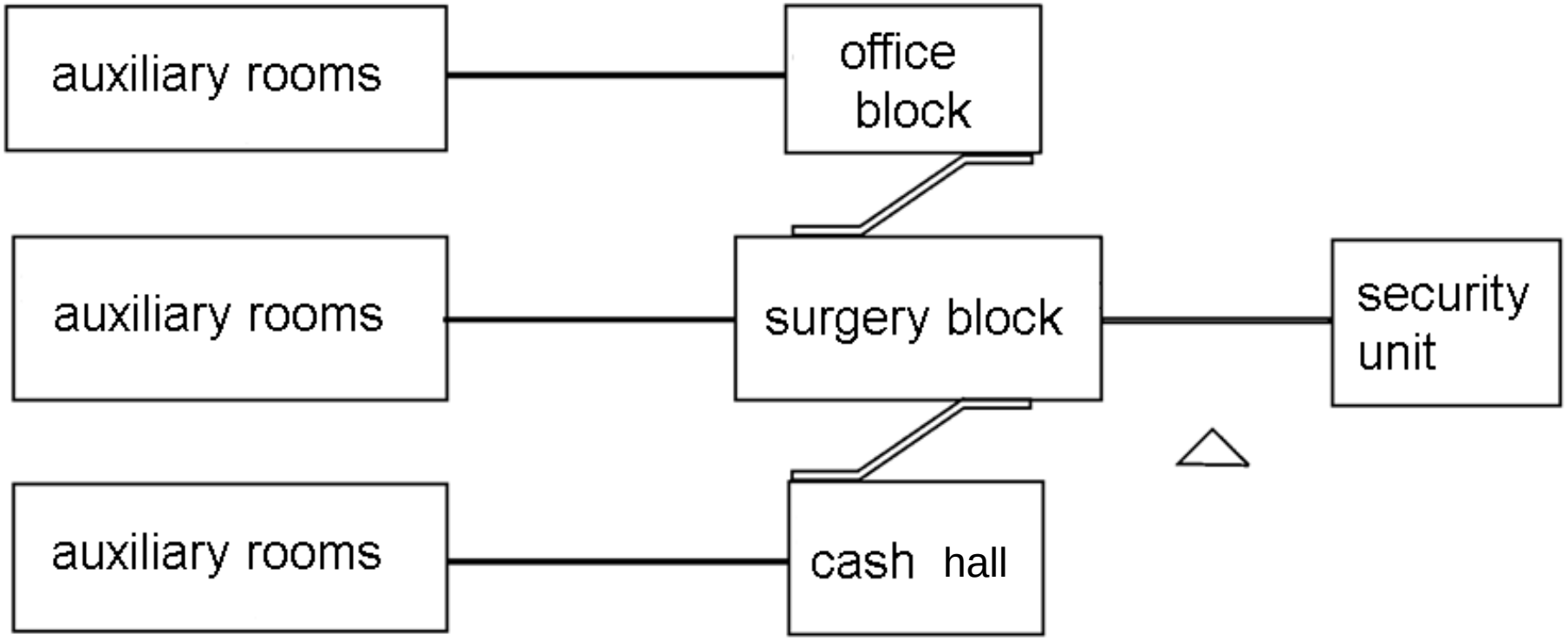
The main task of functional zoning is to identify the relationships between rooms (or groups of rooms) when maintaining their clear distinction.

HORIZONTAL FUNCTIONAL ZONING



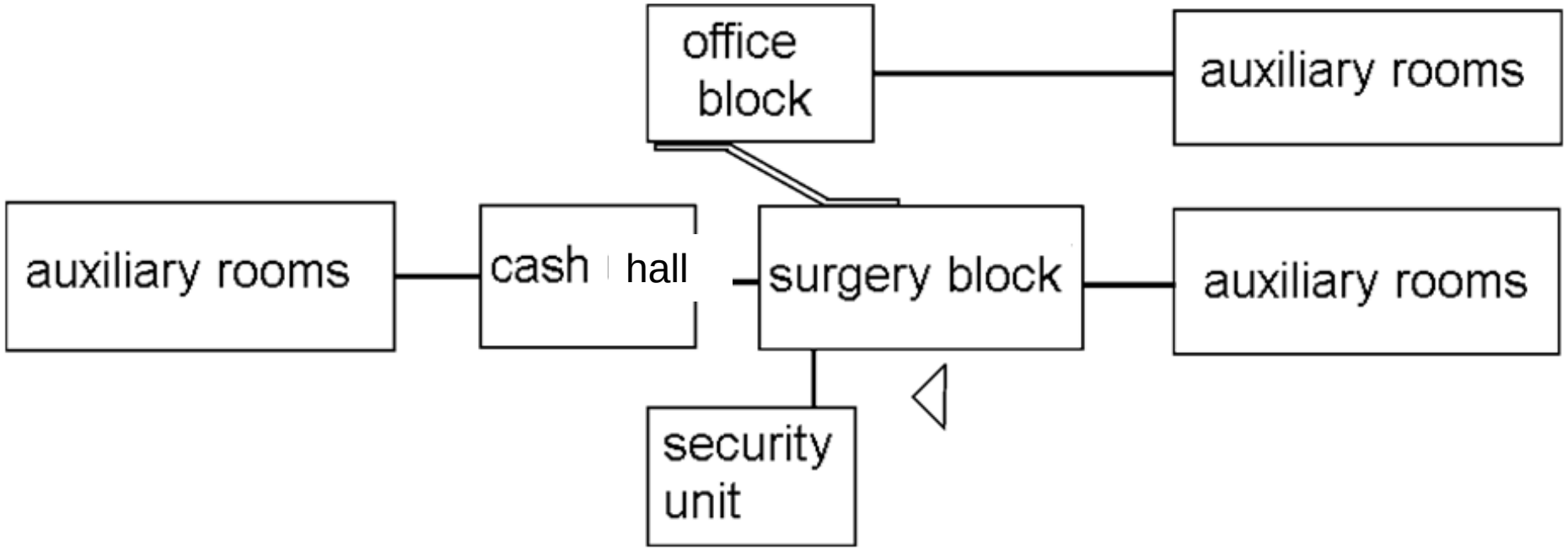
Horizontal functional zoning - all functional units are located in the same level and connected by horizontal communications

VERTICAL FUNCTIONAL ZONING



Vertical functional zoning - all functional units are located in different levels and connected by vertical communications

HORIZONTAL-VERTICAL FUNCTIONAL ZONING



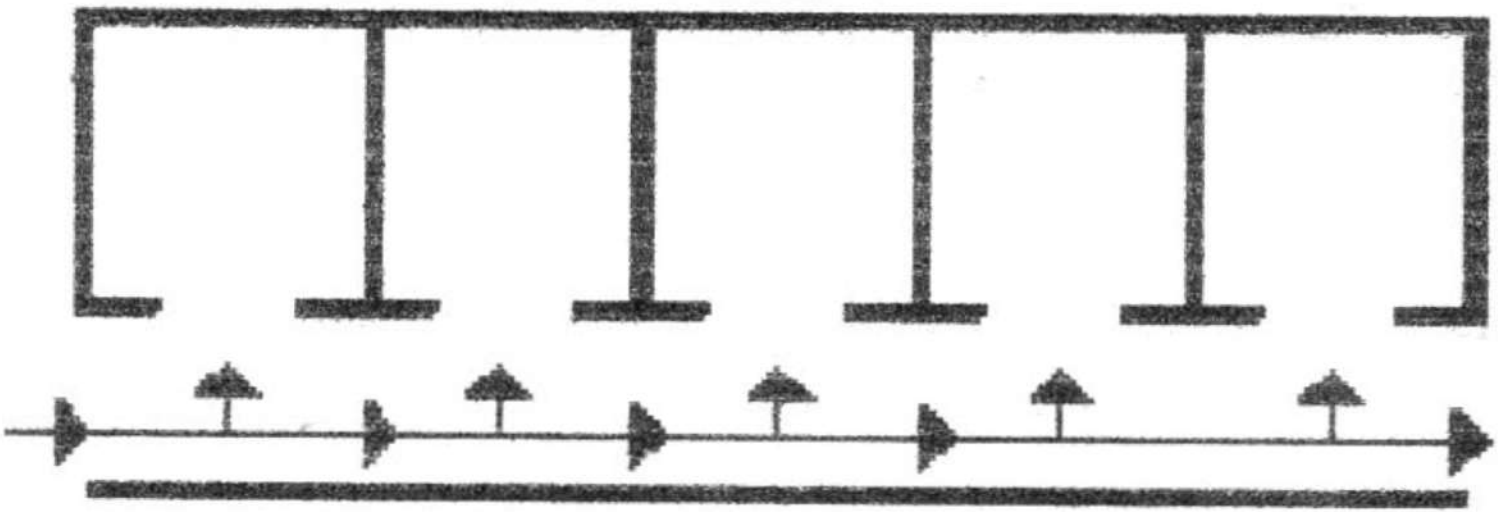
Horizontal-vertical functional zoning is based on the combination of the above two types and is in practice the most common.

COMPOSITE DIAGRAMS OF BUILDINGS. ROOM GROUPING DIAGRAMS

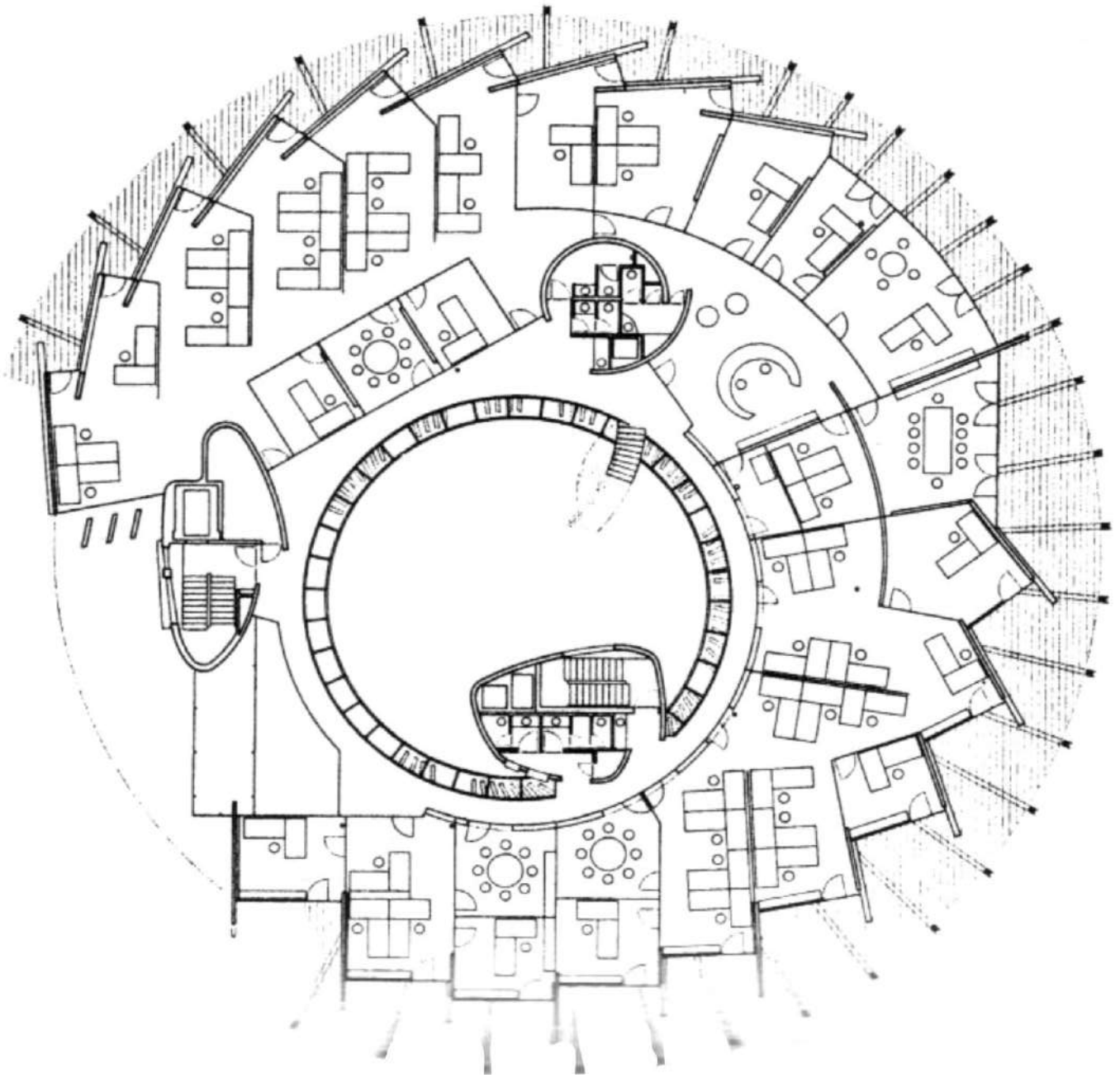
We must distinguish between the following basic space grouping schemes that determine the organization internal space of the public building:

- cell;
- corridor;
- anfilade;
- hall;
- atrium;
- pavilion;
- mixed (combined).

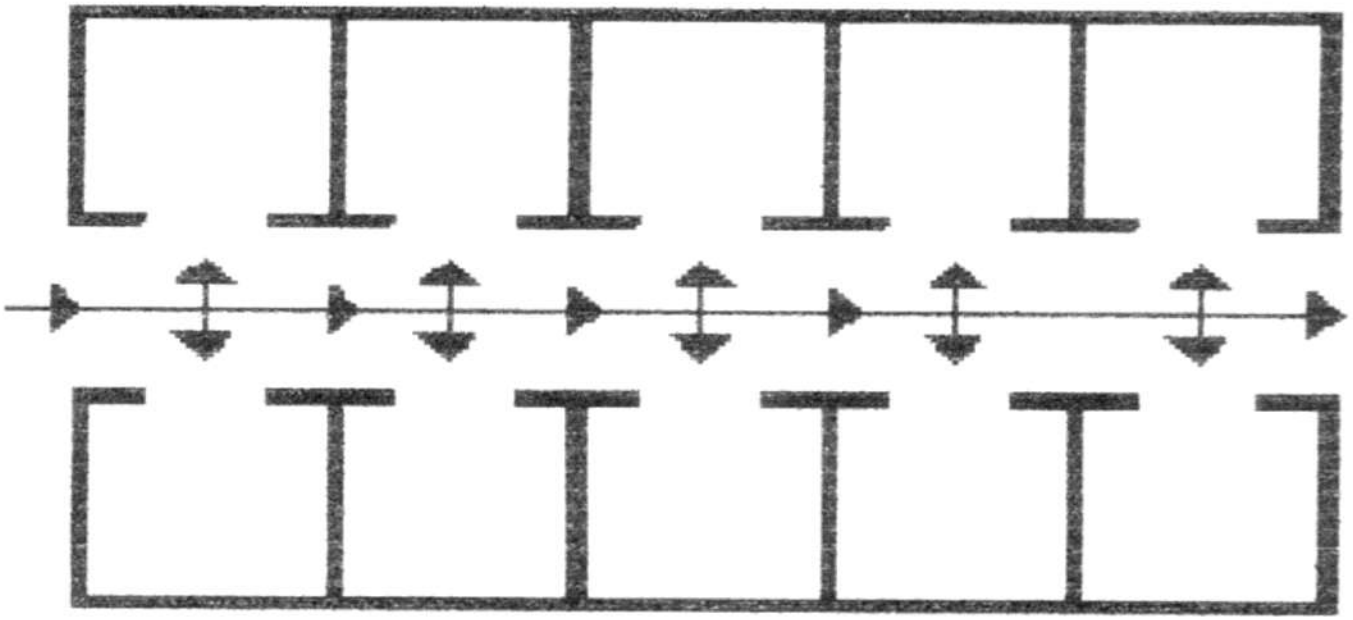
CELL DIAGRAM OF SPACE GROUPING



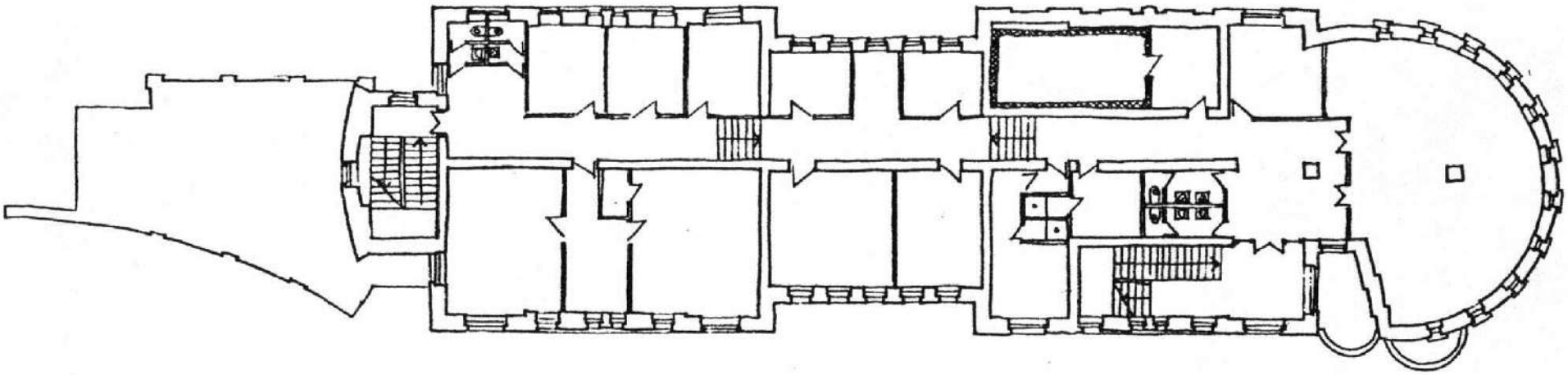
The cell diagram of space grouping consists of parts, in which functional processes take place separately in independently functioning spatial cells, having a common communication connecting them with the external environment.



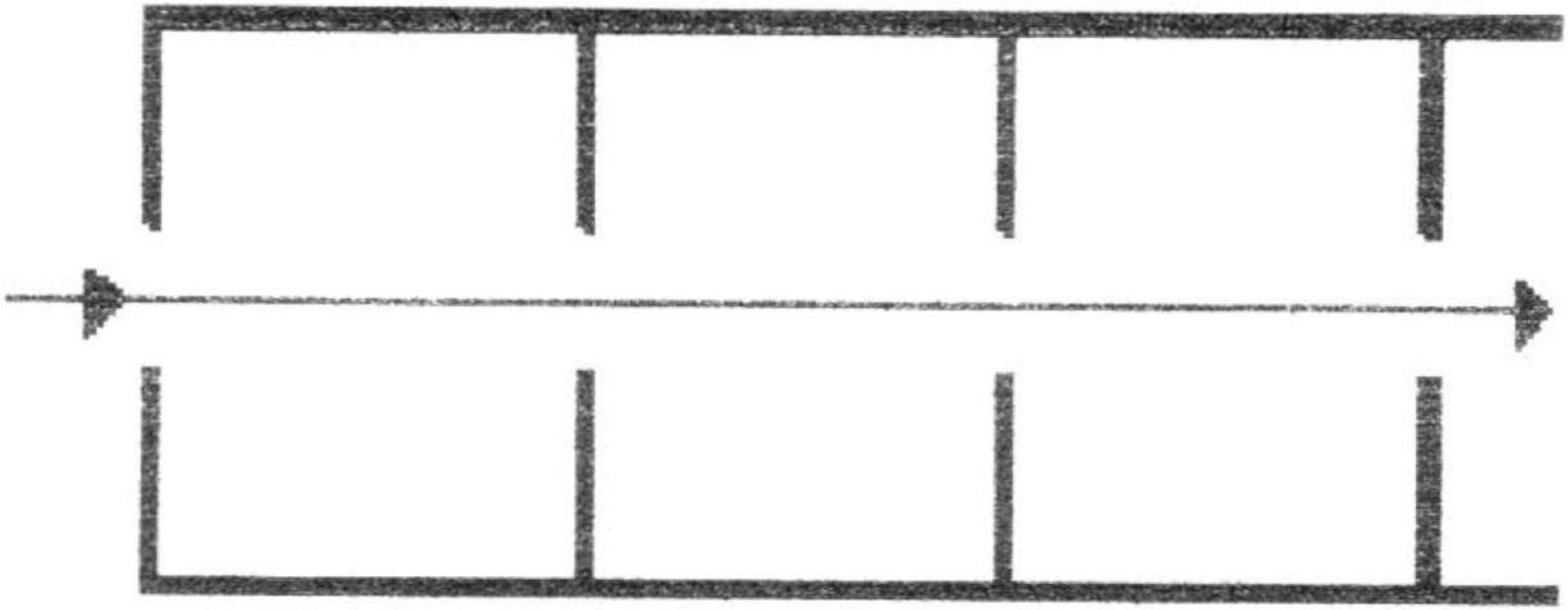
ROOM GROUPING CORRIDOR DIAGRAM



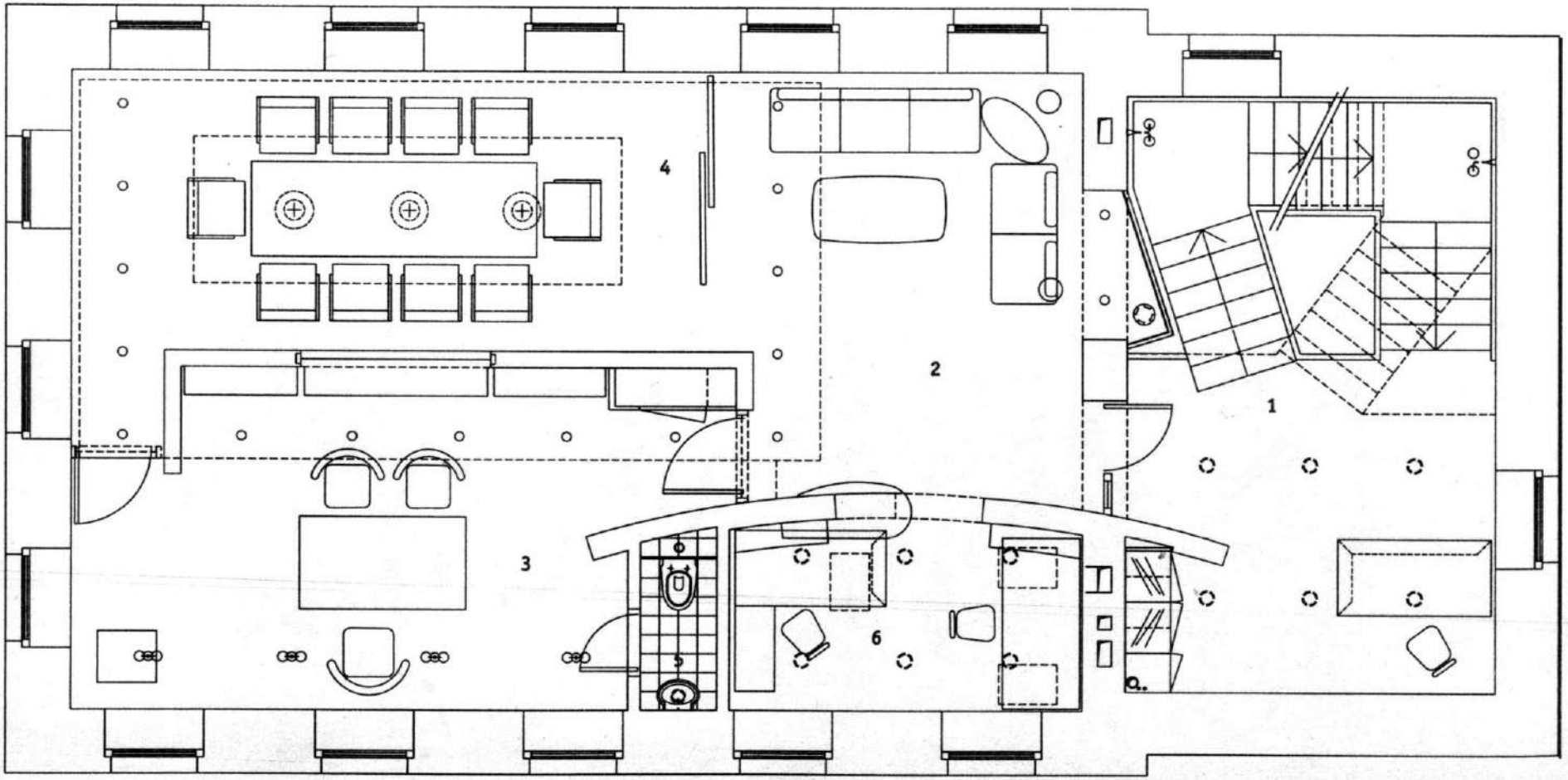
Corridor diagram of space grouping consists of large cells containing parts of a single functional process and connected by common linear communication - corridor.



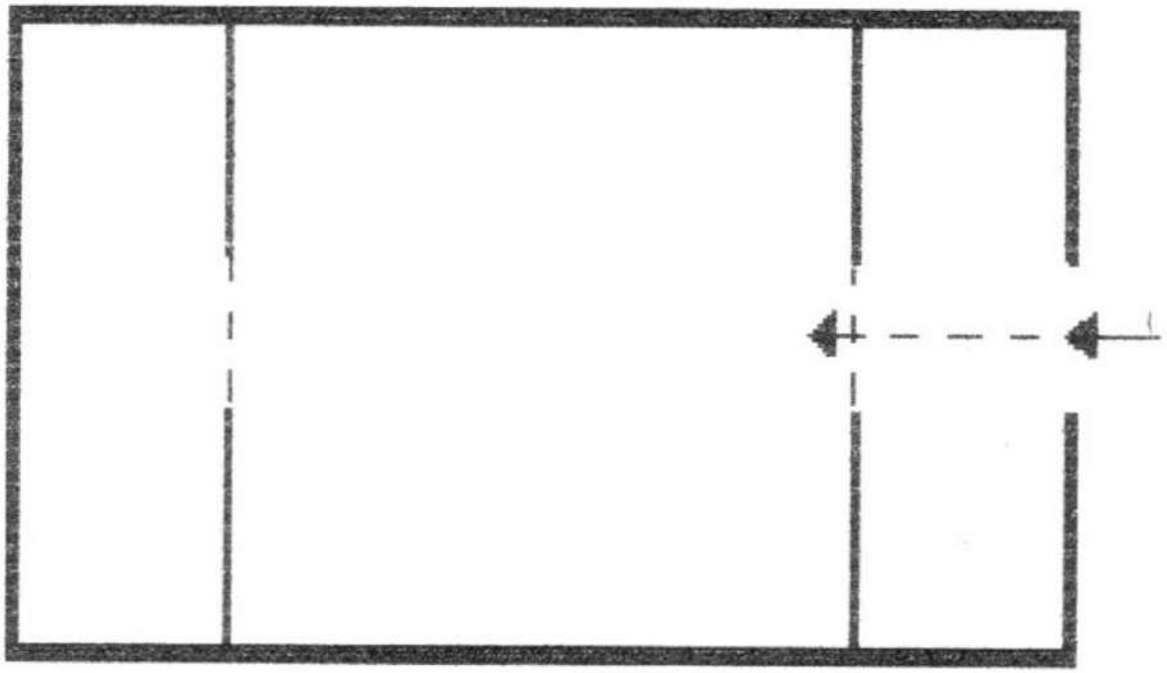
ANFILADE DIAGRAM OF ROOM GROUPING



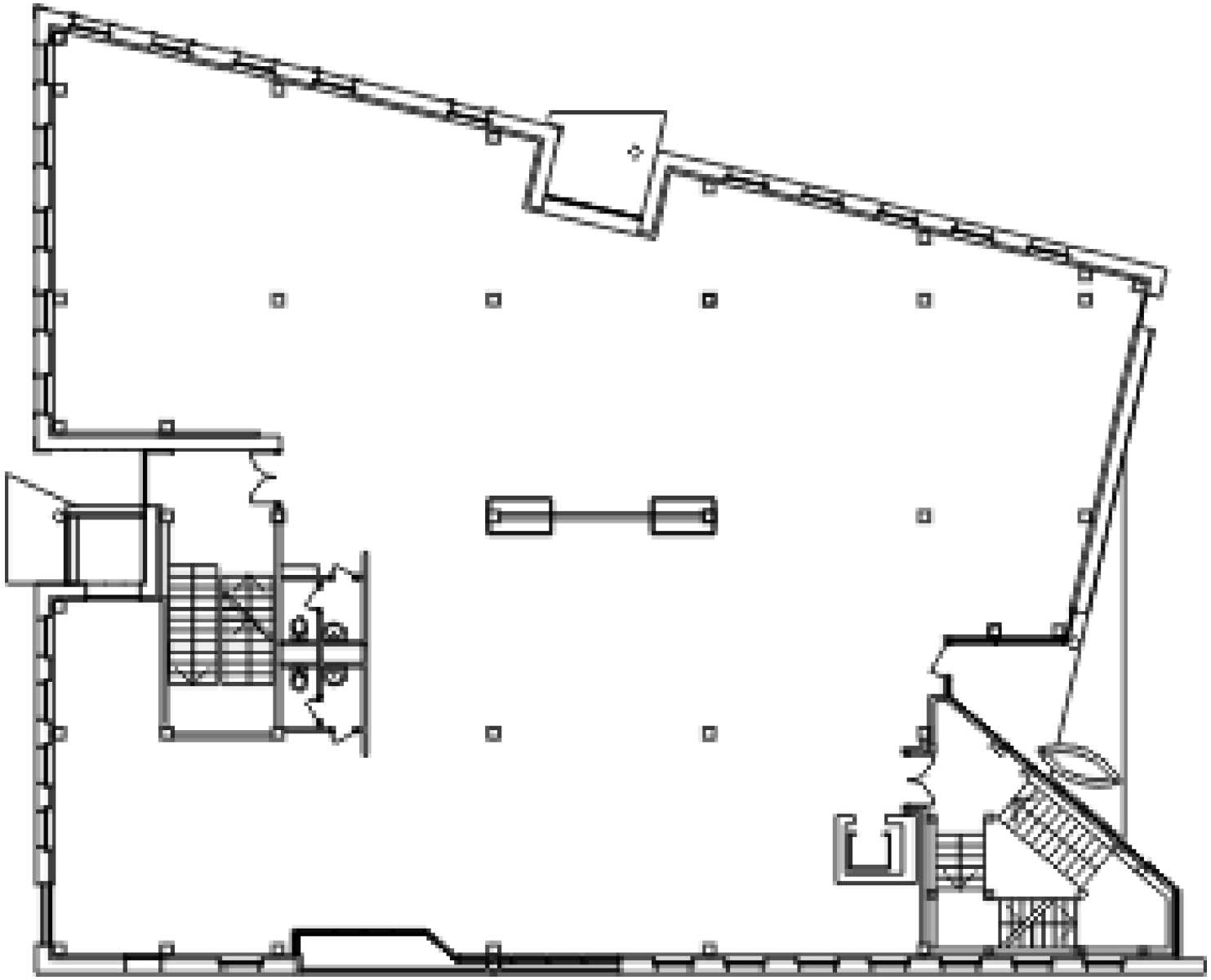
The anfilade diagram of the grouping of rooms is a series of rooms located one after another and interconnected by a through passage.


4
2
1
3
5
6

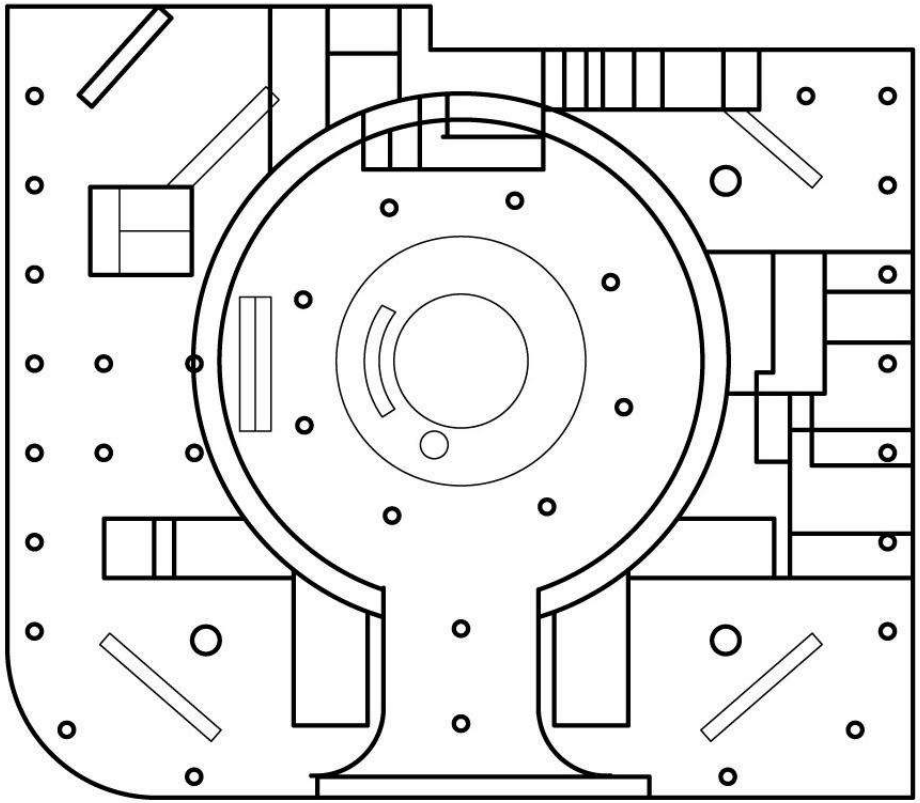
ROOM GROUPING HALL DIAGRAM



The hall space grouping scheme is based on the organization of a single space for functions that require large uncarted areas



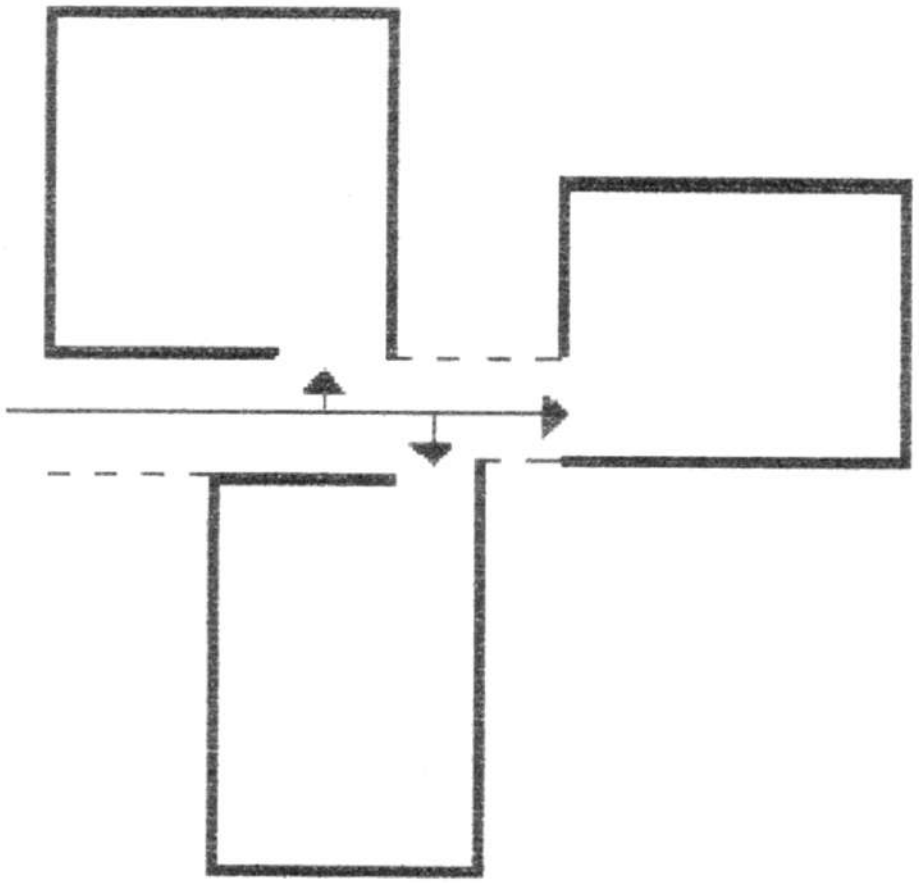
ATRIUM DIAGRAM OF ROOMS



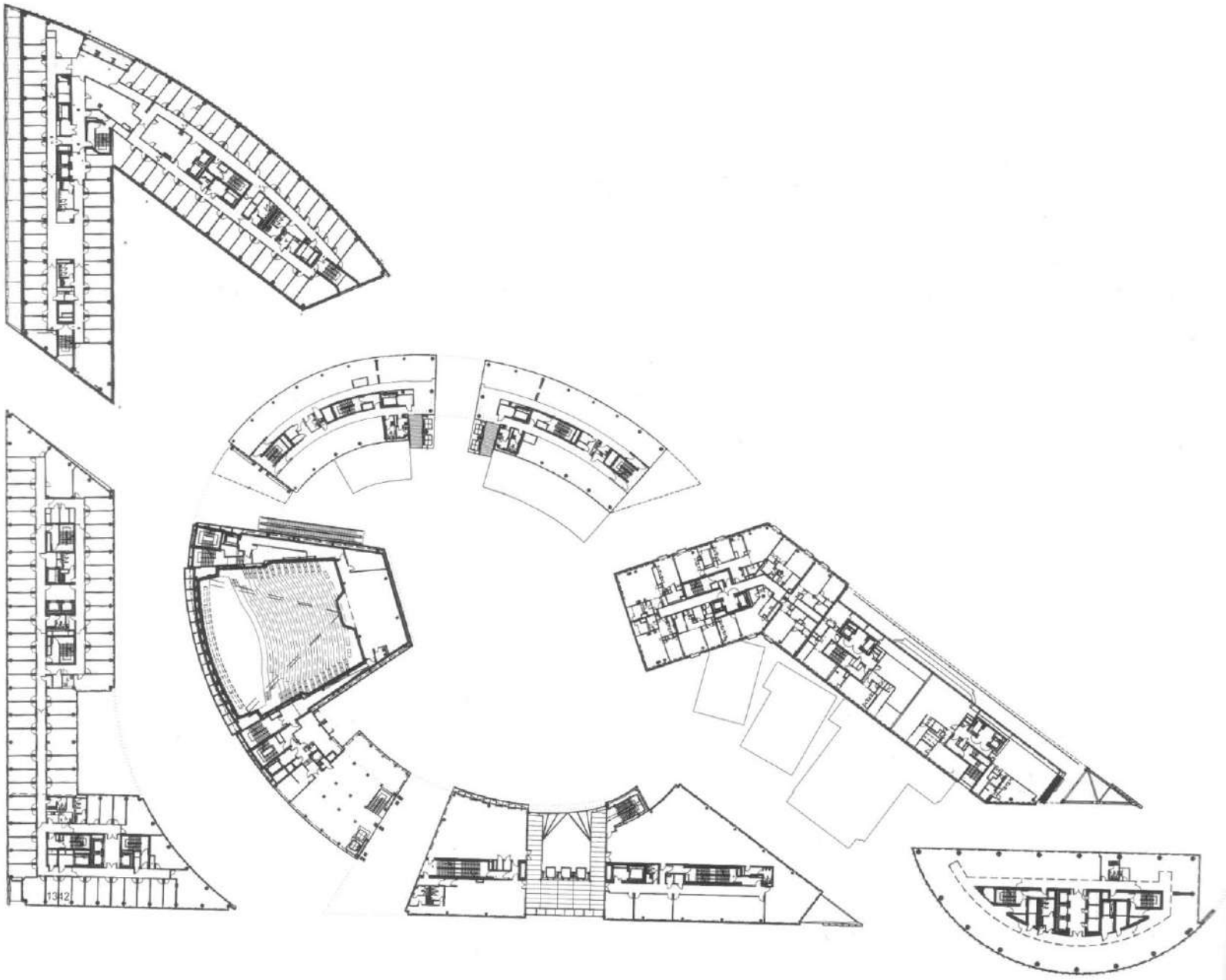
The atrium space grouping scheme is a number of rooms around a closed interior covered yard - atrium - and going into it.


SUMMER
CENTER
KANSI 6 DECK
DÄCK палуба
ATLANTIS
NIGHT CLUB
CASINO

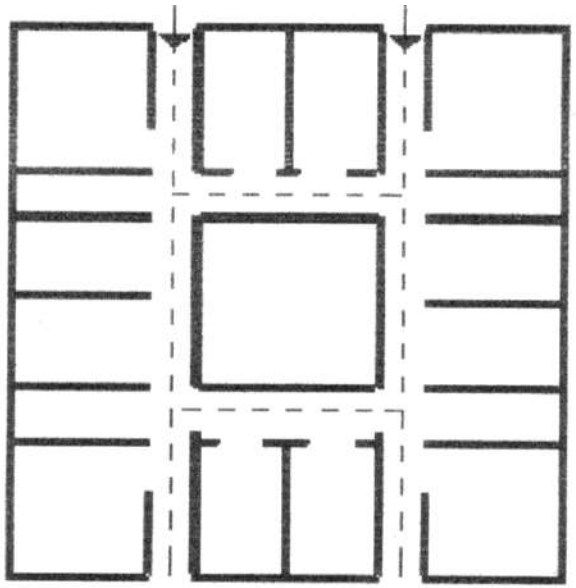
ROOM GROUPING PAVILION DIAGRAM

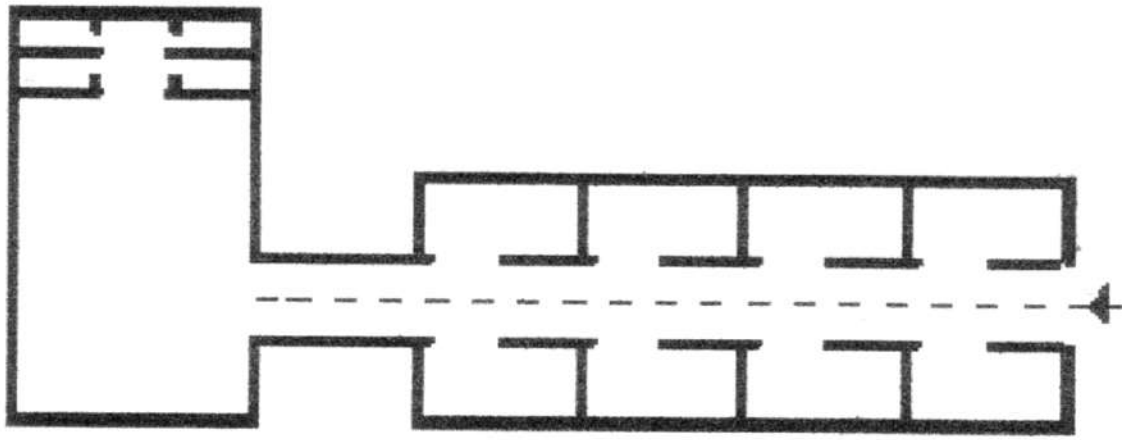


Pavilion diagram of the grouping of rooms is built on the spread division of rooms or their groups in separate volumes - pavilions connected to each other by a single composite solution.

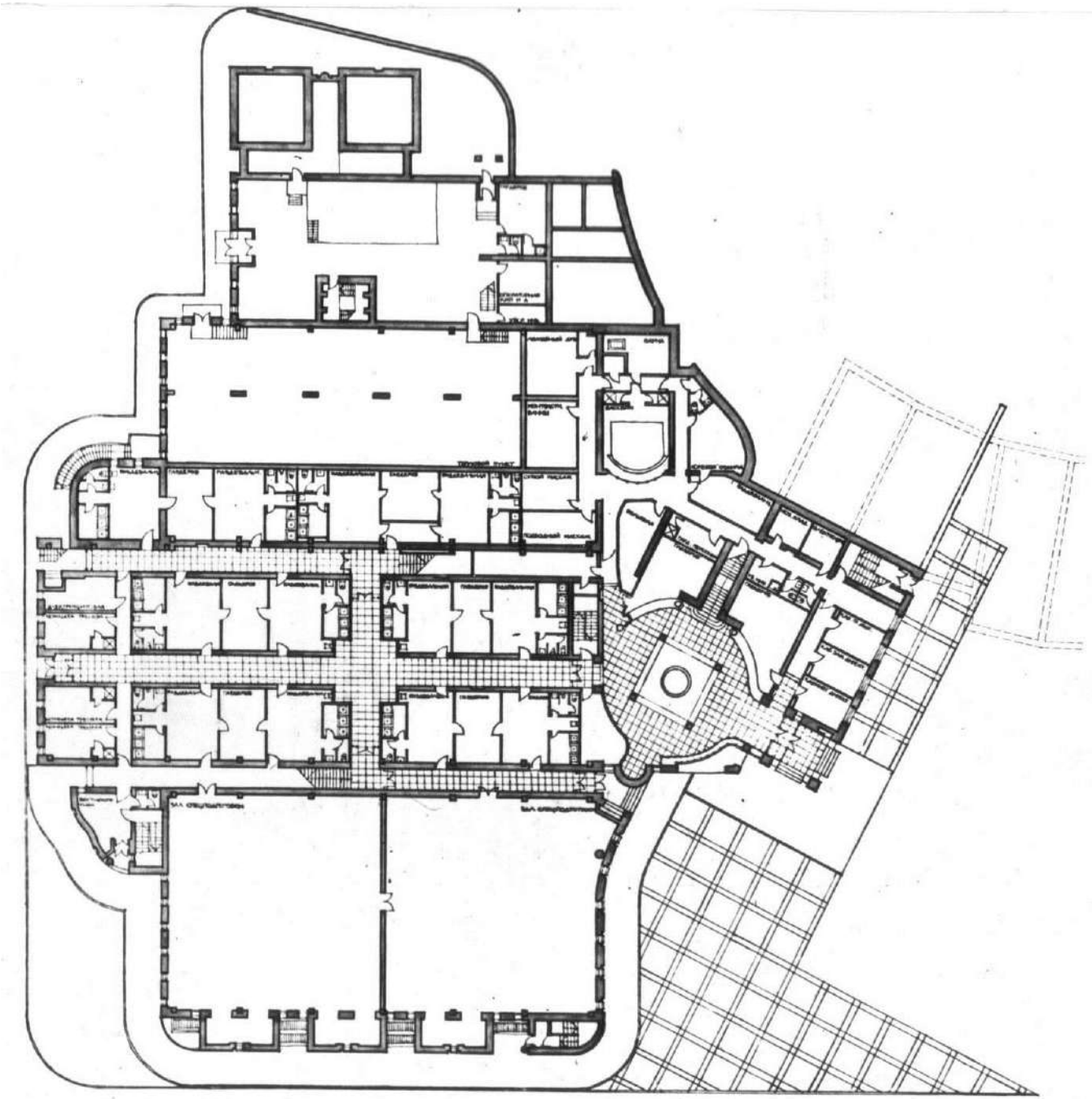


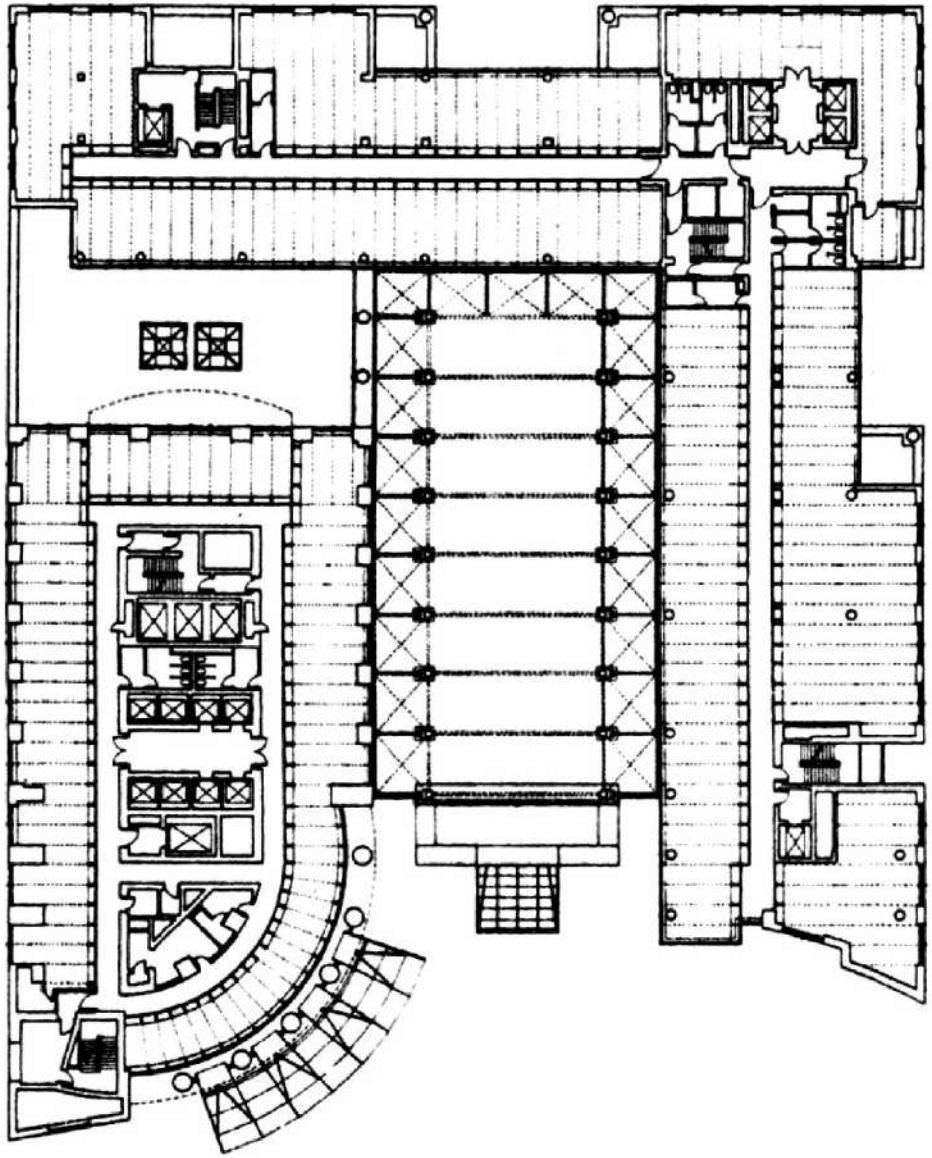
COMBINED SPACE GROUPING DIAGRAM

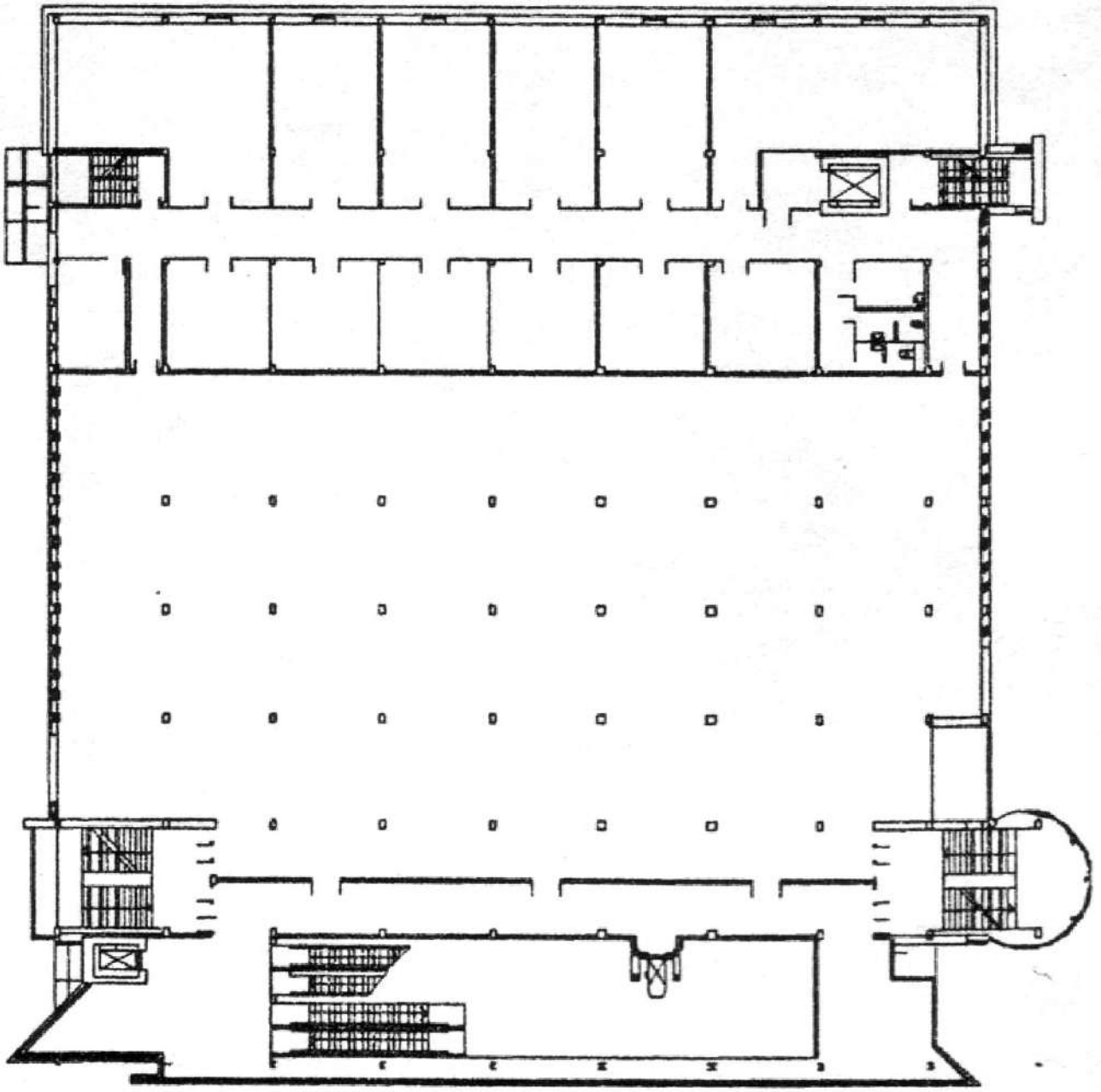


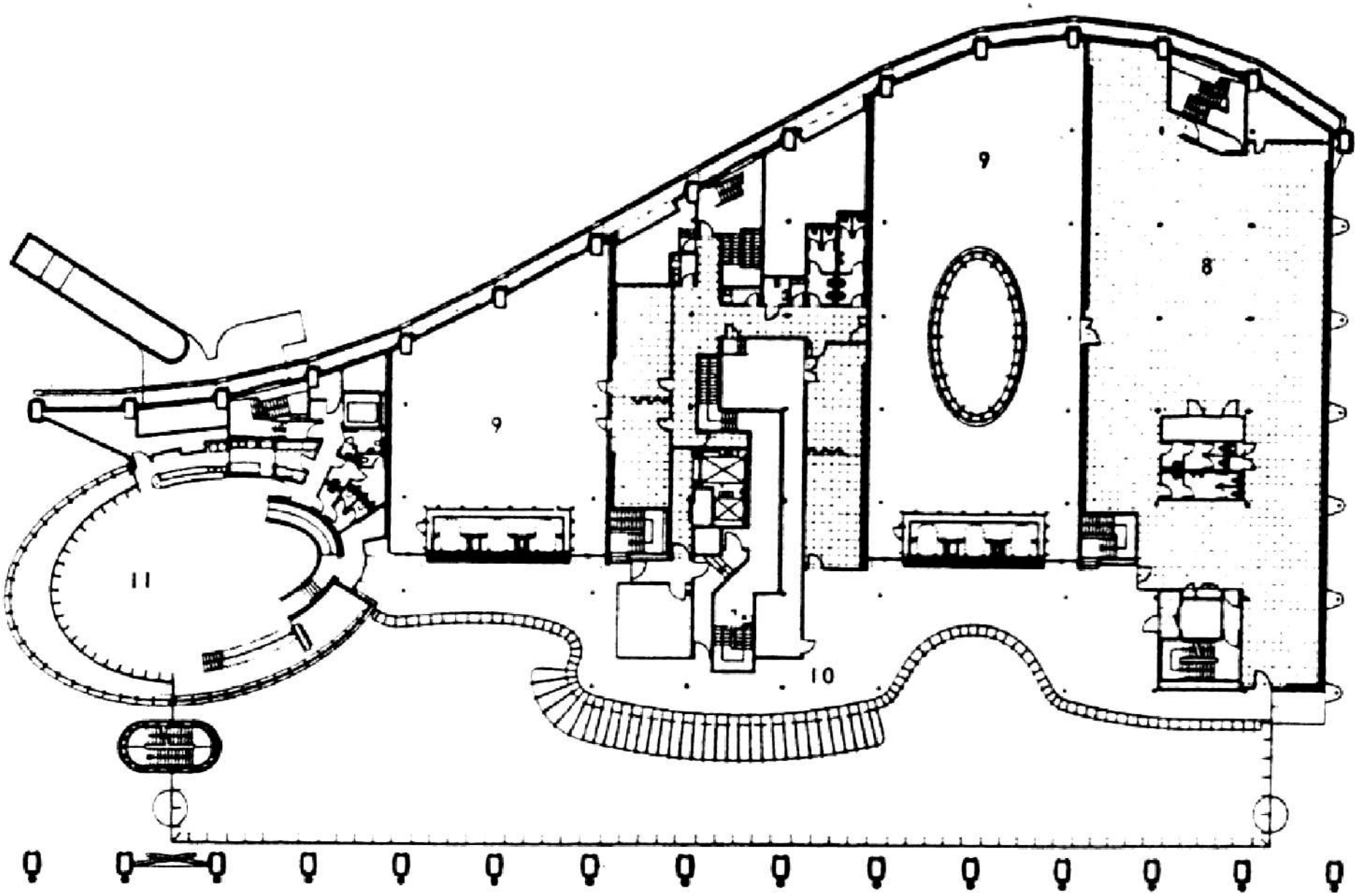


In case of combination and sharing of the above schemes combined diagrams are created: corridor-ring, anfilade-ring, etc.





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Based on the above space grouping diagrams

various compositional schemes of a public building or structure are conceived. The following basic types of composite schemes are revealed:

- **compact** circuit is built on the basis of bare, atrium

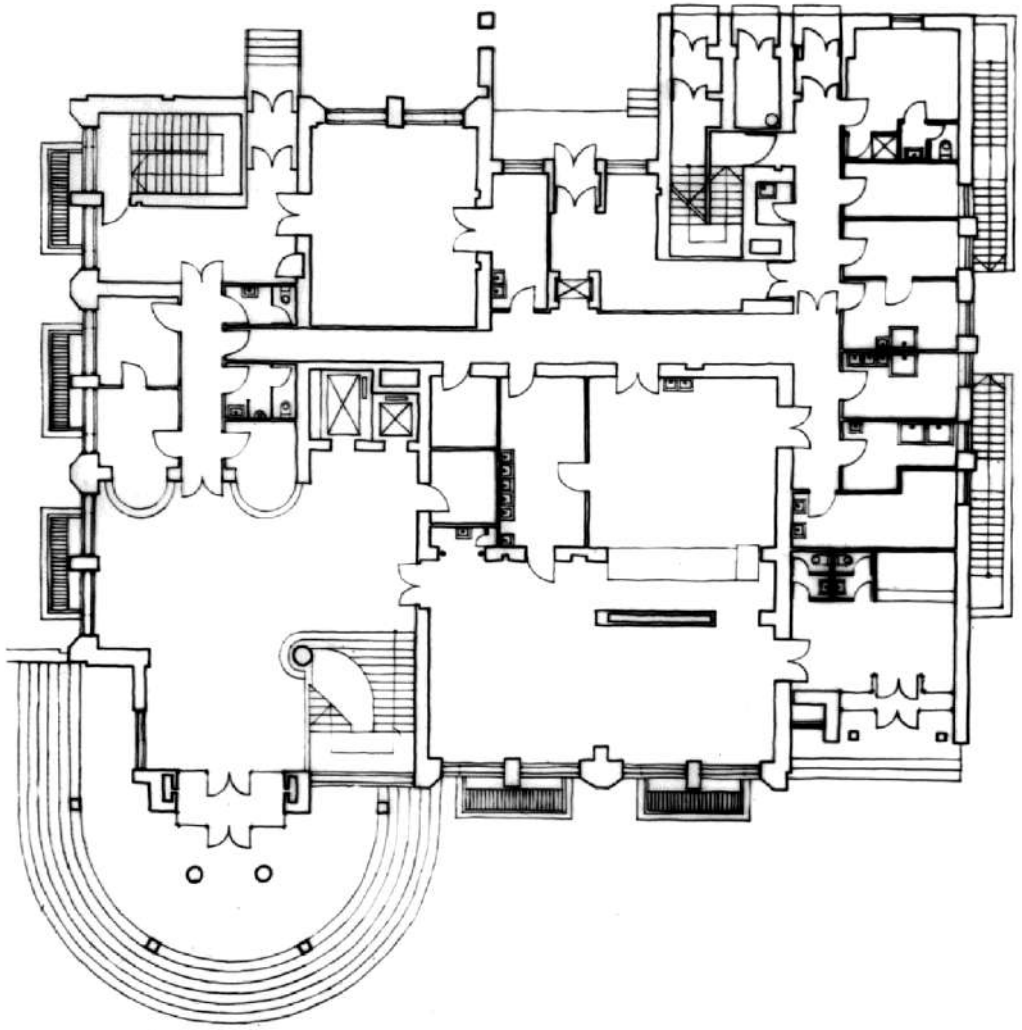
and combined space grouping schemes;

- **linear, extended** scheme includes corridor, gallery and anfilade schemes of space grouping;

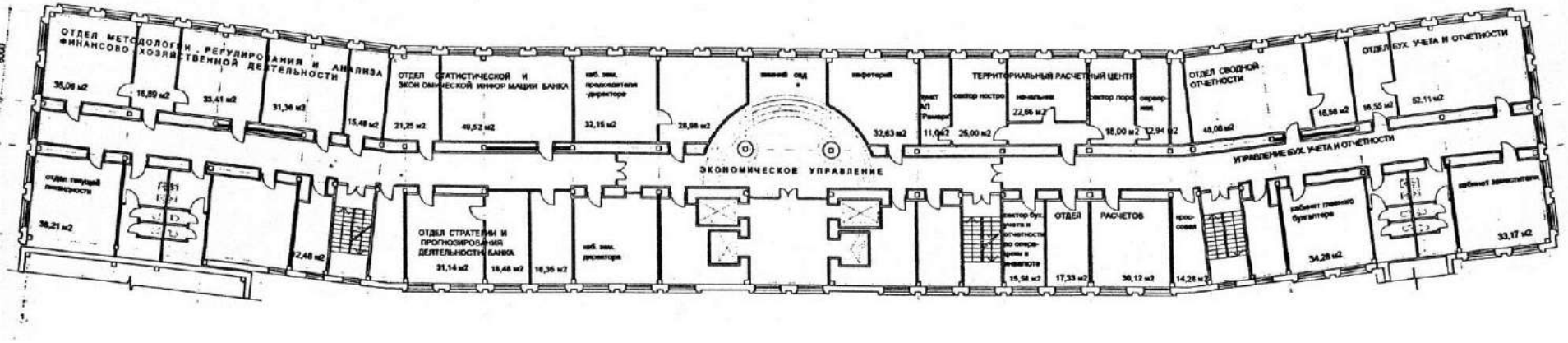
- **dissected** diagram is formed according to pavilion principle

space grouping schemes.

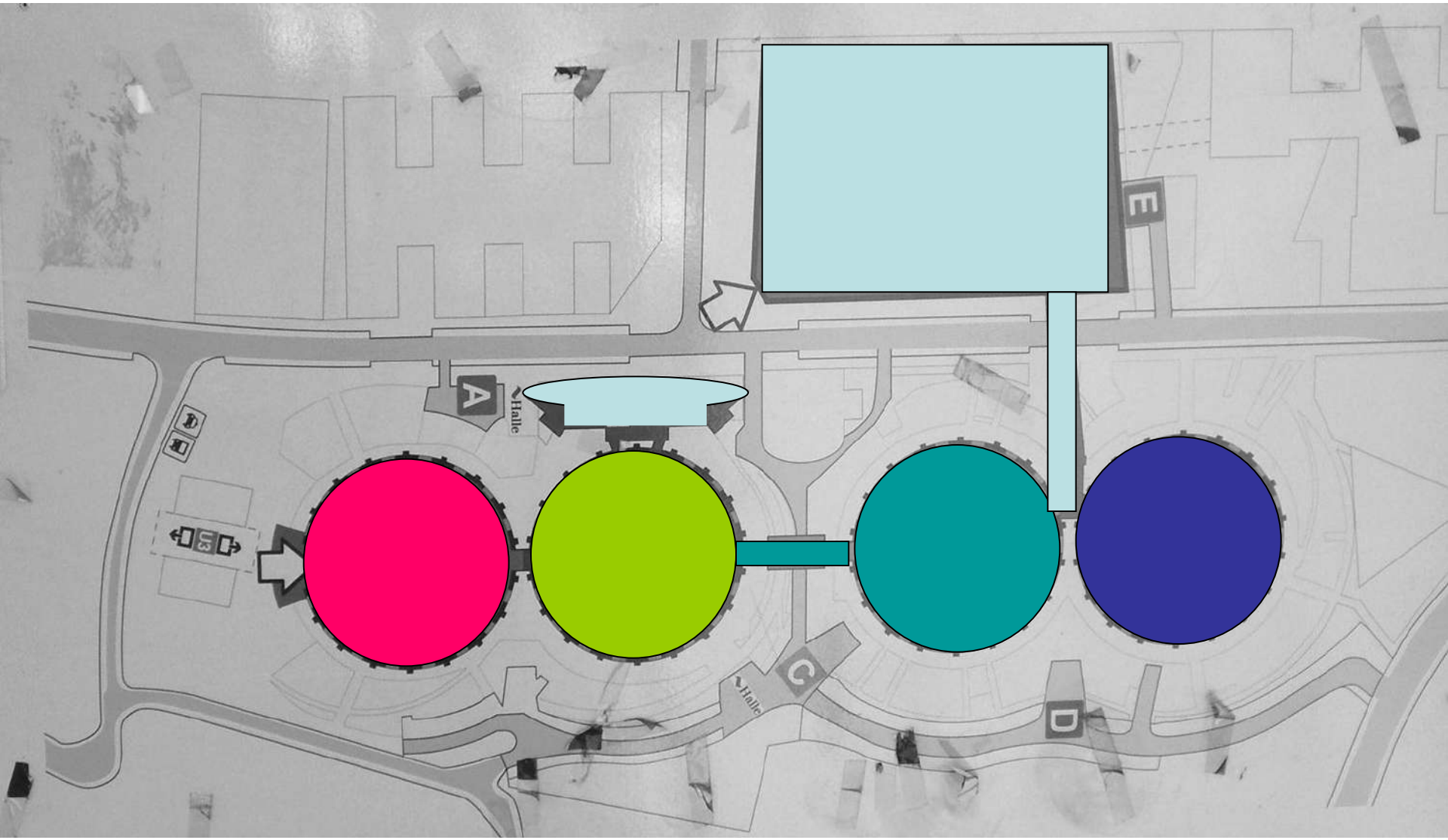
COMPACT COMPOSITE CIRCUIT



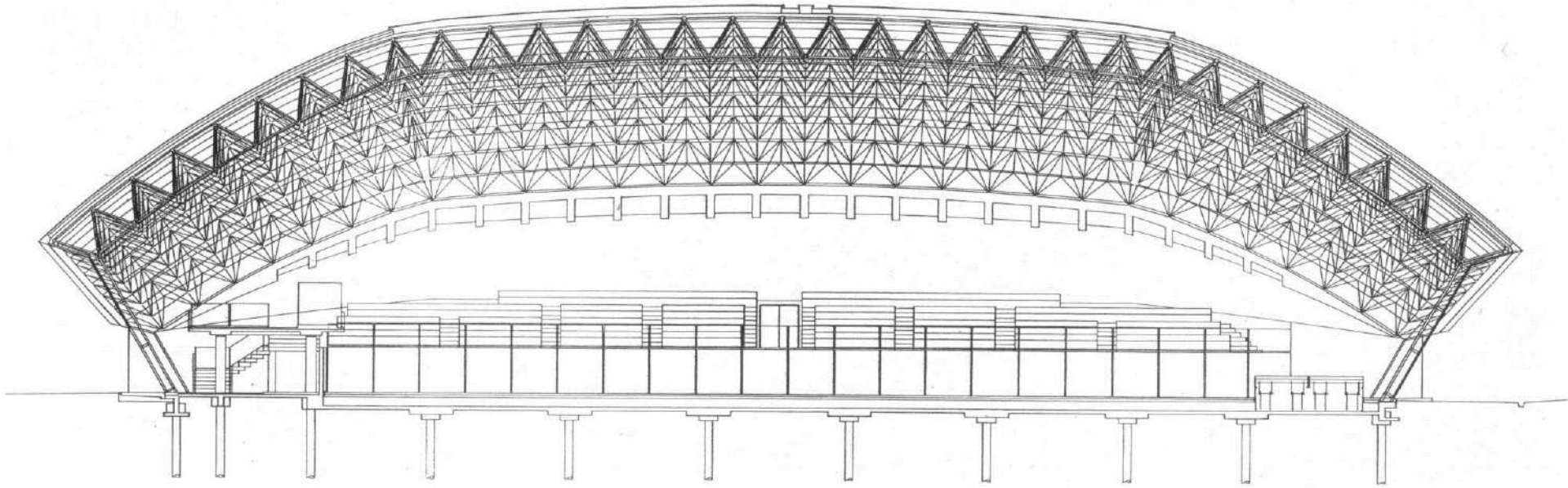
LINEAR COMPOSITE DIAGRAM



COMBINED COMPOSITE DIAGRAM

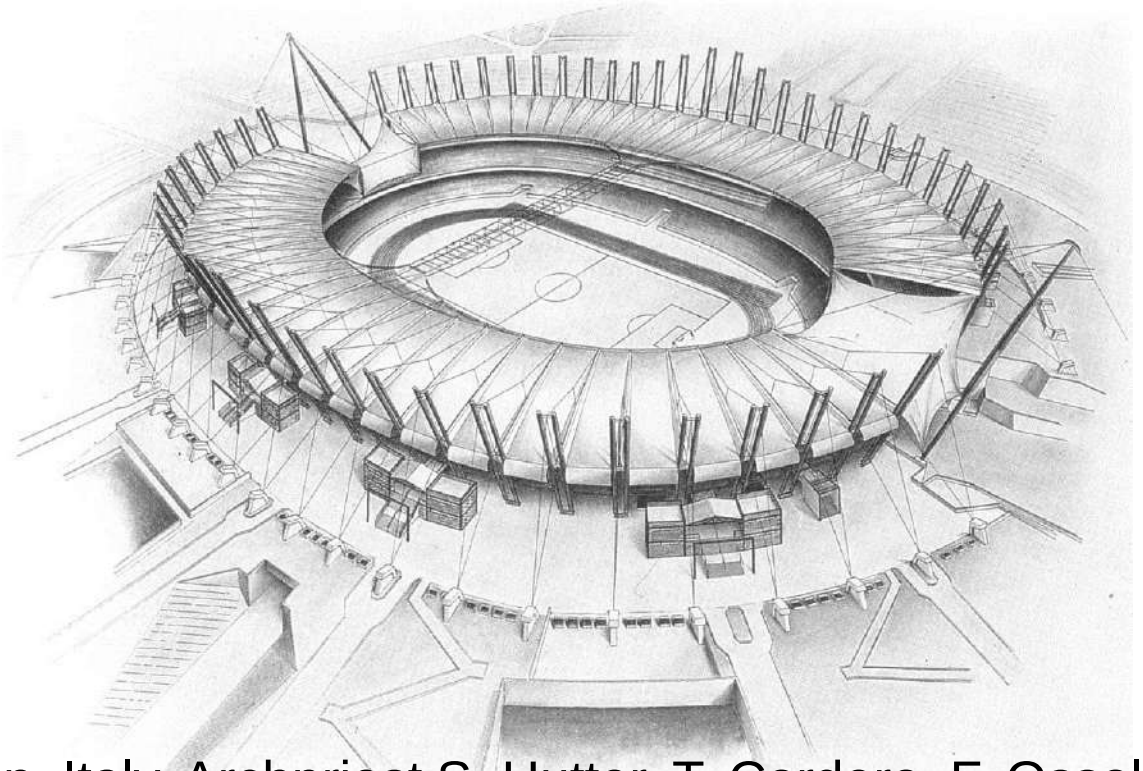


CONSTRUCTIVE STRUCTURE OF THE BUILDING

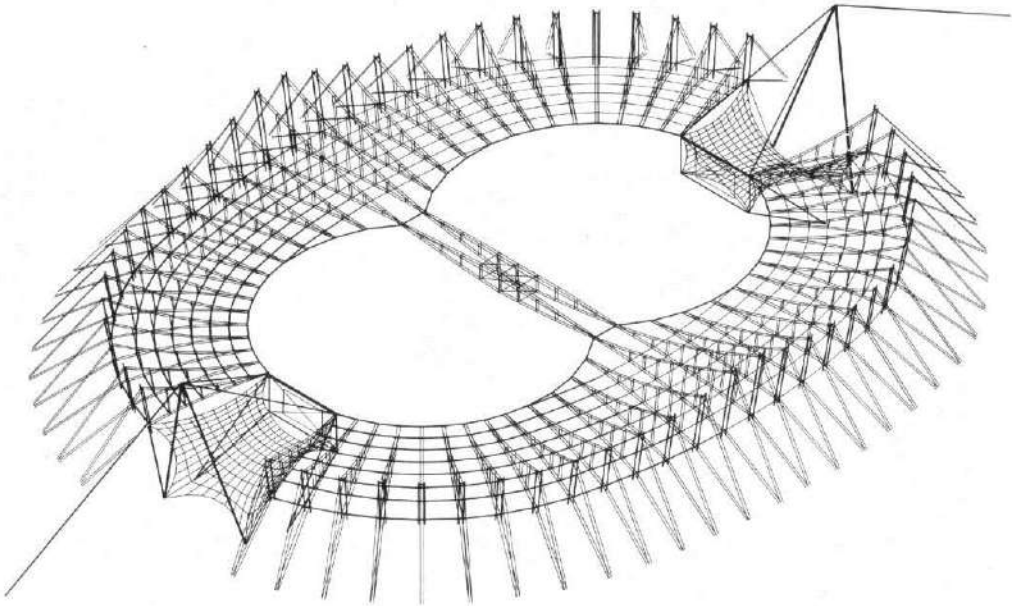


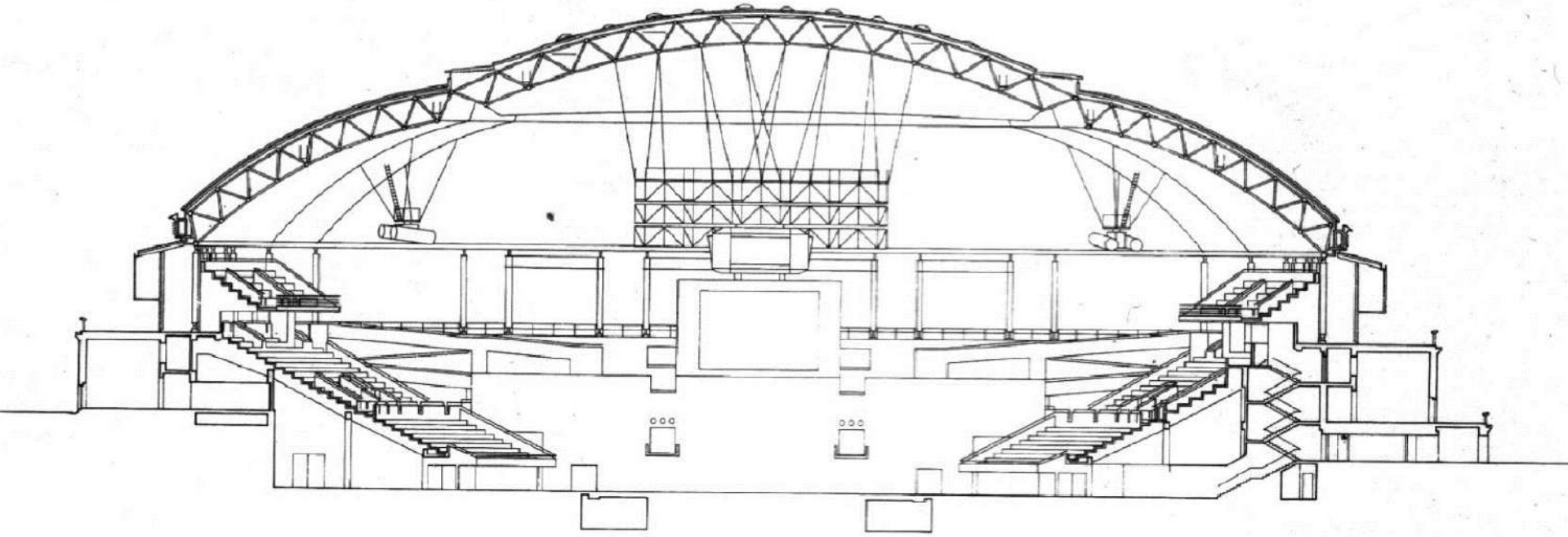
Sports Hall in Ogun, Japan, Archpriest S. Yo, 1988

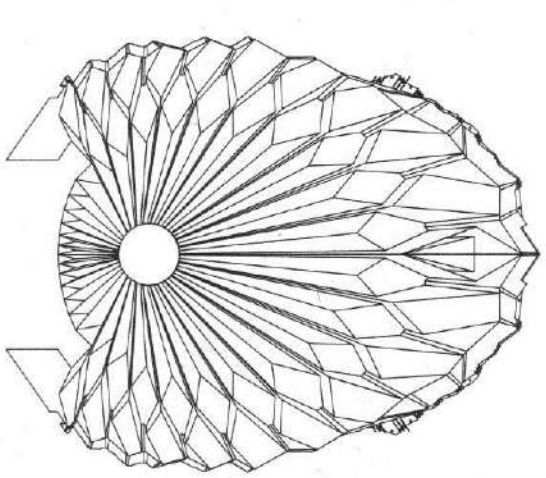
The constructive structure of the building is a set of interconnected structural elements (foundations, walls, floors, roofs, etc.) that perform specific functions in the building.

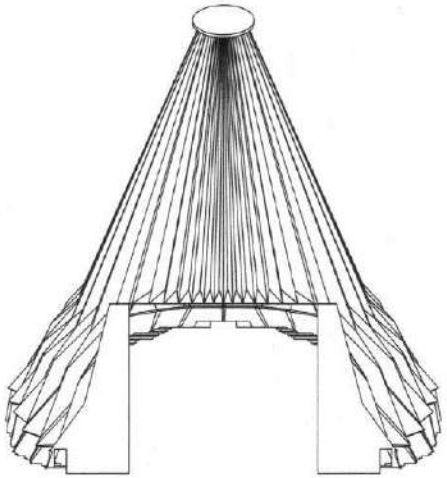


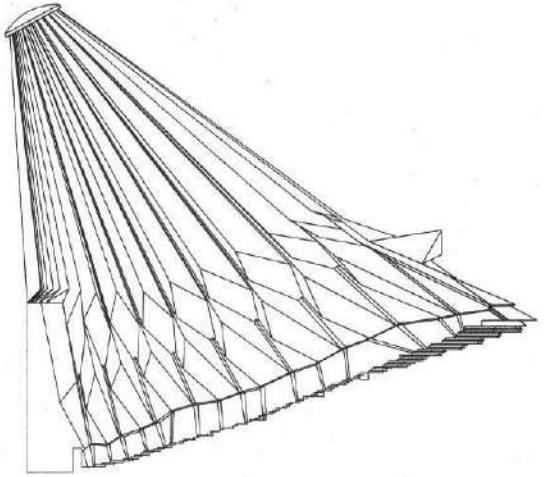
Stadium in Turin, Italy, Archpriest S. Hutter, T. Cordero, F. Ossola, 1984



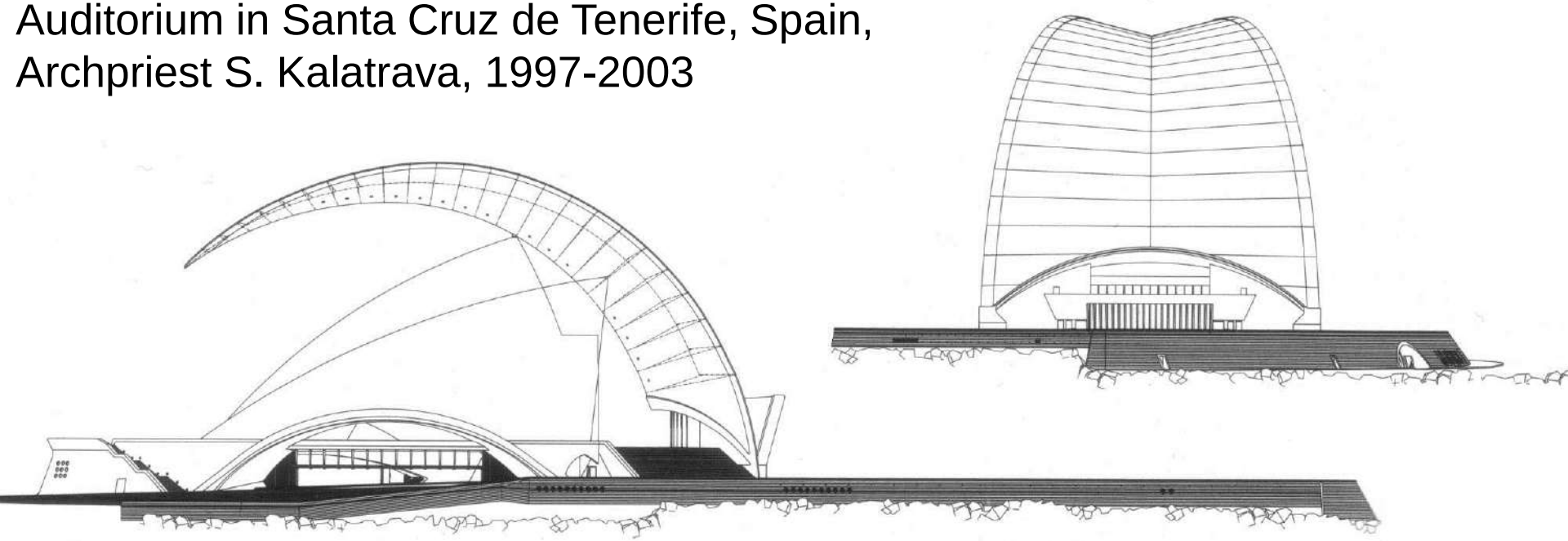








Auditorium in Santa Cruz de Tenerife, Spain,
Archpriest S. Kalatrava, 1997-2003



ENVIRONMENTAL FACTORS IN DESIGNING PUBLIC BUILDINGS. ENVIRONMENTAL DESIGN AS A MODERN WAY OF FORMING A SPACE-PLANNING STRUCTURE

Sustainable development - meeting the needs of the present without prejudice to the future. This means creating a human architectural environment based on the following basic principles:

- the building will be **economical** and at the same time appropriate

to maintain high standards of comfortable living of a person;

- it must be **environmentally friendly**: do minimal harm to

environment and human health;

- local **recyclable** materials will be used in the architectural solution;

-application of **energy-saving and energy-efficient** technologies: use of solar energy, active and passive; use of natural ventilation, wind energy, geothermal energy.

The buildings are certified according to BREEAM, LEED systems. At the same time, the evaluation criteria for its design are architectural, structural and engineering concepts.

We will identify several aspects that shape the ecosystem:

of the most important and structurally forming of contemporary buildings:

- analysis of climatic conditions of the design area

to determine the orientation and configuration of the building;

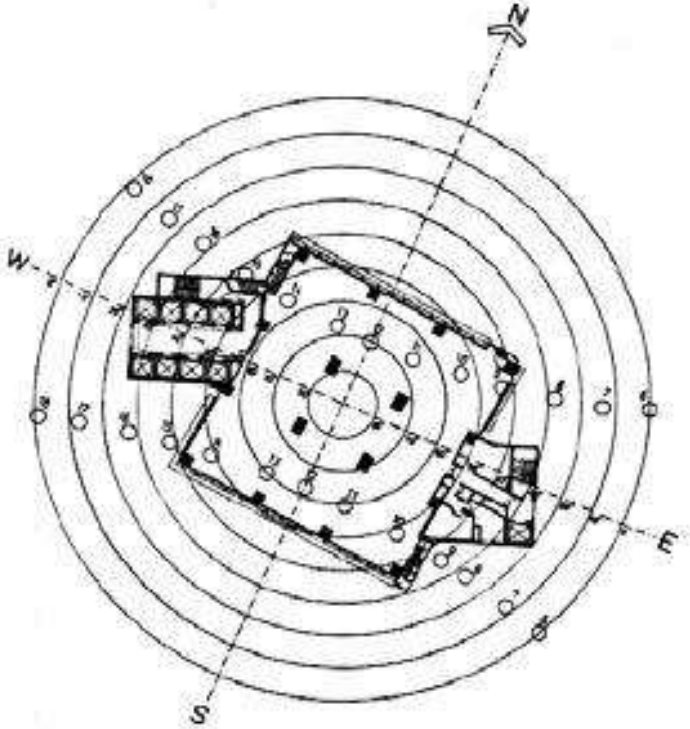
- possibility of using plants to form micro-climate in the building;

- natural lighting of premises, in particular of each

side of the place;

- natural ventilation of rooms;

- economical layout in terms of heating and turnover, cooling of the building depending on climatic conditions.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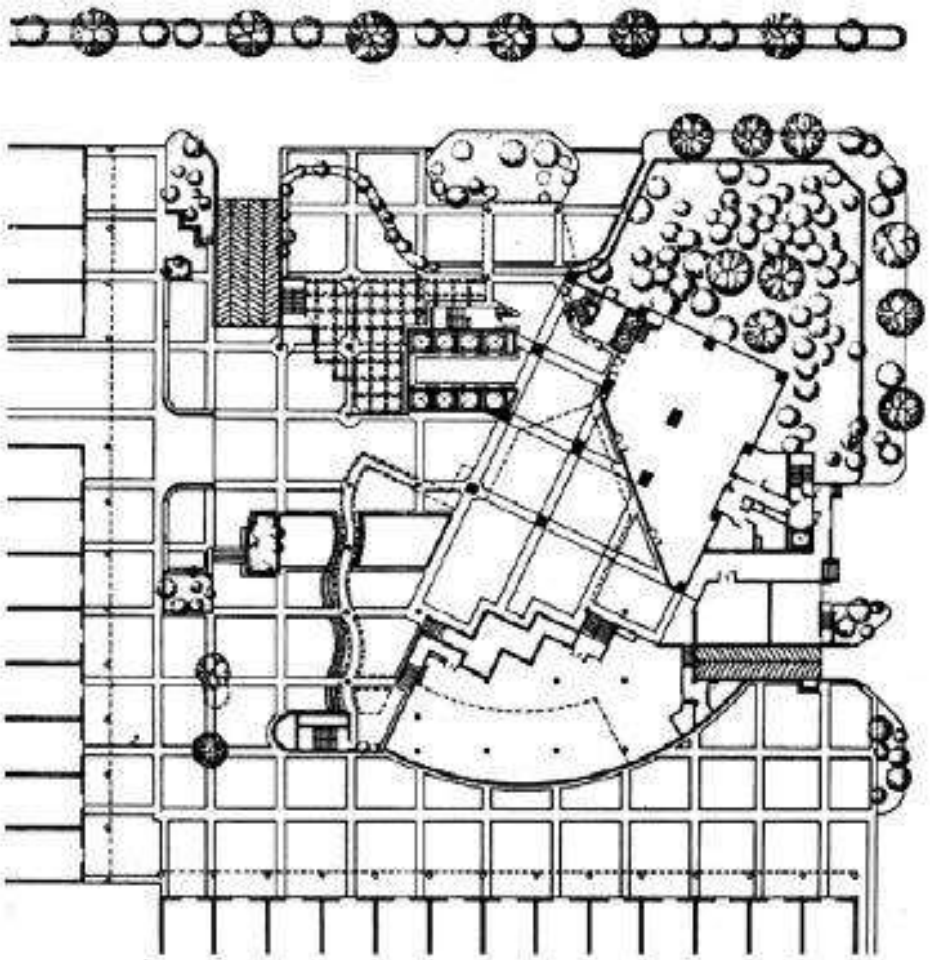
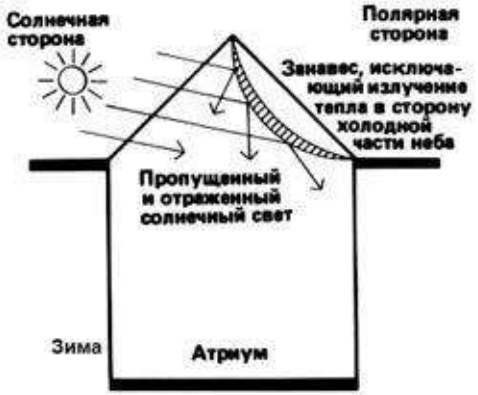
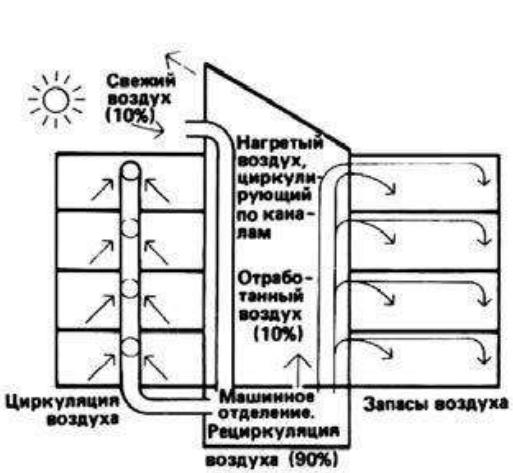
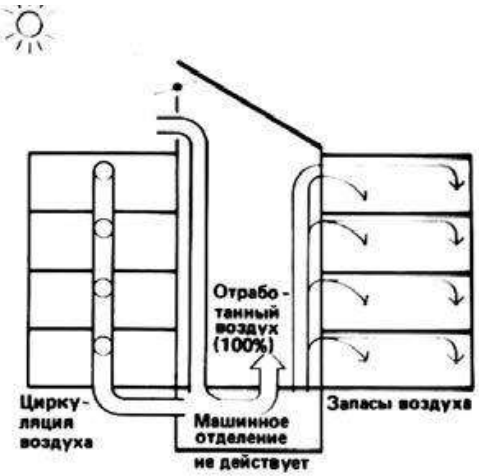


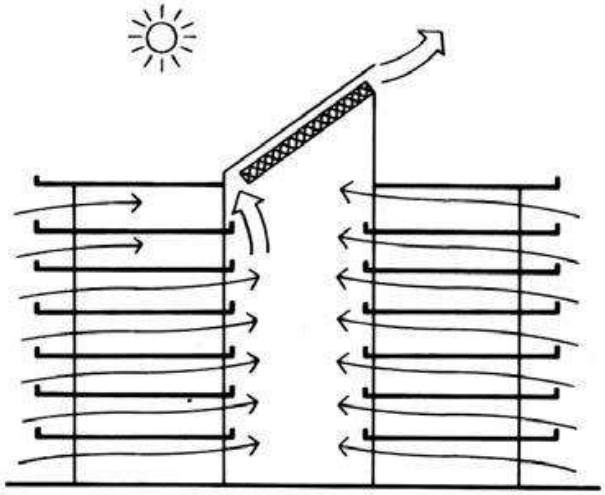


Atrium, transformable depending on the time of year
(by R. Saxon)





Atriums adapted for heating (1, 2) and cooling (3) buildings (by R. Saxon):



LECTURE 3.

STRUCTURAL UNITS OF BUILDINGS. MAIN BUILDING PLANNING ELEMENTS

Above ground floor - floor elevation of premises of which not lower than the ground elevation.

Attic — space between roof structures (external walls) and top floor slab.

Mansard — a floor in the attic space, the facade of which is entirely or partially formed by the surface sloped or broken roof.

Basement — floor, floor elevation of premises of which below the ground elevation by more than half the height of rooms.

Cellar — floor with floor elevation below planning elevation of the ground by not more than half the height of rooms.

Technical Floor — Engineering Floor and the laying of communications. It can be located in the lower (technical underground), upper (technical attic) and in the middle part of the building.

STRUCTURAL ELEMENTS OF BUILDINGS

- entrance group of rooms: tambours, lobbies, cloak-rooms;
- group of the main rooms: halls of different functions, auditoriums;
- group of utility and auxiliary rooms, sanitary blocks;
- group of technical rooms: boiler rooms, ventilation rooms, pump rooms, water metering units, elevator machine rooms;
- horizontal communications: corridors, galleries, lobbies, lounges, whose goals is to link all the above mentioned groups of rooms into a single frame within one floor;
- vertical communications: stairs, ramps, elevators, escalators whose goals is to link all the above space groups into a single vertical frame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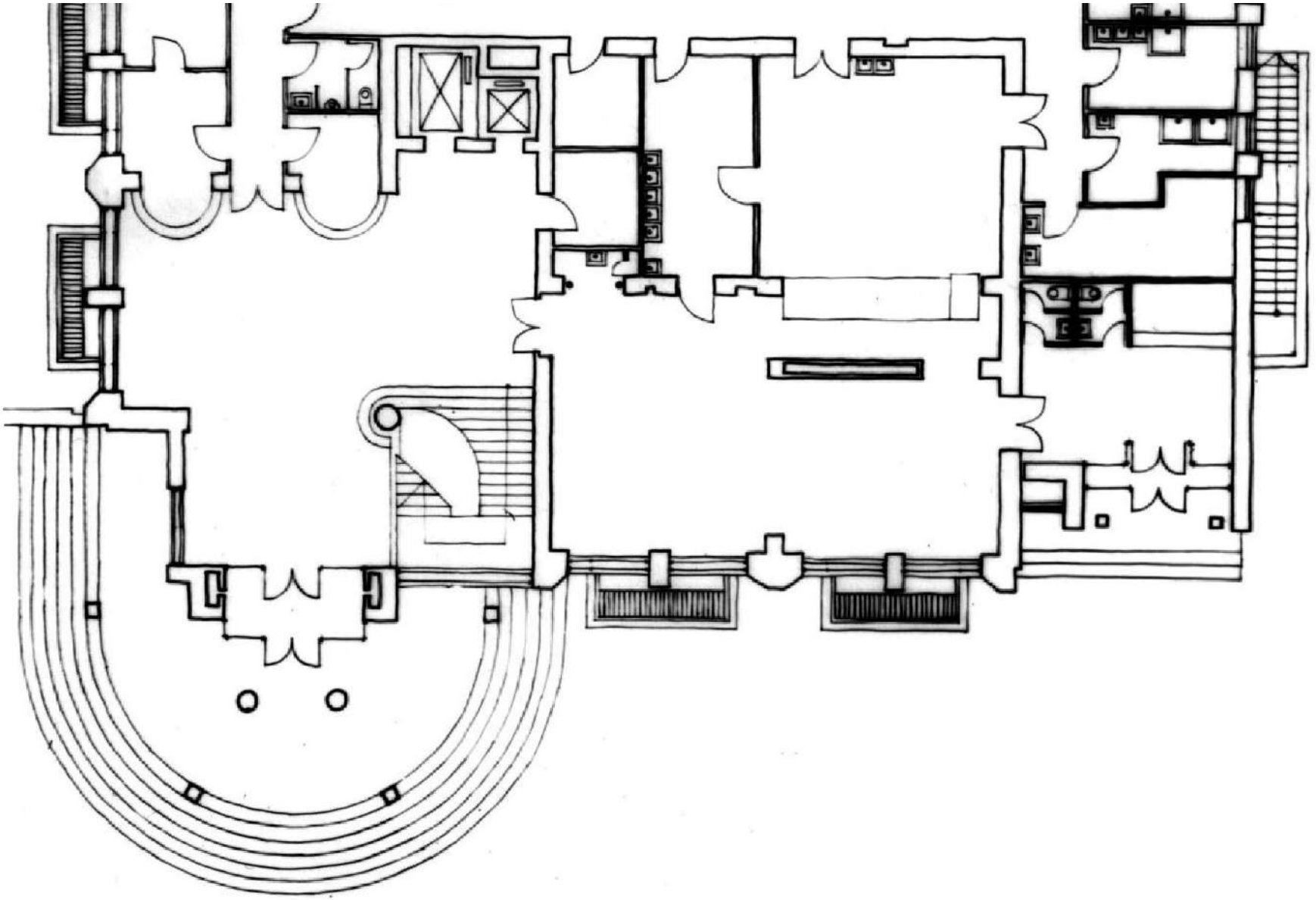
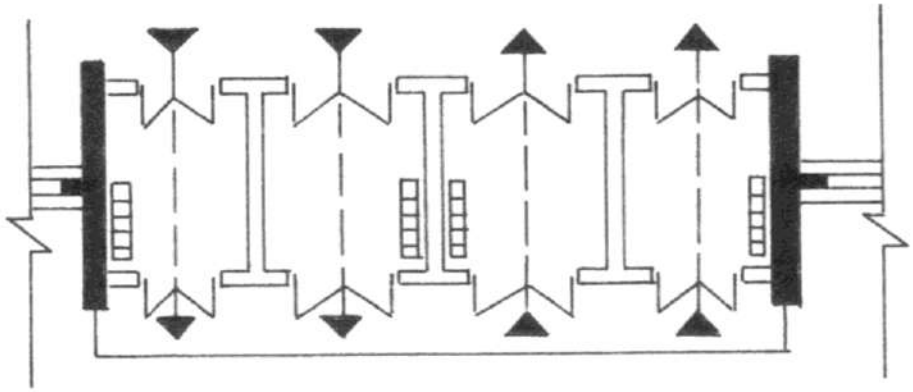
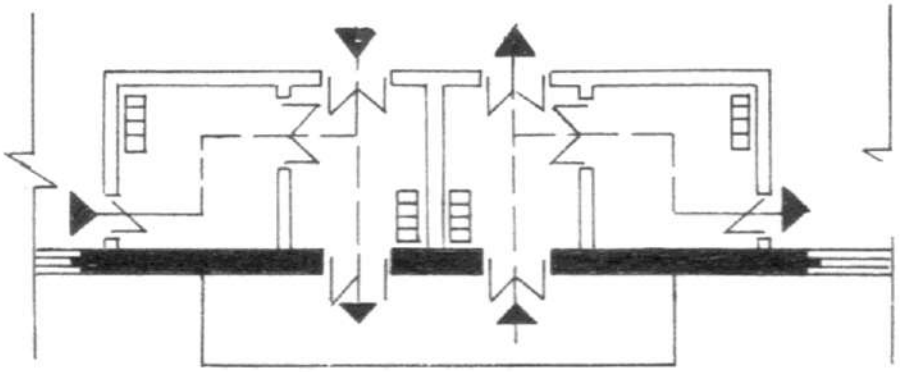
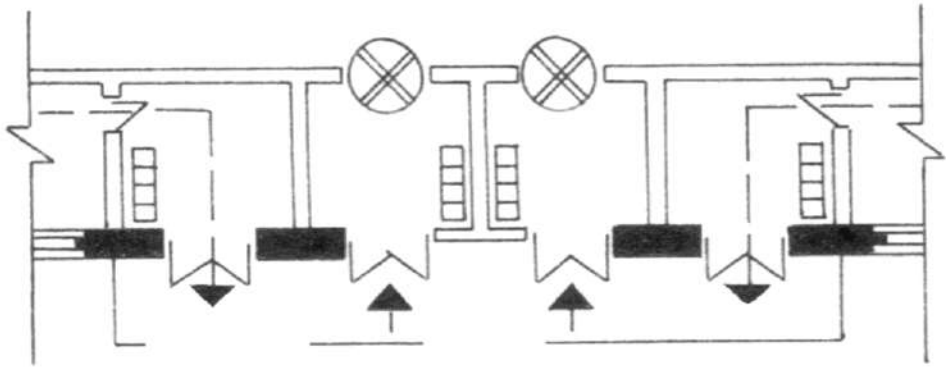
ENTRANCE ROOM GROUP



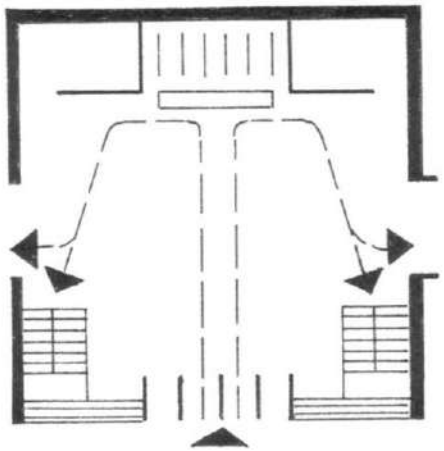
TAMBOUR

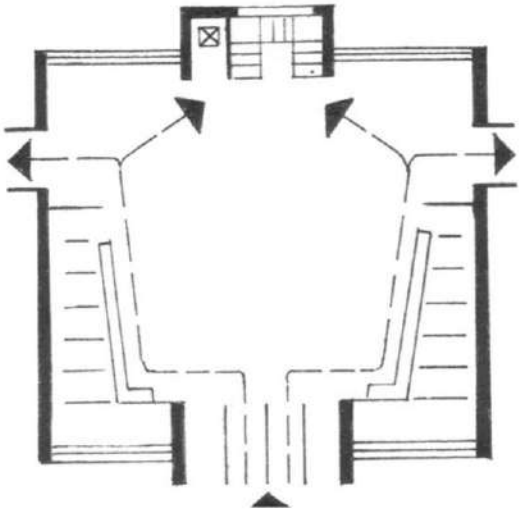


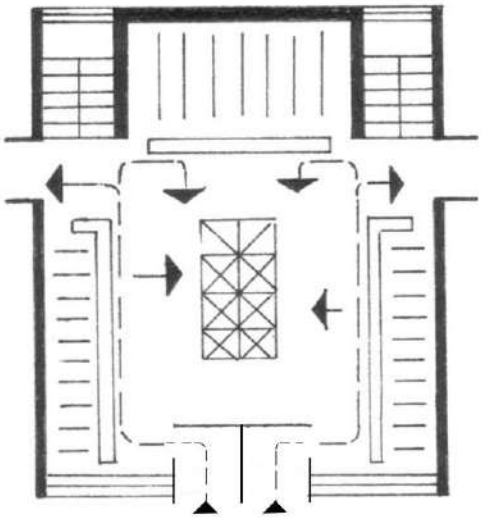


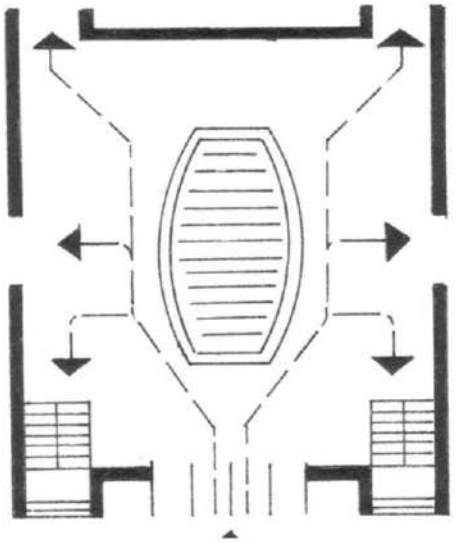


CLOAK-ROOMS









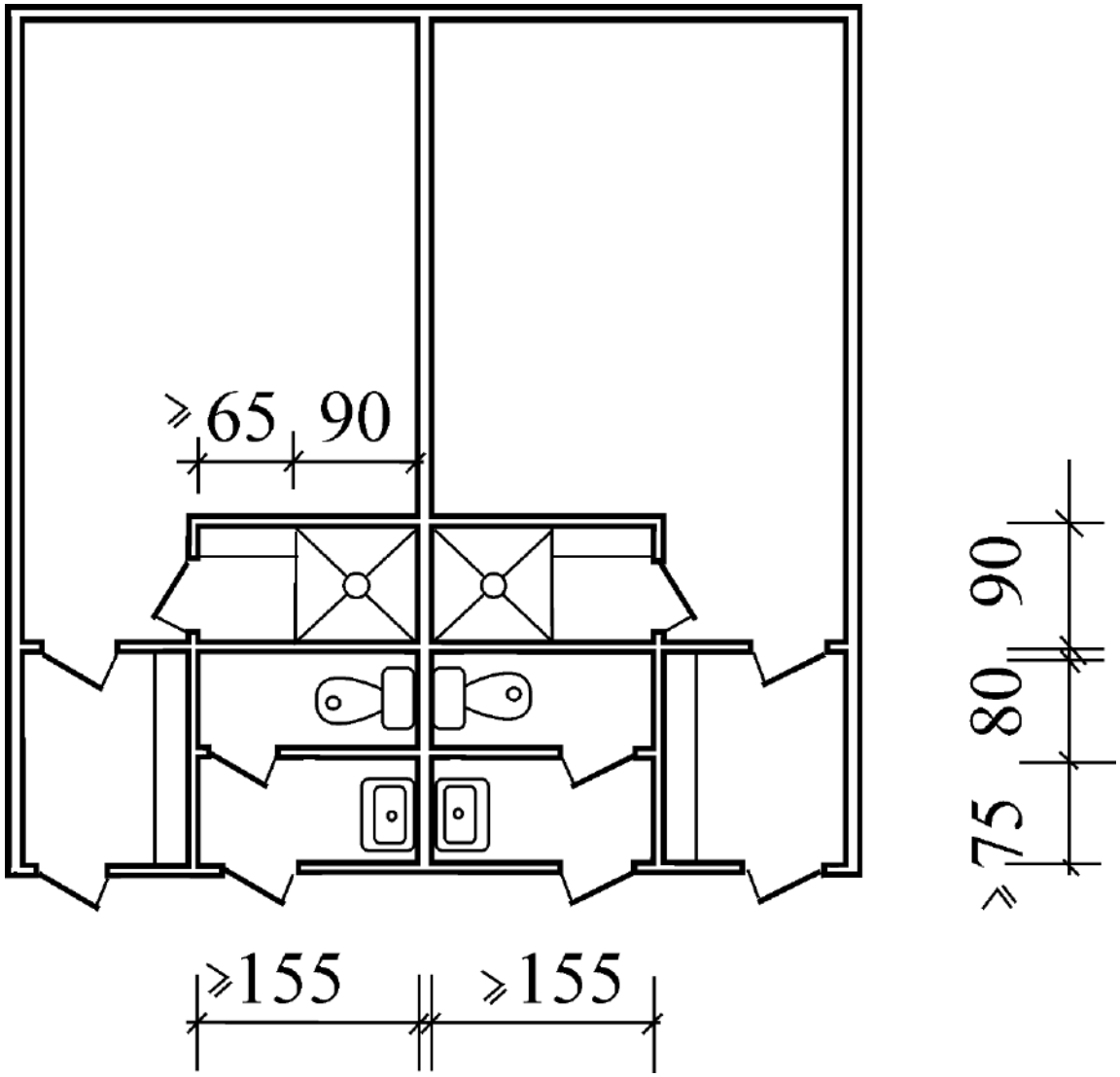
MAIN PREMISES

AUXILIARY ROOMS

Auxiliary rooms of public buildings include:

- staff cloak-rooms;
- household rooms;
- storerooms;
- sanitary units, showers, Women's personal hygiene rooms, toilets

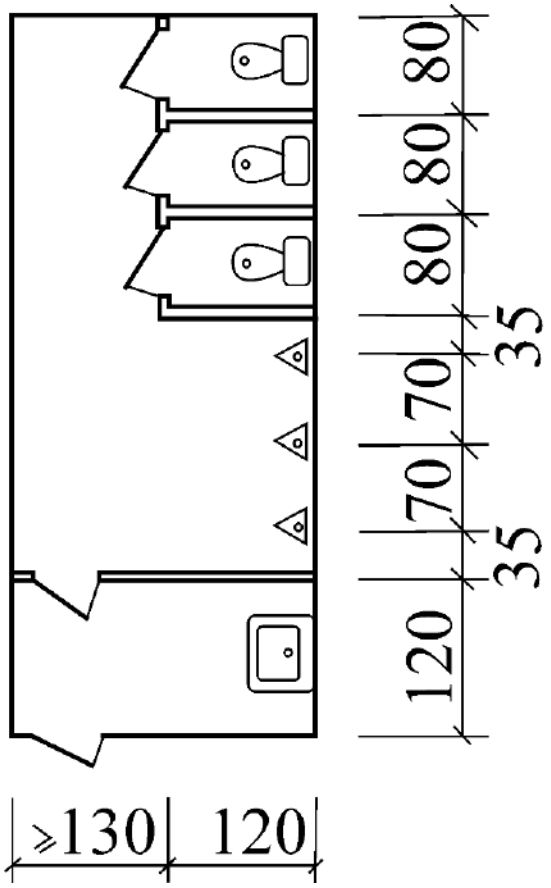
STAFF CLOAK-ROOMS

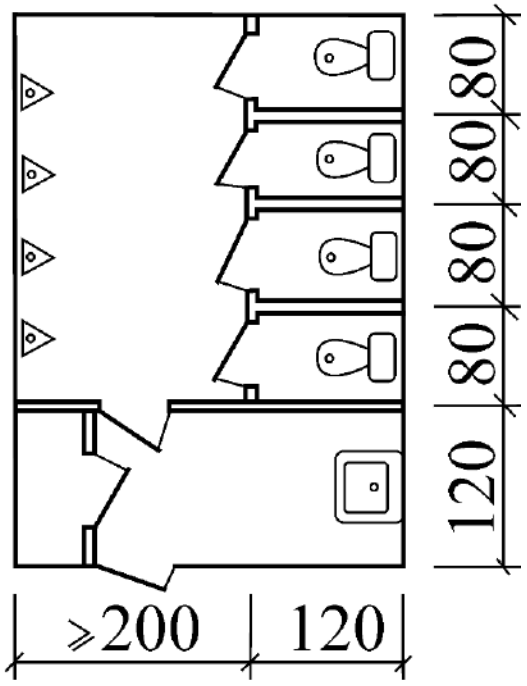


Denomination	Indicator, m
Plan Dimensions	
Cabins:	
Showers closed;	1,8×0,9 (1,8×1,8)
Shower open and with	0,9×0,9 (1,2×0,9)
through passage half-choke;	
personal hygiene of women;	1,8×1,2 (1,8×2,6)
bathrooms	1,2×0,8 (1,8×1,65)
Benches in the dressing rooms	0,3×0,8 (0,6×0,8)
Drinking water supply system	0,5×0,7
Wardrobes in dressing rooms	
for street and home clothes	0,25×0,5
Height Dimensions	
Dividing partitions:	
up to the top of the partition;	1,8
from the floor to the bottom of the partition	0,2
Wardrobes for clothing storage	1,65
Distance between axes of sanitary appliances	
Single washbasins	0,65
Hand and foot baths, urinals	0,7
Width of passages between rows	
Shower cabins closed, washbasins	1,2 (1,8)
Group	
Shower cabins open and latrines, urinals	1,5 (1,8)
Single washbasins	1,8
Hand and foot baths, cabins	2
women's hygiene, photary cabins	
Wardrobe cabinets for storage	
clothing, with the number of compartments in the row:	
to 18	1,4
from 18 to 36	2,0

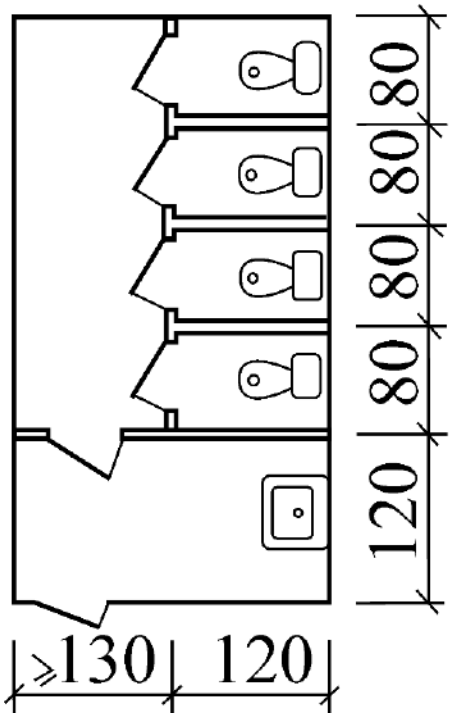
Indicators for disabled persons with impaired operation of the support motor are indicated in parentheses

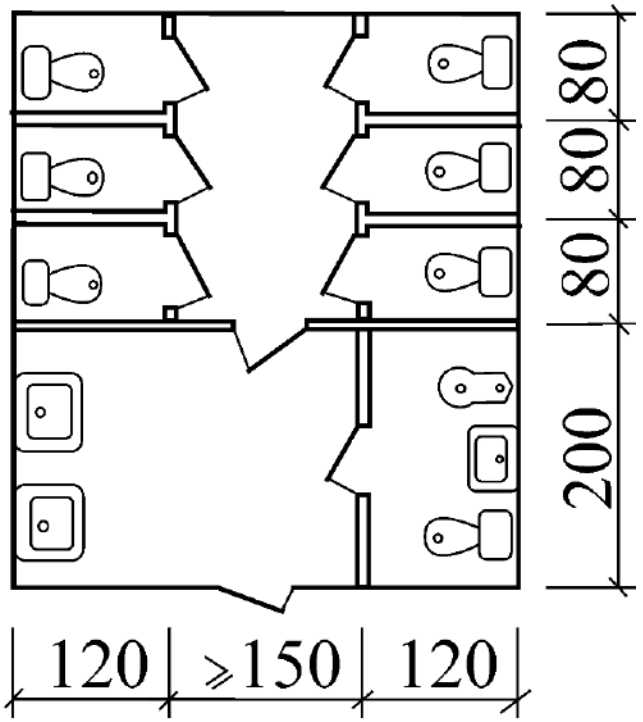
SANITARY UNITS



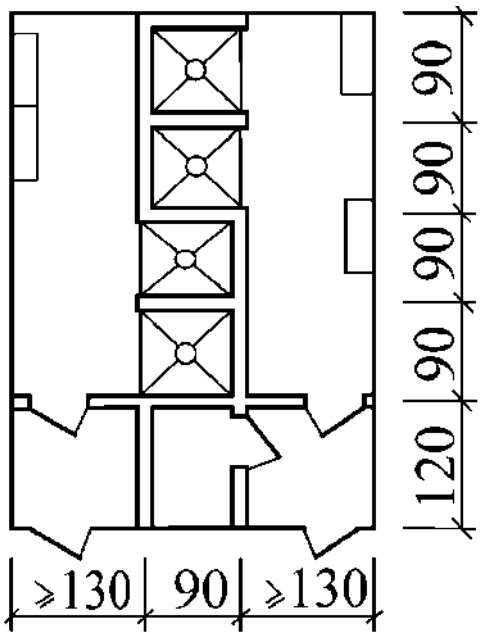


SANITARY UNITS





SHOWERS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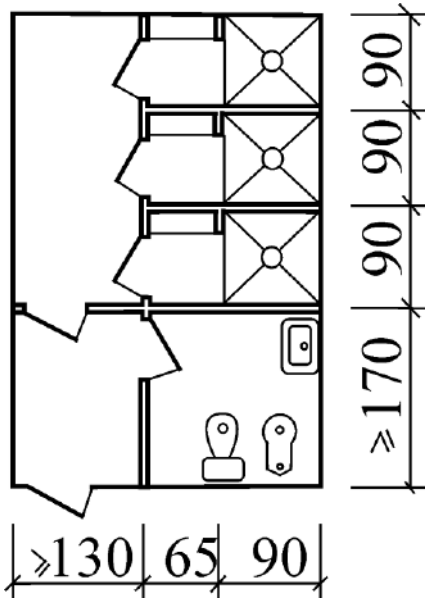
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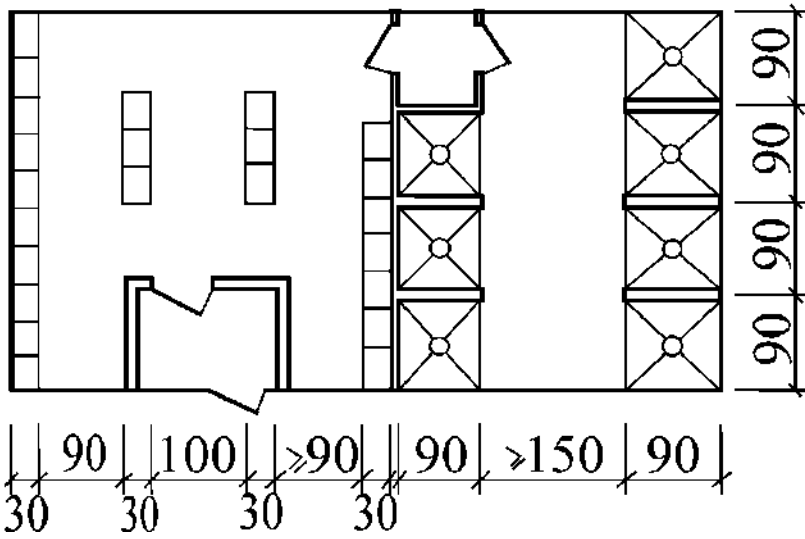
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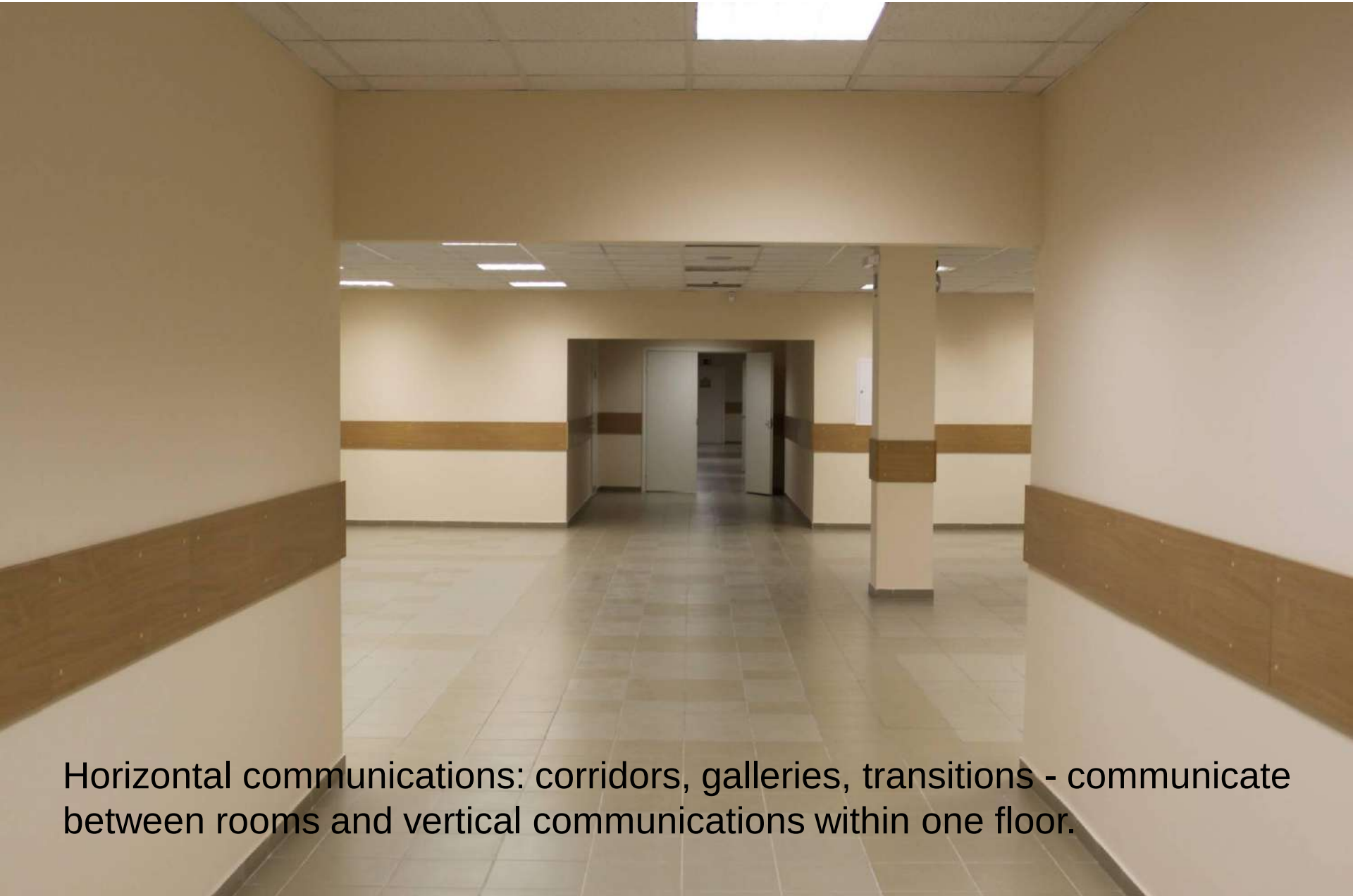
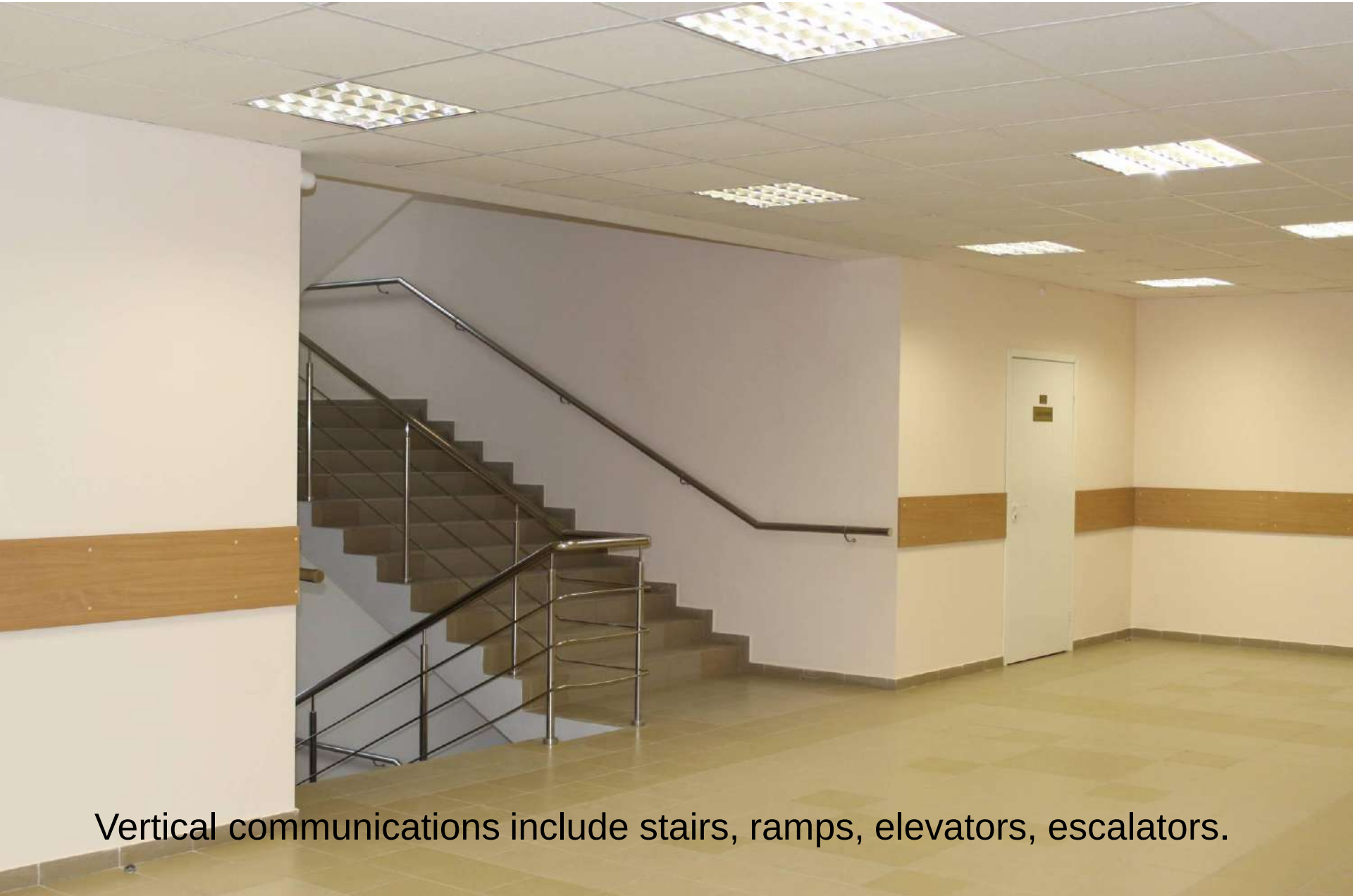
HORIZONTAL COMMUNICATIONS



Horizontal communications: corridors, galleries, transitions - communicate between rooms and vertical communications within one floor.


ПК-26
ПК-27

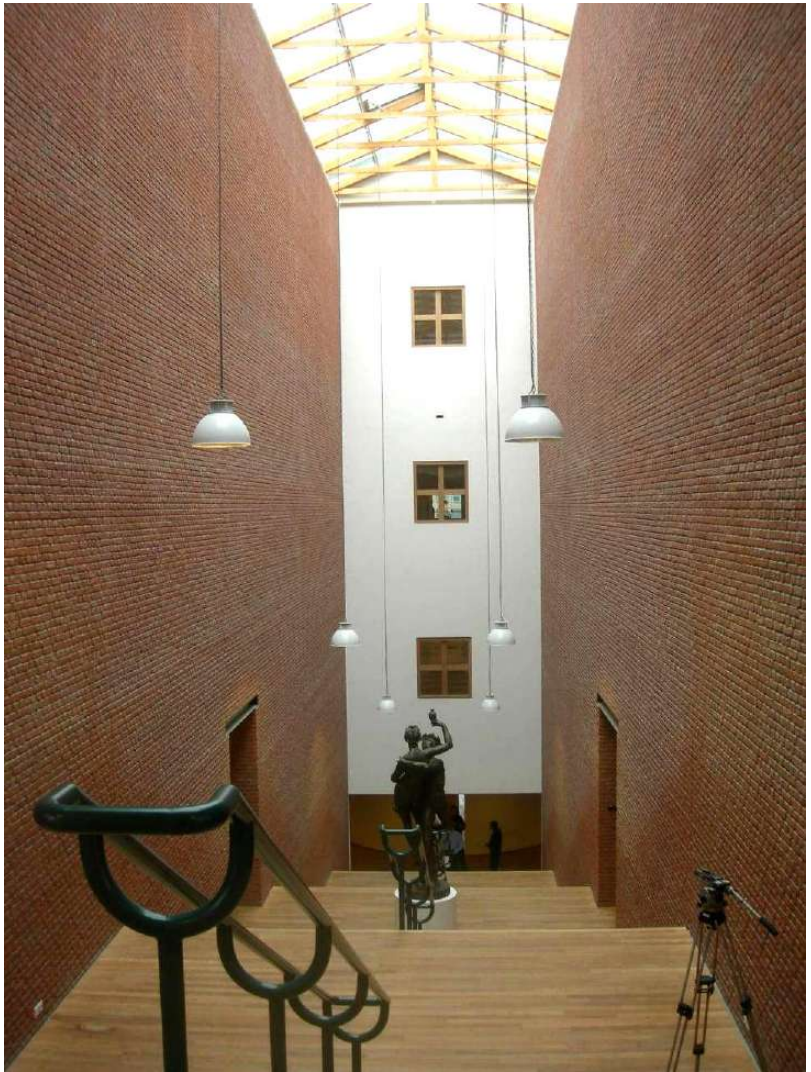
VERTICAL COMMUNICATIONS



Vertical communications include stairs, ramps, elevators, escalators.

LECTURE 4.

HORIZONTAL AND VERTICAL COMMUNICATIONS



HORIZONTAL COMMUNICATIONS

Horizontal communications: ***c*orridors, galleries, passageways, halls** provide communication between rooms and vertical communications within the same floor.

The minimum width of the main corridors of public buildings is recommended not less 1.8 m, minor — 1.2 m (at length 10 m).

The corridors are of the following types: with one-way construction, with two-way construction, with mixed construction and paired corridors with rooms on the outer sides and between them.

There are some examples.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ПК-26
ПК-27


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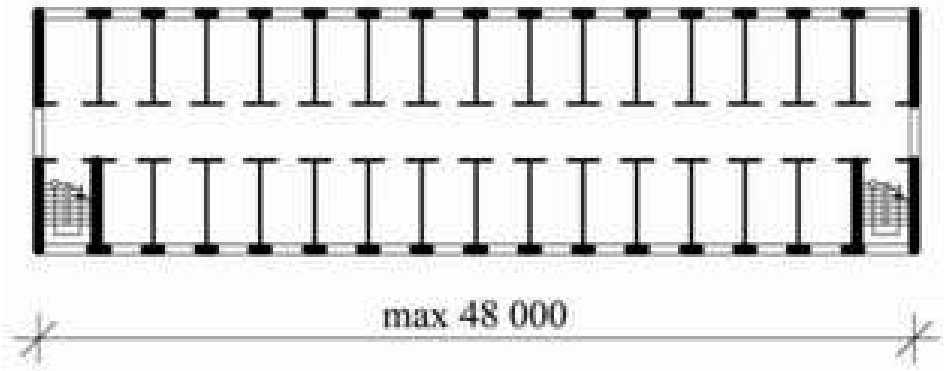
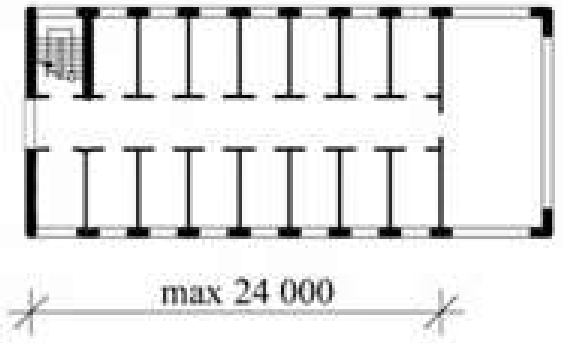
In the corridors, it is necessary to design natural lighting.

The maximum length of the corridor when illuminated from two ends is 48 m; when illuminated from one end is 24 m; with a longer length, it is necessary to design light pockets, the distance between which should be no more than 24 m, while the distance between the light pocket and the window at the end of the corridor must be no more than 30 m. The width of the light pocket must be at least half of its depth.

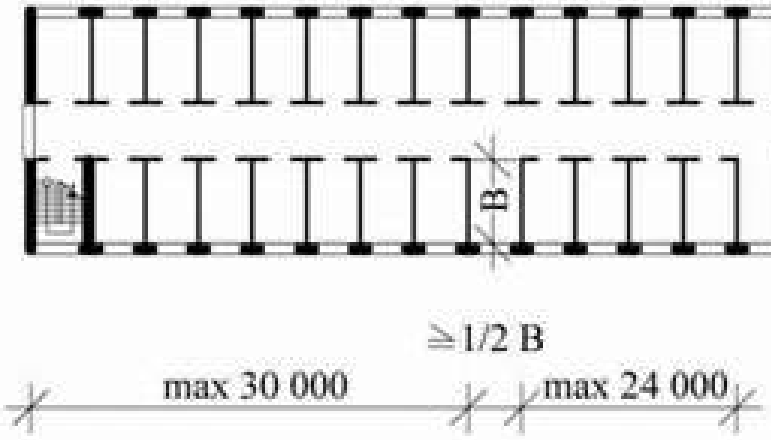
LIGHTING TECHNIQUES DEPEND ON MAXIMUM LENGTH OF CORRIDORS



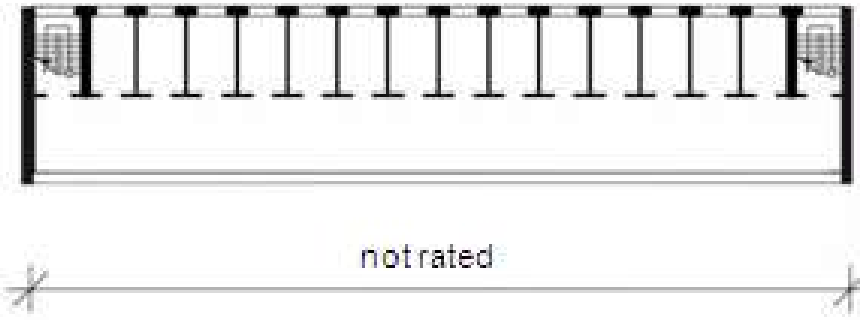
for two-sided buildings and lighting on both sides of the building



for dead-end buildings and lighting from one end of the building



when installinglight pockets



for one-way buildings

VERTICAL COMMUNICATIONS

Vertical communications: **stairs, ramps, elevators, escalators** provide communication between rooms and horizontal communications located at different levels.


BERGEN KUNSTMUSEUM

STAIRS (стЕаз)

Stairs and stairwells are divided into:

- 1 – internal, placed in stairwells;
- 2 – internal open;
- 3 – external open;

- ***conventional staircases:***
  - Л1 – with glazed or open openings in the exterior walls on each floor;
  - Л2 – with natural light through glazed or open openings in the coating;

- ***smoke-free stairs***
  - Н1 – with the entrance through the outdoor air zone through balcony;
  - Н2 – with air supply to the stairwell in case of fire;
  - Н3 – with the entrance to the stairwell from the floor through the tambour airlock with air supply (permanent or in case of fire).

The height of a public building floor is usually 3.3 m; 3.6 m; 4.2 m. Stairs are designed according to this calculation. Stairs can be one-, two-, three - and four-step. The staircase consists of a tread and a riser. Tread width is 300 mm, riser height is 150 mm.

The width of a stairs flight in public buildings must be:

• 1,35 m — for the main staircases leading to the rooms for people;

• 1,2 m — for escape staircases;

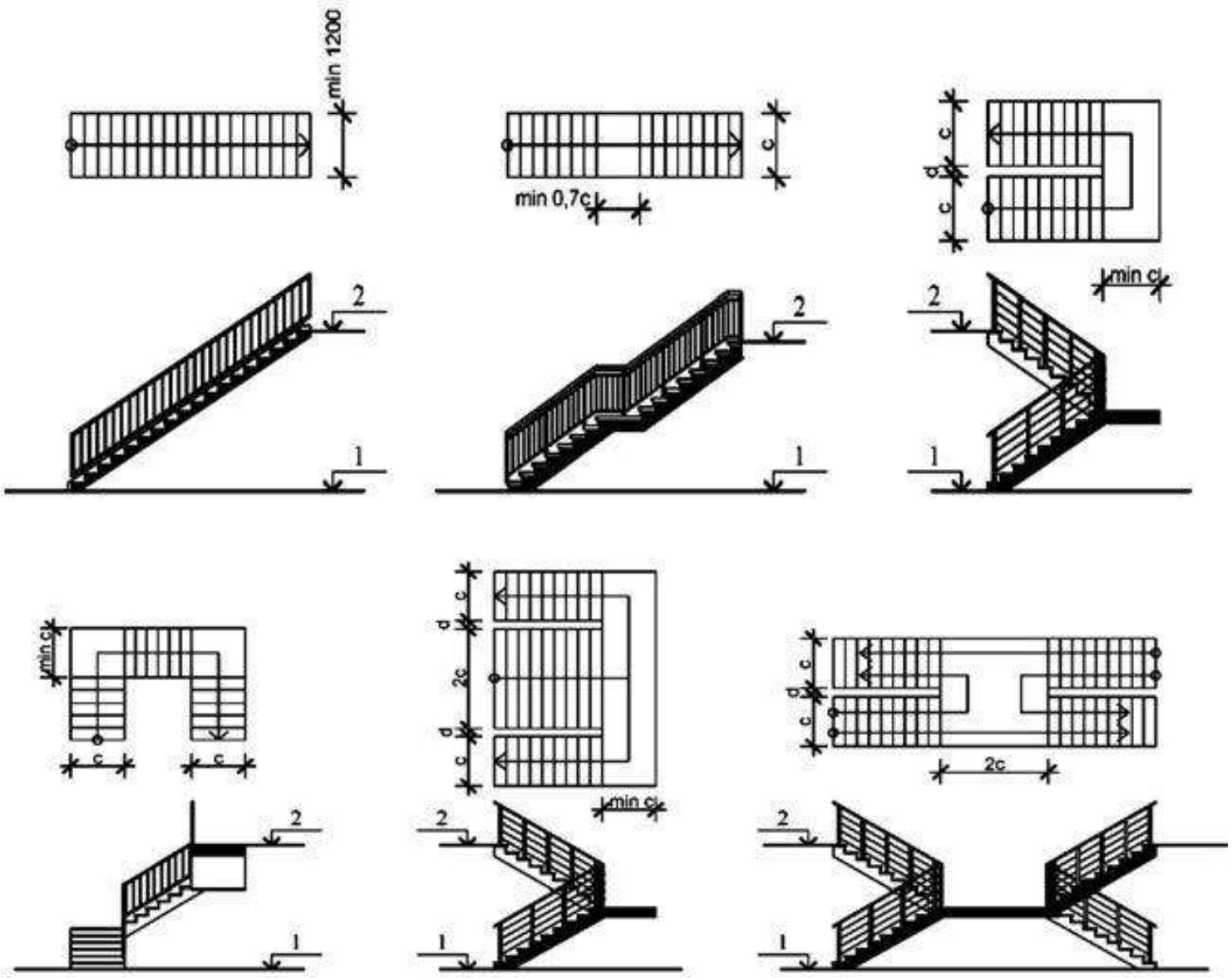
• 0,9 m — for stairs leading to a room with up to 5 people at the same time.

The width of the staircases must be at least the width of the stairwell, the intermediate platform between the stairwell is 1 m.

The slope of staircases in aboveground floors should be no more than 1 : 2. The slope of stairs leading to the basement floors, to the attic, not for evacuation of people, should be 1 : 1.5. The height of staircases should be at least 900 mm.

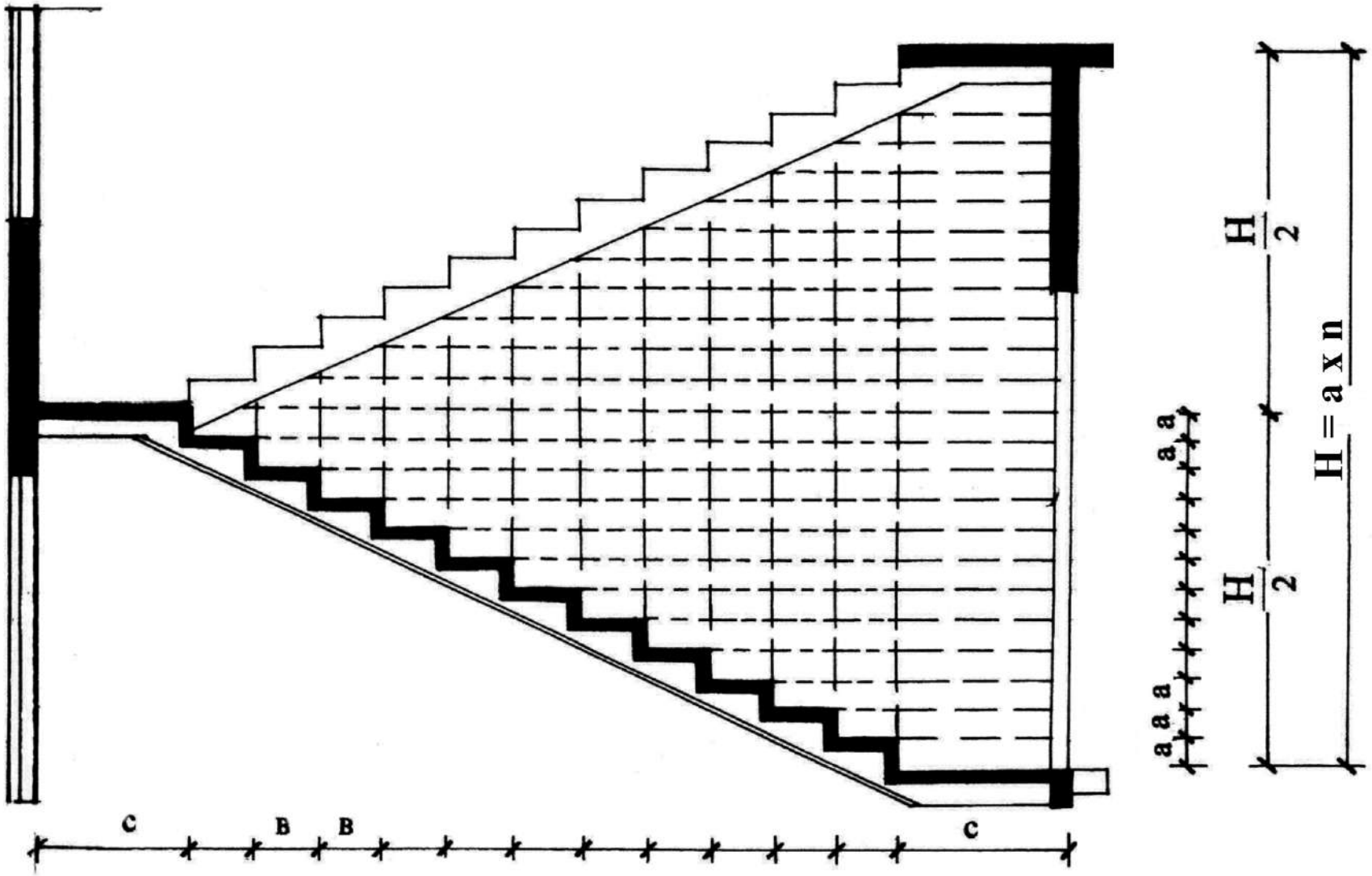
The number of ascents in one flight of stairs between the platforms must be at least three and no more than 16.

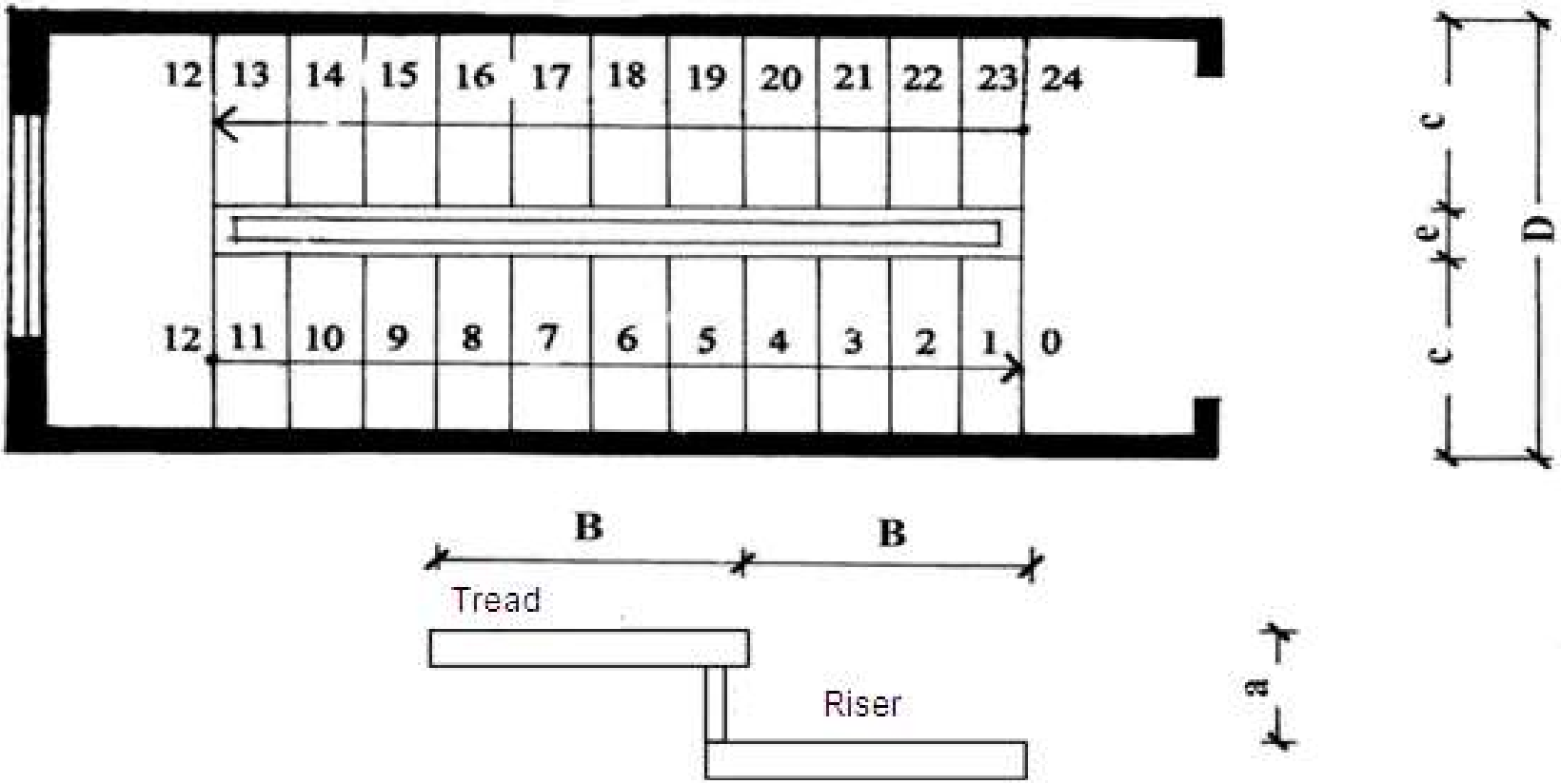
Stairwells should be designed with natural light through openings in the exterior walls, in buildings up to three floors high, it is possible to use overhead lighting through a light lantern. In addition, it is necessary to ventilate the stairwell -1.2 m2 within each floor.



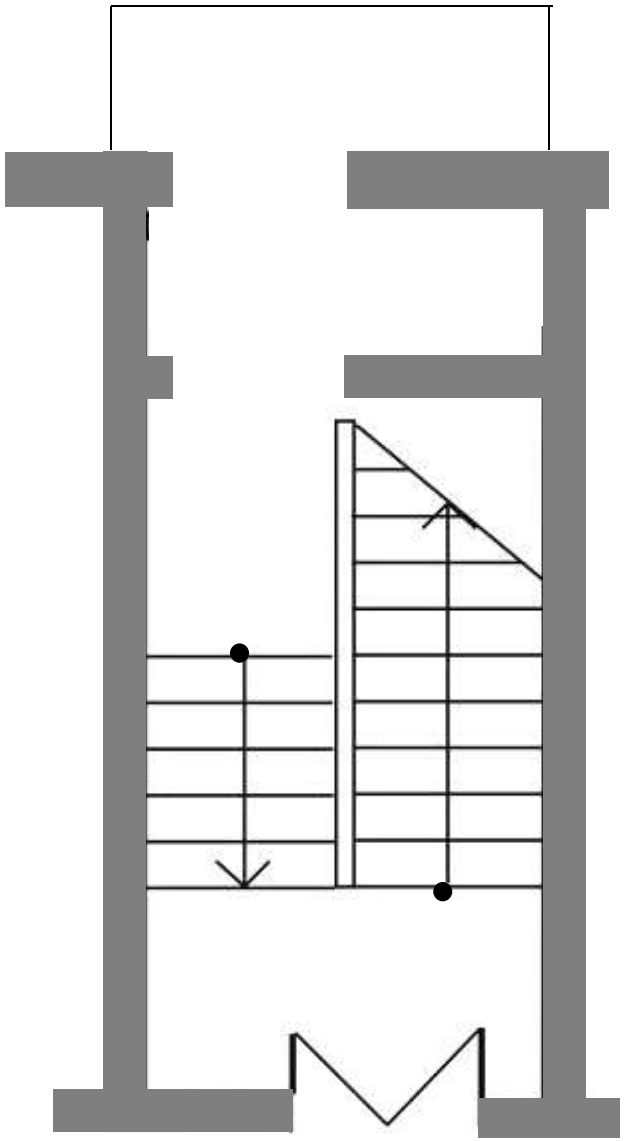
Types of open stairs in public buildings:
a — one — step; b — two — step; c — two-step with a turn; d-three-step; d-branched three-step; e — branched four-step

GEOMETRIC CONSTRUCTION OF STAIRS

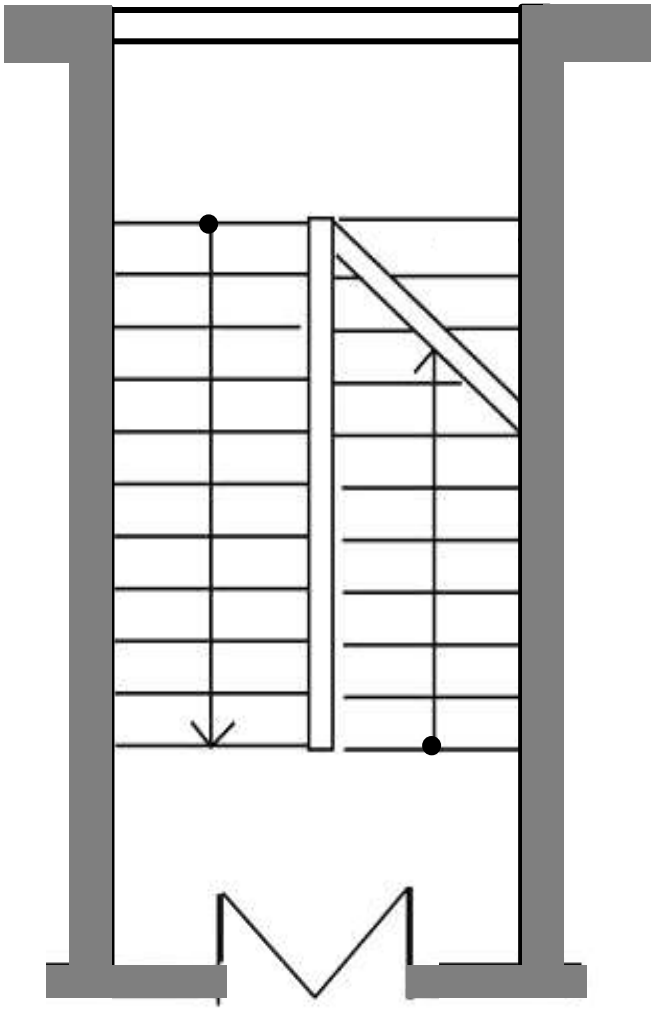



12 13 14 15 16 17 18 19 20 21 22 23 24
12 11 10 9 8 7 6 5 4 3 2 1 0
c
e
c
D
B
B
Tread
Riser
a

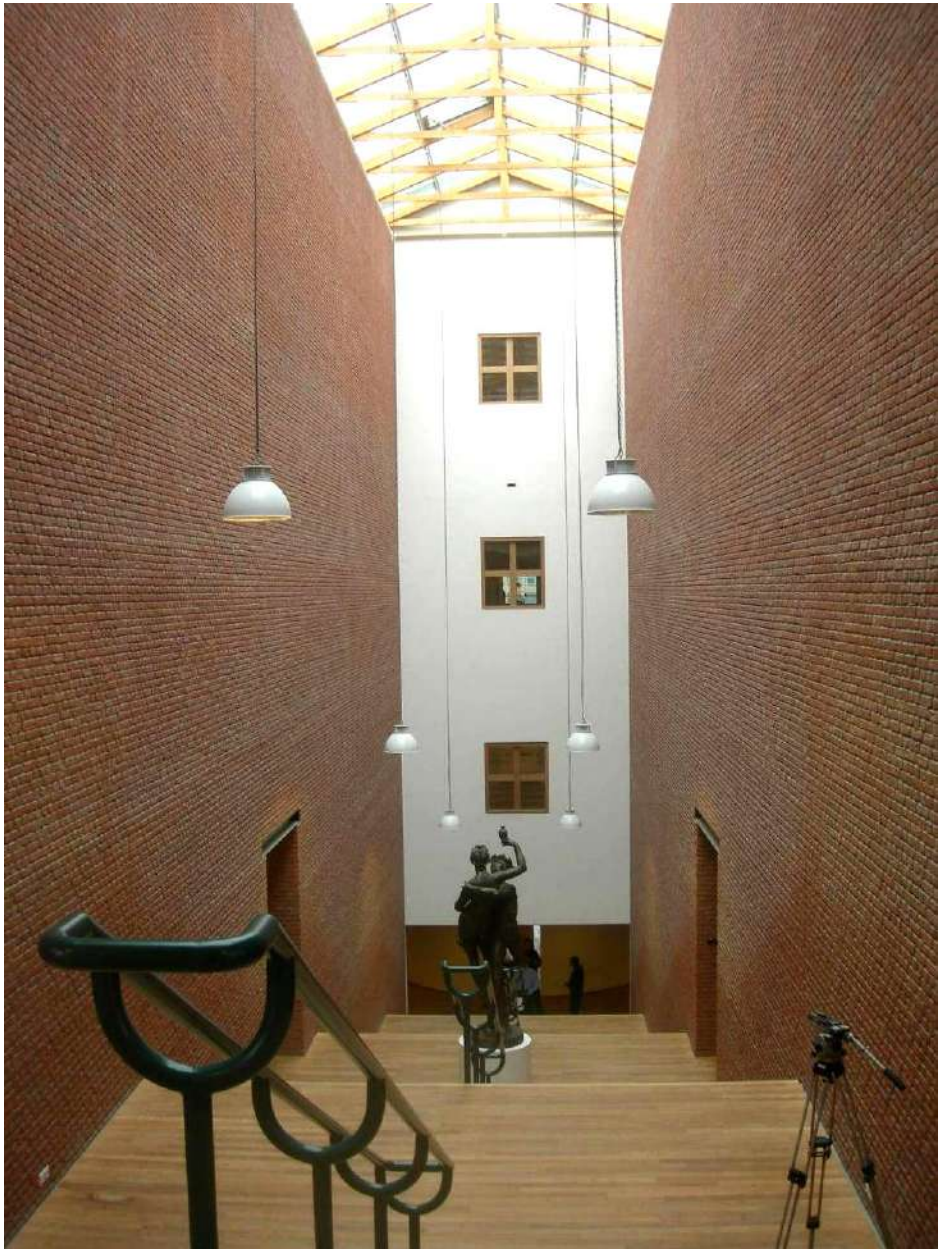
1st floor plan



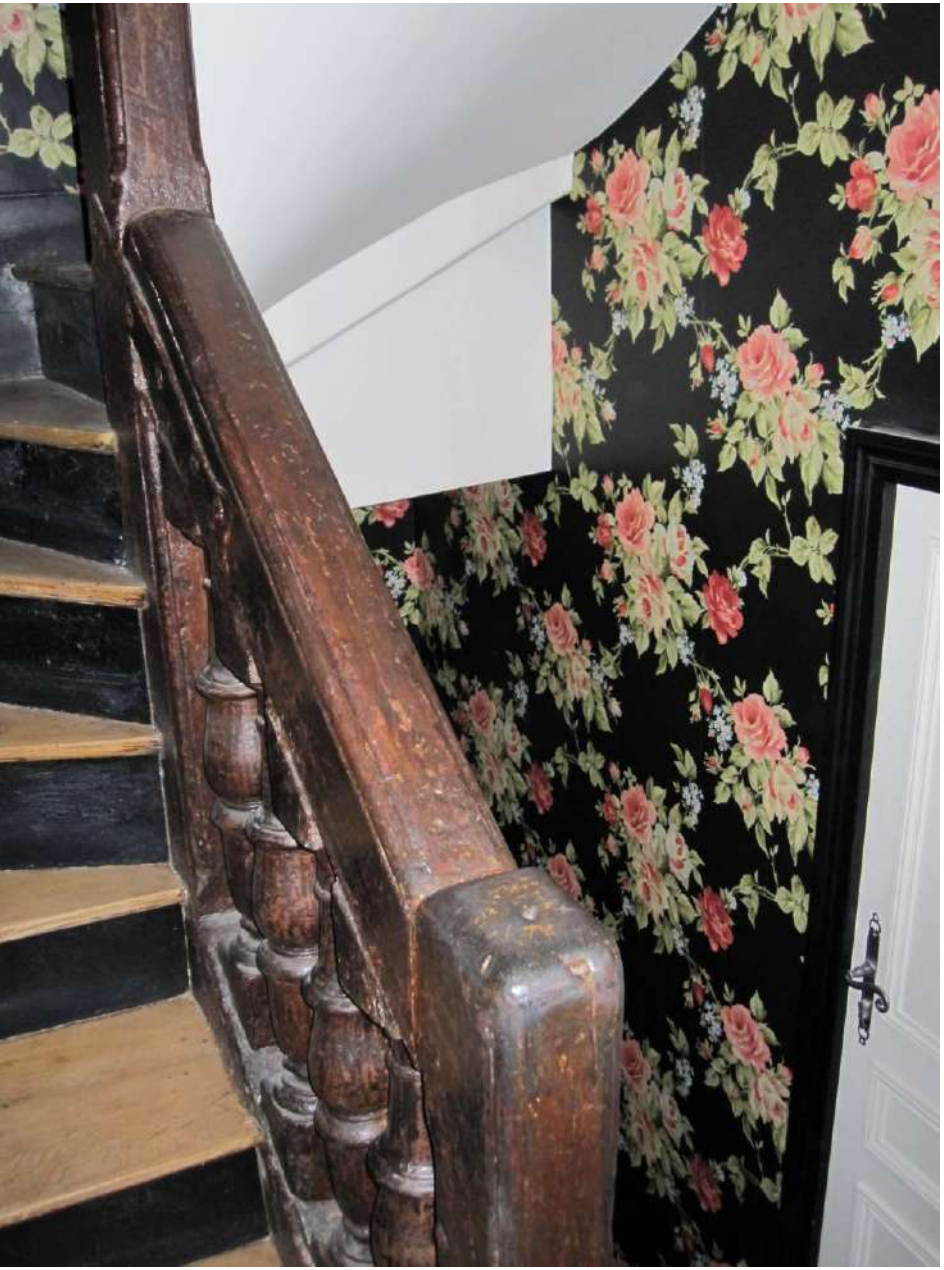
Typical floor plan



Leopold Museum in Vienna



The Bonnefanten Museum in Maastricht




HOTEL

SMOKE-FREE STAIRS

Smoke-free stairwells must be designed in buildings above **28 m**, and the height of the building is taken as the height from the planning mark of the ground to the mark of the window sill of the upper floor of the building.

Types of smoke-free stairwells:

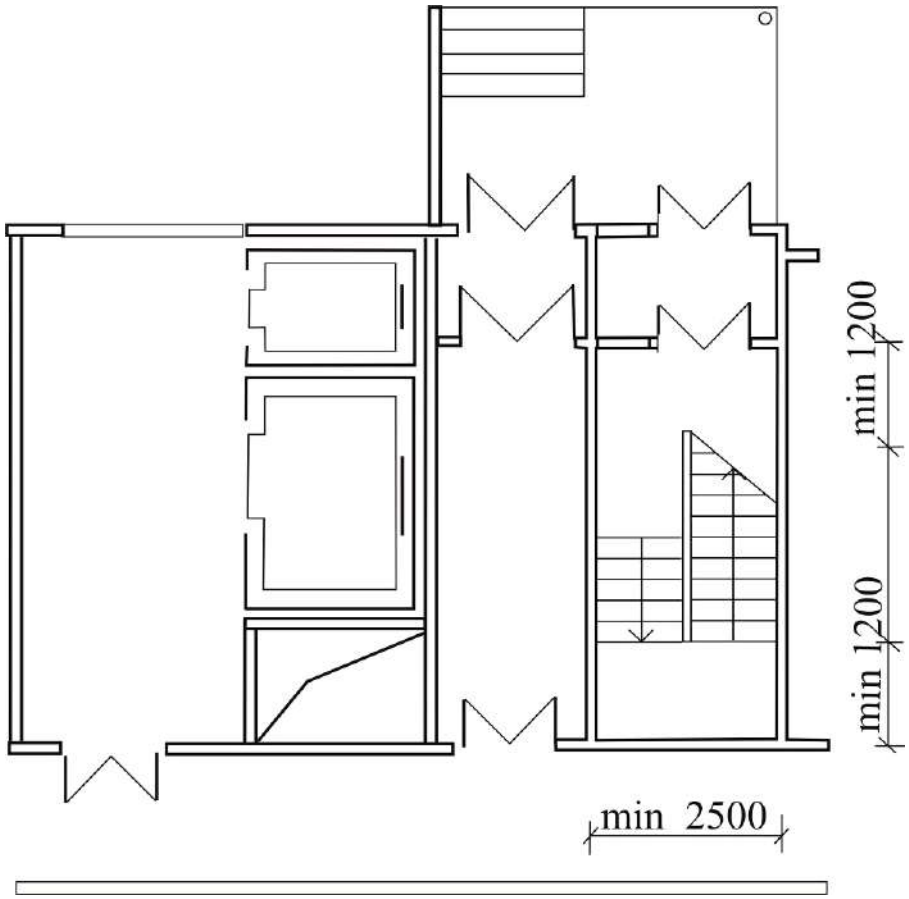
H1 - with the entrance to the stairwell from the floor through the outdoor air zone through balcony;

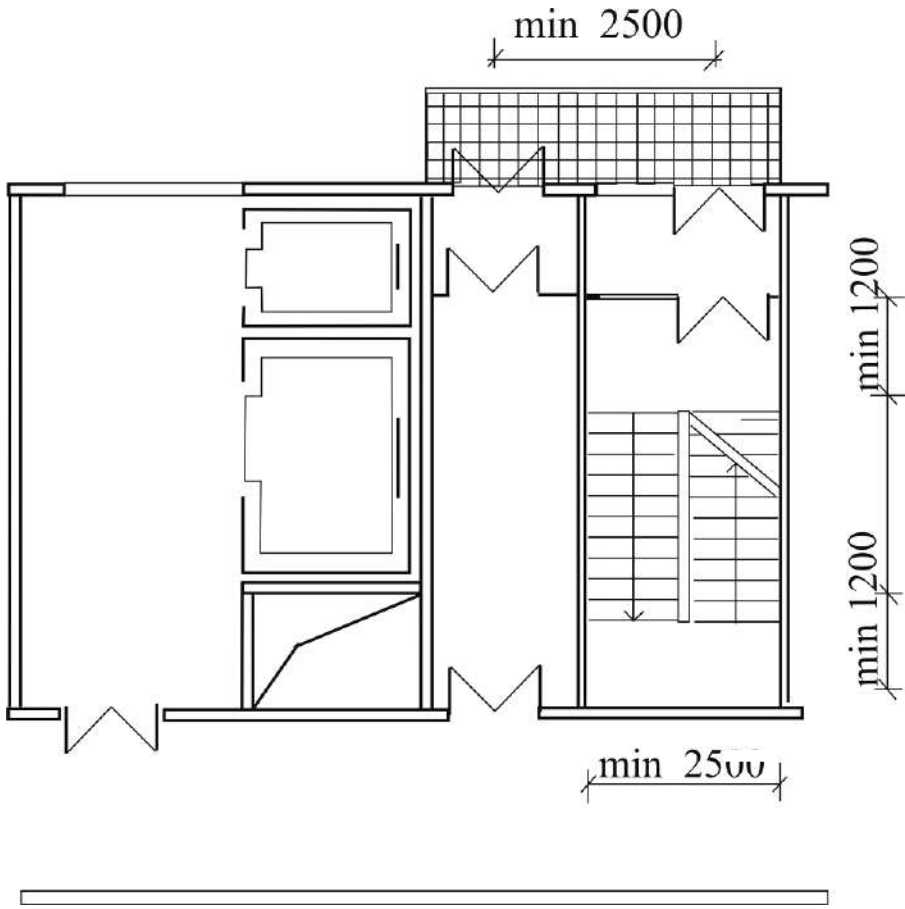
H2 - with air supply to the stairwell in case of fire;

H3 - with the entrance to the stairwell from the floor through the vestibule-airlock with air supply (permanent or in case of fire).

One of the two stairwells (or 50% of the stairwells with a larger number) should be smoke-free type 1-with a transition through the outdoor air zone. The remaining stairwells should be designed as Smoke-free type 2 or type 3 stairwells.

Smoke-free stairwells should only have access directly to the outside. Exits to Smoke-free stairwells must not be designed through floor-by-floor elevator halls.





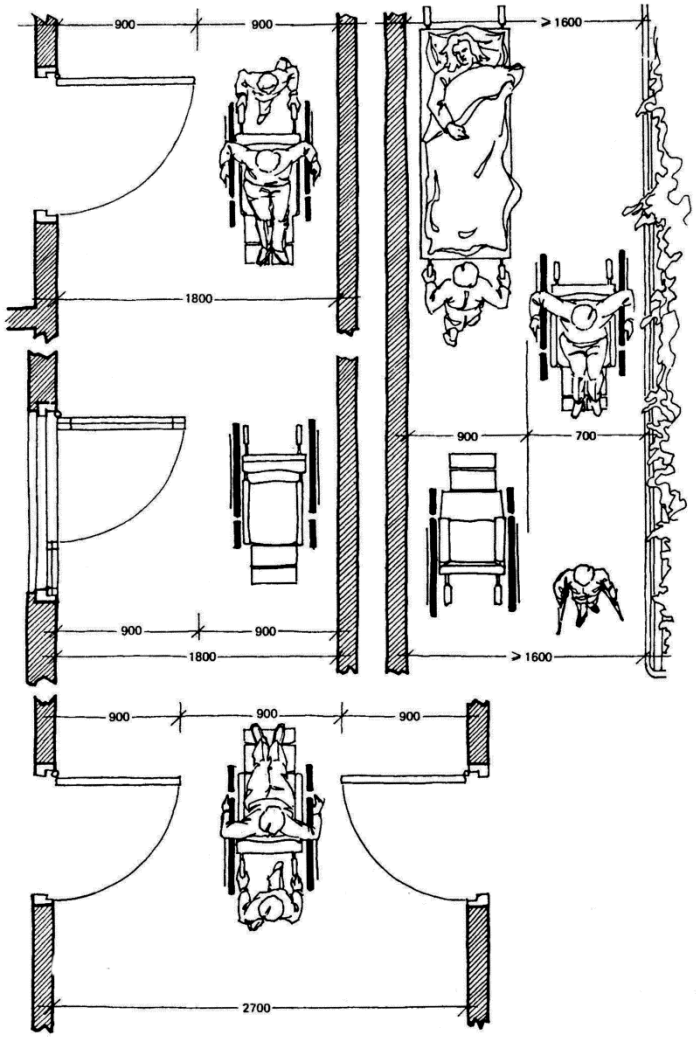
Smoke-free stairwell type 1 with a passage through the outdoor air zone through balcony

RAMPS

Ramps are flat slope structures without steps.

Slope of ramps on the way of people movement:

- 1 : 6 — inside the building;
- 1 : 8 — outside;
- 1 : 20 — on the way of wheelchair users movement inside and outside the building and in hospitals.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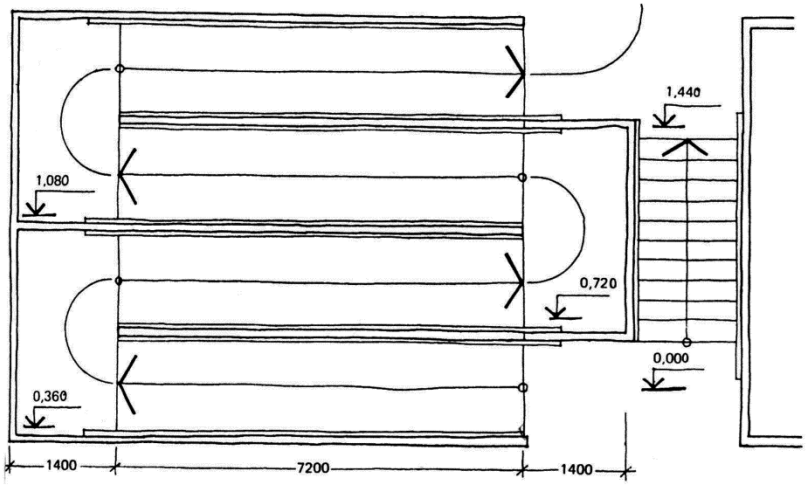
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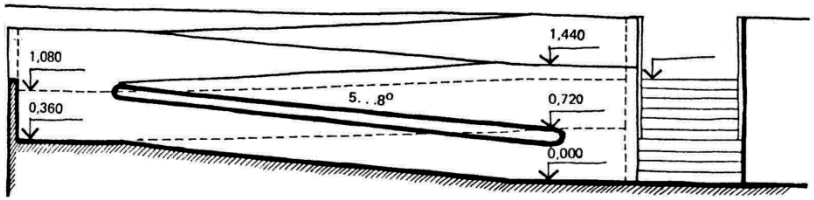
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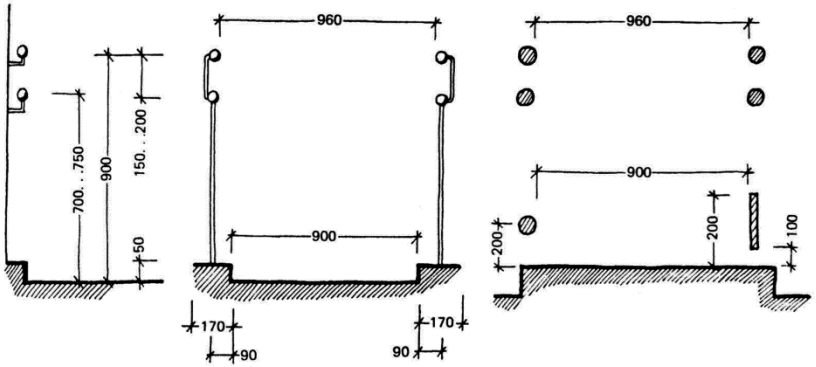
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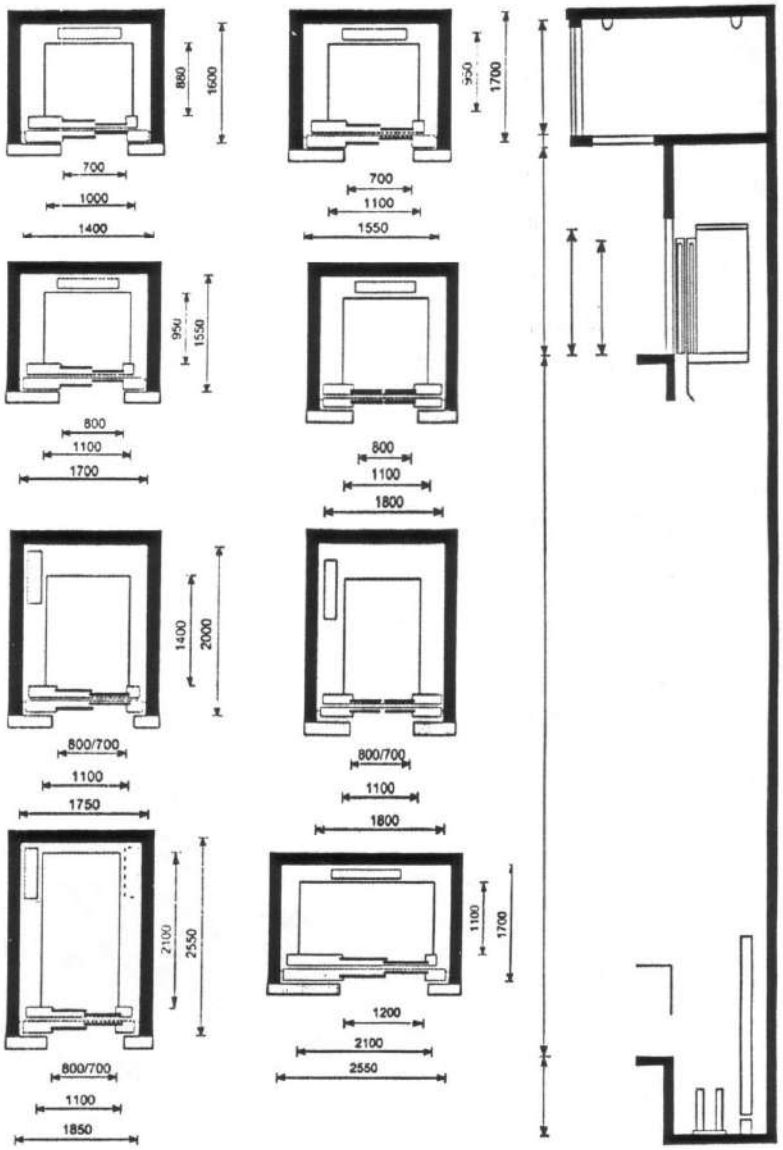
ELEVATORS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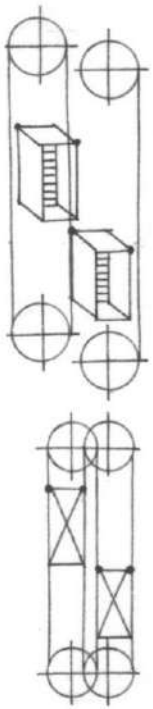
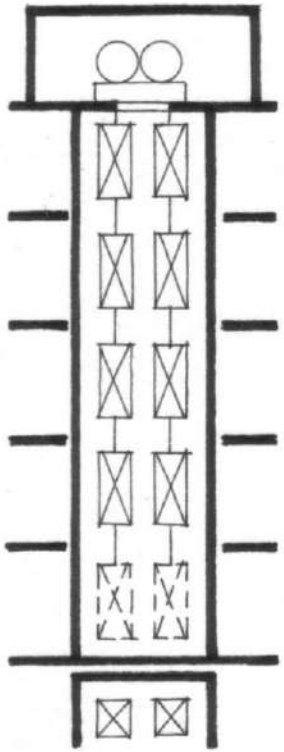
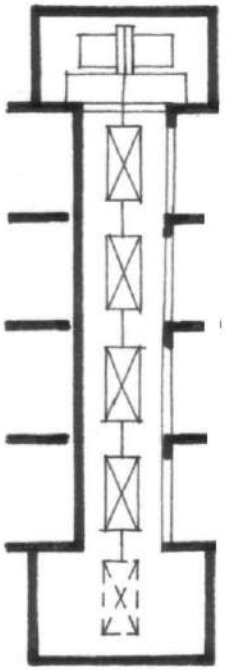






Passenger elevators are provided in public buildings in the following cases:

— in newly designed public buildings-if the floor of the upper floor is 9.9 m or more from the level of the first floor;- in newly designed sanatoriums, in hotels, tourist bases and motels of the category "three stars" - at the level of the floor of the upper floor of 6.6 m or more from the level of the first floor;

— in the buildings of hospitals, clinics, sanatoriums or social service institutions, as well as in hotels and motels of various categories“ five stars" and “ four stars“— if there are two floors or more.

It is allowed not to provide for the installation of an elevator in the case of the superstructure of an existing building with an attic floor when the technical part of the project is already based.

Hospital elevators should be provided:

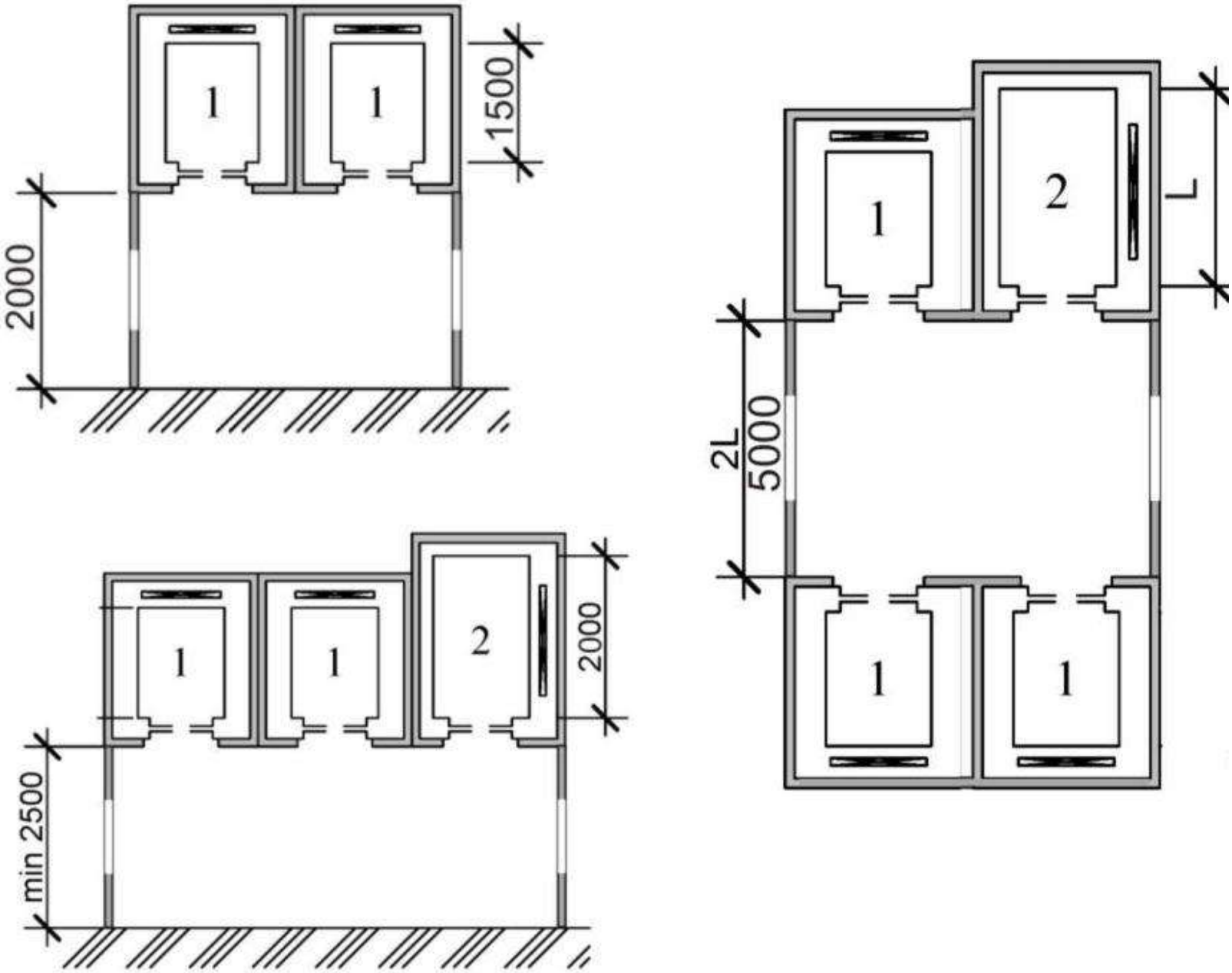
— in buildings of hospitals, maternity hospitals, hospices, rehabilitation centers, boarding houses for the disabled and elderly, in sanatoriums with the location of tent, residential and other departments (premises) above the first floor, where patients can be transported on a wheel-chair.

The number of elevators should be taken by calculation, but not less than two; in this case, one of the elevators is allowed to take cargo and passenger. One of the elevators must have a depth or width of the cabin at least 2.1 m, width-not less than 1.1 m, width of the doorway — not less than 0.85 m, to allow the use of an elevator to transport the patient on an ambulance stretcher. If the doorway is provided on the wide side of the elevator, its should be shifted from the center to the side and have a width of 1200 mm.

The outputs from the passenger elevators are required to design through the **elevator lobby**. The width of the elevator hall must be:

— for single-row elevators: not less than 2.0 m - for the depth of the elevator cab up to 1500 mm; not less than 2.5 m - for the depth of the elevator cab from 1.5 to 2.0 m; not less than 1.3 m-for the depth of the elevator cab over 2.0 m;

— in a two-row arrangement with a common elevator hall —not less than twice the smallest depth of the cabin, but not less than 5.0 m. In all buildings whose premises located above the first floor are intended for use by disabled people on the roof-in wheelchairs, elevators should be provided, the cabins of which should have dimensions of at least: width 1.5 m; depth 1.7 m; width of the doorway 0.95 m.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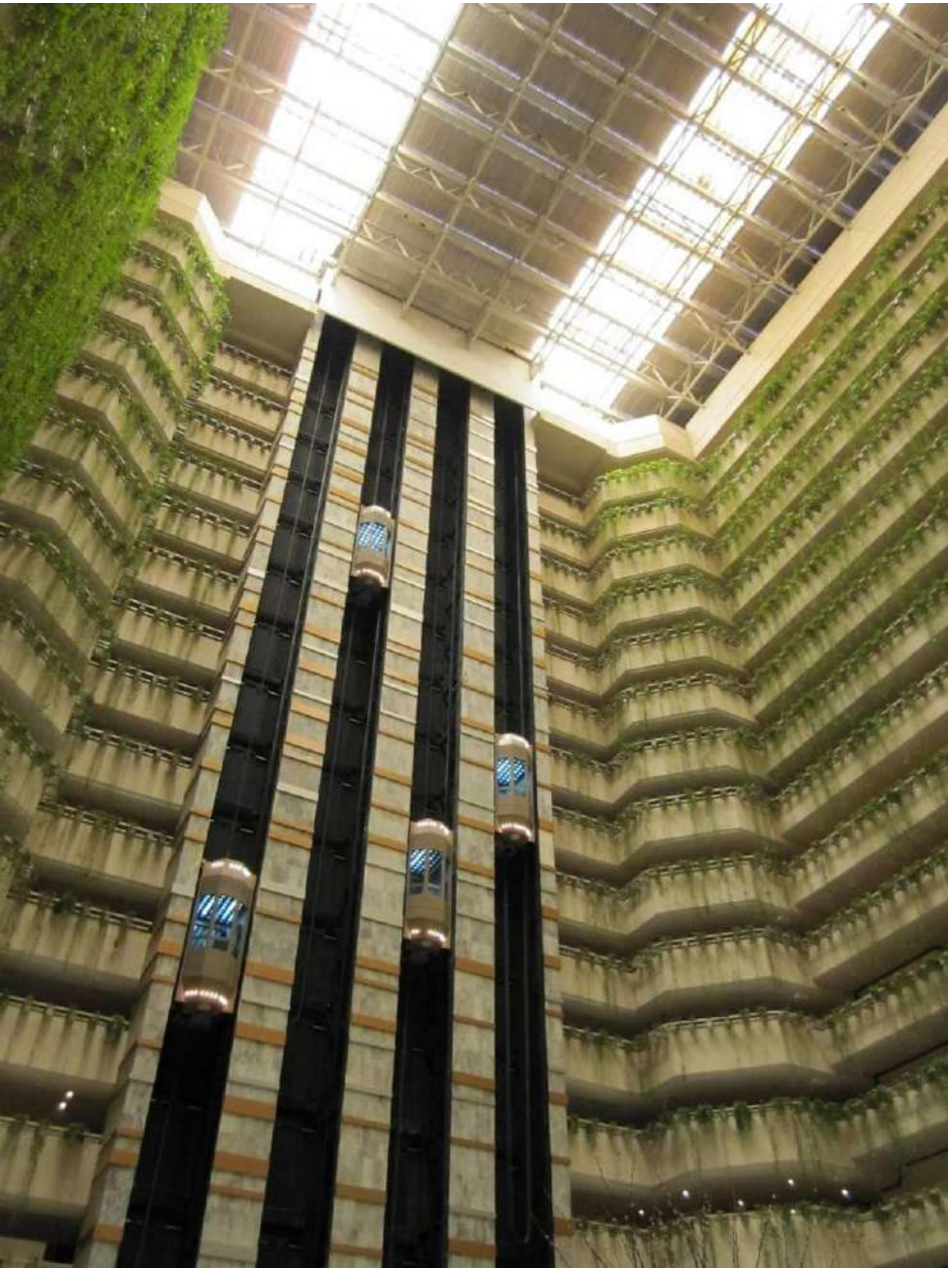
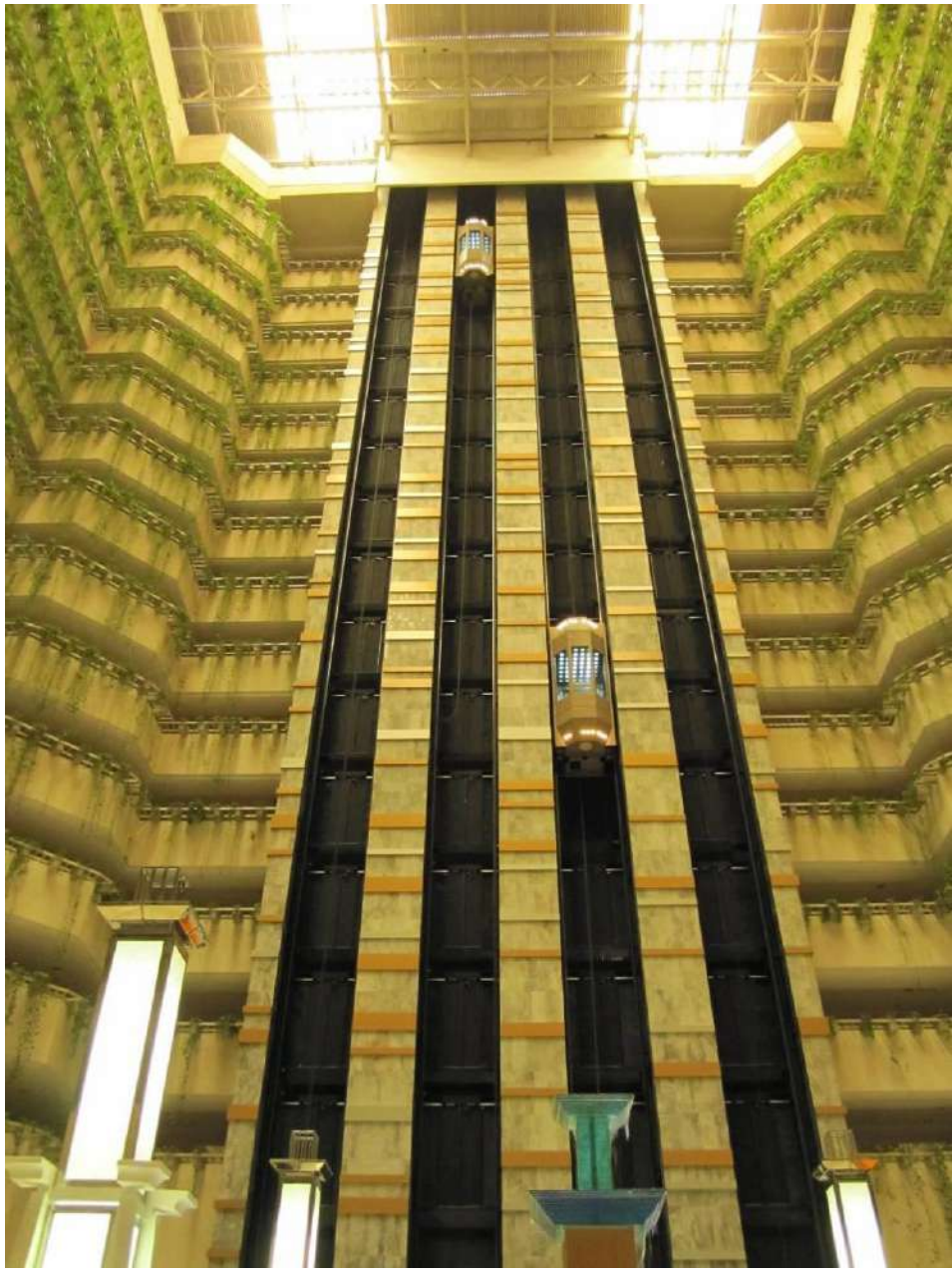




Structurally, elevators include the construction part: elevator the shaft and the engine room — and the mechanical part: the lifting mechanism, the cabin and the counterweight. The enclosing structures of elevator shafts can be made of bricks, prefabricated and monolithic reinforced concrete structures, and metal. Currently, elevators with both the upper and lower location of the machine room are performed. Elevator shafts and machine rooms should **not be adjacent to a room** with a permanent presence of people.

Distance from the door of the most remote room to the door the nearest passenger elevator should not be more than 60 m. Different elevator layouts are possible: single-row, multi-row, perimeter, island.

In the basement and basement floors, the exits from the elevator shafts should be provided through the vestibule-locks with air supply in case of fire.

It should be remembered that when calculating escape routes, elevators are **not taken into account.**

ESCALATORS

Escalators are inclined moving stairs with a large capacity. There are two types: mounted on smoke breaks and on separate foundations. The height of the steps of the escalator200 mm, width 400 mm, slope 30°. Escalators should be provided in accordance with the requirements established for internal open stairs.

Travolator — a moving sidewalk, a moving stepless path that allows you to speed up or facilitate the movement of pedestrians.

Escalators and travelators are widely used at metro stations, in railway station buildings of all types of transport, at airports, as well as in large shopping centers, business centers and exhibition halls for the organization of communications.

LECTURE 5.

FIRE SAFETY REQUIREMENTS. ESCAPE ROUTES

The buildings must be provided with structural, space-planning and engineering solutions that provide in the event of a fire:

— the possibility of evacuating people, regardless of their age and physical condition, outside to the territory adjacent to the building (hereinafter — outside) before the threat to their life and health due to the impact of fire hazards;

— the possibility of saving people;

— the ability to access the personnel of fire departments and supply fire extinguishing equipment to the fire center, as well as to carry out measures to save people and property;

— non-proliferation of fire on nearby buildings, including the collapse of a burning building;

— limitation of direct and indirect material damage, including the contents of the building and the building itself, with an economically reasonable ratio of the amount of damage and the cost of fire protection measures, fire protection and its technical equipment.

The fire resistance indicator is the fire resistance limit, the fire hazard of the structure is characterized by its fire hazard class. The limit of fire resistance of building structures is set by the time (in minutes) of the occurrence of one or several signs of limit states normalized for this structure: loss of load-bearing capacity; loss of integrity; loss of thermal insulation ability.

Class of structural fire hazard of buildings, structures and fire compartments-classification characteristics of buildings, structures and fire compartments, determined by the degree of participation of building structures in the development of fire and the formation of fire hazards (C...).

According to the fire hazard, building structures are divided into four classes: non-flammable; low-flammable; moderate fire hazard; fire hazard.

Buildings are divided by degrees of fire resistance, classes of structural and functional fire hazard. The degree of fire resistance of a building is determined by the fire resistance of its building structures.

There are five degrees of fire resistance of buildings and structures:

I — buildings with load-bearing and enclosing structures made of natural or artificial stone materials, concrete or reinforced concrete with the use of sheet and plate non-combustible materials;

II — with the same requirements for load-bearing and enclosing structures as for buildings of the first degree of fire resistance, unprotected steel structures are allowed to be used in the coatings;

III — buildings with load-bearing elements made of unprotected steel structures or made of wood with fire-resistant treatment, for floors it is allowed to use wooden structures protected with plaster; the coating elements are not subject tor equirements for fire resistance limits, but the elements of the attic coating made of wood are subjected to fire-resistant treatment;

IV — buildings with load-bearing and enclosing structures made of wood and other combustible and non-combustible materials subjected to fire-resistant treatment; the requirements for the coating elements are the same as for buildings of the third degree of fire resistance;

V — buildings whose load-bearing structures are not subject tor equirements for fire resistance limits and fire propagation limits.

The class of functional fire hazard of a building depends on its functional purpose and the features of the technological processes placed in it:

F 1 — buildings and structures for permanent residence and temporary (including round-the-clock) stay of people, the contingent of people in them may have different ages and physical condition, these buildings are characterized by the presence of sleeping quarters;

F 2 — entertainment and cultural and educational institutions (the main premises in these buildings are characterized by a mass stay of visitors at certain periods of time);

F 3 — Public service enterprises ;

F 4 — educational institutions, scientific and design organizations, management institutions (the premises in these buildings are used during the day for some time, as a rule, there is a permanent contingent of people of a certain age and physical condition who are accustomed to local conditions);

F 5 — production and warehouse buildings, structures and premises (for premises of this class, the presence of a permanent contingent of employees is characteristic, including around the clock).

ESCAPE ROUTES

Escape routes must ensure the safe evacuation of all people in the premises of buildings through evacuation exits. Exits are evacuation exits if they lead from the premises:

— first floor— directly outside or through the lobby, corridor, stairwell;

— any floor, except the first, — in the corridor leading to the stairwell, or on it directly; in this case, the stairwell must have an exit directly outside or through the lobby, separated from the adjacent rooms by partitions with doors;

— to an adjacent room on the same floor, provided with the exits specified in the first and second paragraphs.

Parts of the building of various functional fire hazards, separated by fire barriers, should be provided with independent evacuation exits. From each floor of the building, it is necessary to provide at least two evacuation exits located dispersed.

Exits that do not meet the requirements for evacuation exits can be considered as emergency exits and are intended to improve the safety of people in the event of a fire.

Emergency exits are not taken into account when evacuating in the event of a fire. Emergency exits also include:

— access to an open balcony or loggia with a blind wall at least 1.2 m from the end of the balcony (loggia) to the window opening or at least 1.6 m between the glazed openings opening onto the balcony;

— exit to an open passage with a width of at least 0.6 m, leading to an adjacent section of a building of class F1. 3 or to an adjacent fire station compartment through the air zone;

— access to the balcony or loggia, equipped with an external staircase connecting the balconies or loggias on the floor;

— exit directly to the outside of the premises with a mark of pure sex not less – 4,5 m and not more than +5.0 m through the window or the door with dimensions not less than 0.75 × 1.5 m, as well as through the hatch size no less than 0.6 × 0.8 m; the output through the pit should be equipped with a ladder in the pit, and out through the hatch — ladder in the room;

– access to the roof of the building of I, II and III degrees of fire resistance through a window, door or hatch.

Escape routes must have **natural light**.

Since there must be at least two emergency exits from each floor according to the fire protection requirements, it is always necessary to design at least two stairs from each floor of a public building.

The height of the horizontal sections of the escape routes in the light should be be at least 2 m, the width of the horizontal sections of the evacuation routes and ramps should be at least:

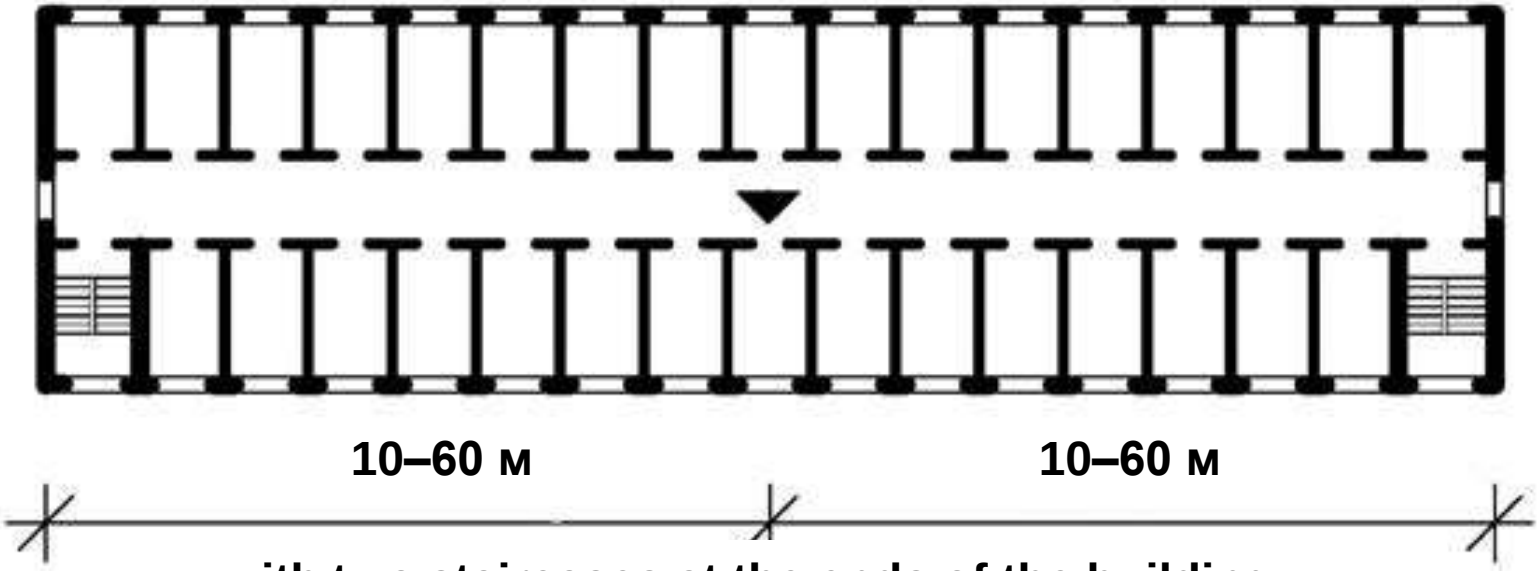
- 1.2 m-for general corridors, through which no more than 15 people can be evacuated from the premises of class F1, from the premises other classes of functional fire hazard — no more than50 people;
- 0.7 m-for passageways to single workstations;
- 1.0 m — in all other cases.

In any case, the escape routes should be so wide that, given their geometry, it is possible to carry astretcher with a person lying on it without any difficulty.

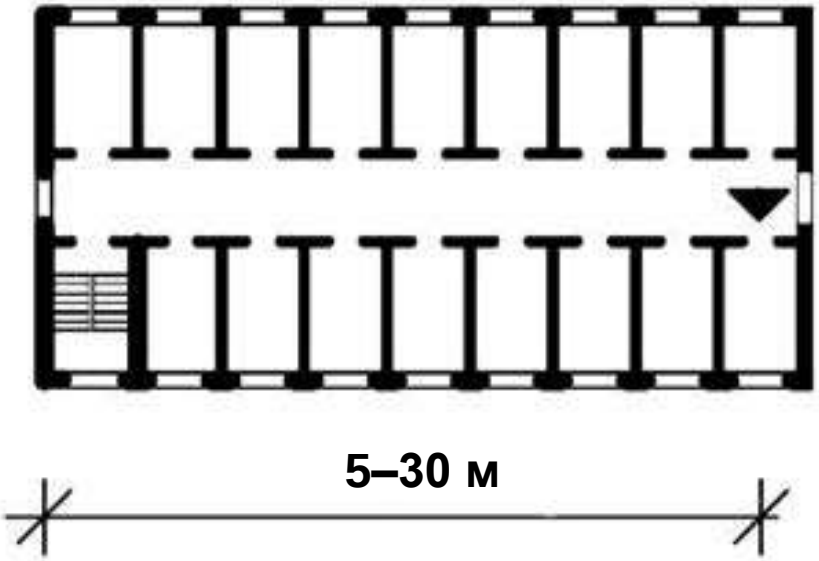
Distance from the doors of the most remote rooms of public buildings to the exit to the stairwell

Class Constructive Fire Department Building hazards	Distance, m, at the density of the human flow during evacuation *, people/m				
	Up to 2	St. 2 to 3	St. 3 to 4	St. 4 to 5	St. 5
A. From the rooms located between the stairwells or external outputs					
C0 *	60	50	40	35	20
C1	40	35	30	25	15
C2, C3	30	25	20	15	10
B. From rooms with exits to a dead-end corridor or hall					
C0 *	30	25	20	15	10
C1	20	15	15	10	7
C2, C3	15	10	10	5	5

*** The ratio of the number of evacuees from the premises to the area of the escape route**



with two staircases at the ends of the building



when leaving the room in a dead-end corridor

Maximum permissible distance from the most remote point of the room to the nearest evacuation exit

Rooms of auditoriums, assembly halls and conference halls, meeting rooms and hall rooms of sports facilities should be placed in accordance with the capacity of no more than the floor indicated in the table:

Number of seats in the auditorium or hall	Floor limit Placement of the audience or hall	Structural fire hazard class of the building, not lower than
Up to 300 From 301 to 600 601 or more	16 th 5 th 3 rd	C0
До 300 " 600 " 600	3rd 2nd 1st	C0 C1 C2
До 100	1-й	C1-C3

EVACUATION BY STAIRS AND STAIRWELLS

Stairs on escape routes are of three types: internal closed in the stairwell; internal open and external open.

The width of the flight of stairs intended for the evacuation of people, including those located in the stairwell, must be be not less than the estimated width or not less than the width of any evacuation exit (door) to it, but, as a rule, not less than:

- 1.35 m-for buildings of class F 1. 1;
- 1.2 m - for buildings with the number of people on any floor, except the first, more than 200 people ;
- 0.7 m - for stairs leading to single work stations;
- 0.9 m — for all other cases.

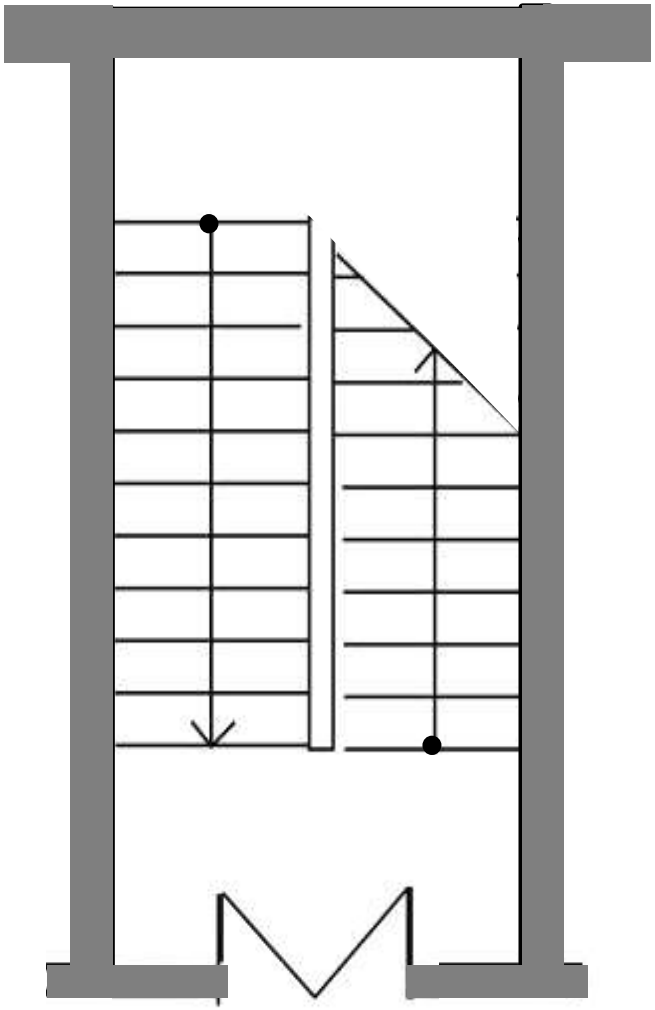
The slope of the stairs on the escape routes should be, as a rule, no more than 1 : 2, the width of the tread-not less than 25 cm, and the height of the step-not more than 22 cm. The slope of open stairs for access to single work stations can be increased to 2 : 1. No spiral staircases are allowed on the escape routes.

Stairwells should have an exit to the outside area adjacent to the building directly or through the lobby, separated from the adjacent corridors by partitions with doors. When setting up evacuation exits from two stairwells through a common lobby, one of them, in addition to the entrance to the lobby, must have an exit directly to the outside.

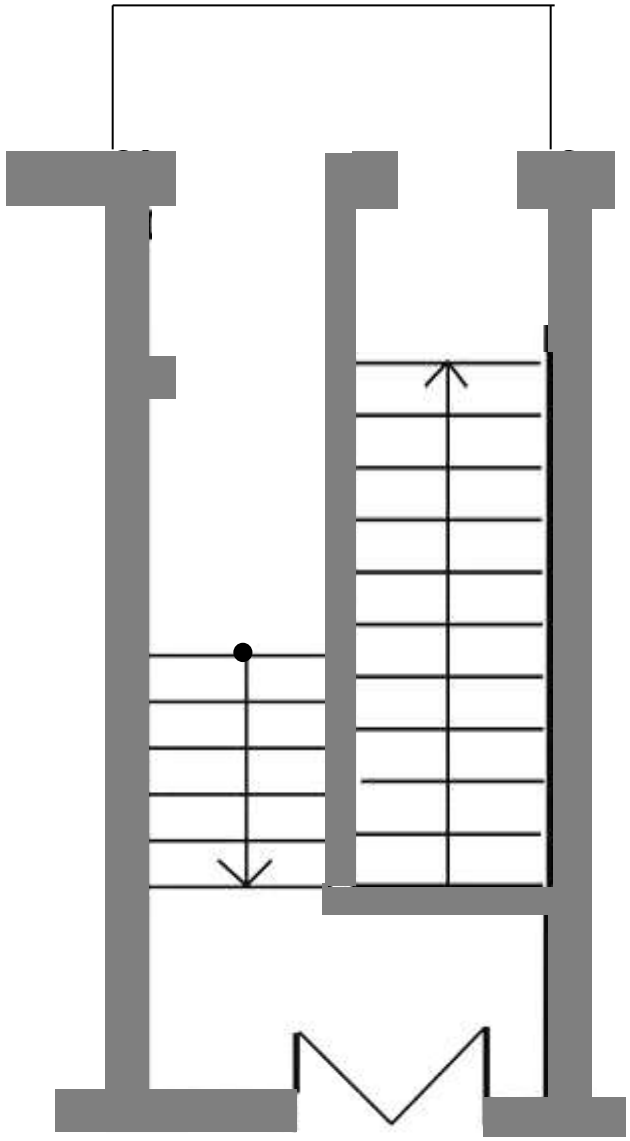
EVACUATION FROM THE BASEMENT AND BASEMENT FLOORS OF THE BUILDING

Exits from basements or ground floors should be viewed directly outside, separated from the general stairwells of the building. Stairs leading from the first floor to all subsequent floors cannot lead to the basement. In the event that the stairwell is intended for the evacuation of people both from the above-ground floors and from the basement or basement, it is necessary to provide a separate exit from the basement or basement directly to the outside, separated by a blind fire barrier to the height of one floor. This type of ladder is called a ladder with a cut.

The basement floor plan



1st floor plan



LADDER WITH A CUT

It is allowed to provide separate stairs for communication between the basement or basement floor and the first floor.

These stairs are **not taken** into account when calculating escape routes from the basement or basement.

At least two evacuation exits must have basement and basement floors with an area of more than 300 m2 or designed for the simultaneous stay of more than 15 people. From the premises of the basement floor with an area of up to 300 m2, **one evacuation exit** is required, if the number of people constantly staying in the basement is no more than 15 people. Second evacuation center the exit can be arranged through a hatch measuring 0.6 × 0.8 m with a vertical ladder to the pit or through a window of 0.75 × 1.5 m with an exit device. From the premises of the basement floor with an area of more than 300 m2, it is necessary to provide, in addition to one exit, another exits at the rate of one for each subsequent(over 300 m2) 2000 m2.

LECTURE 6.

SCHOOL BUILDINGS

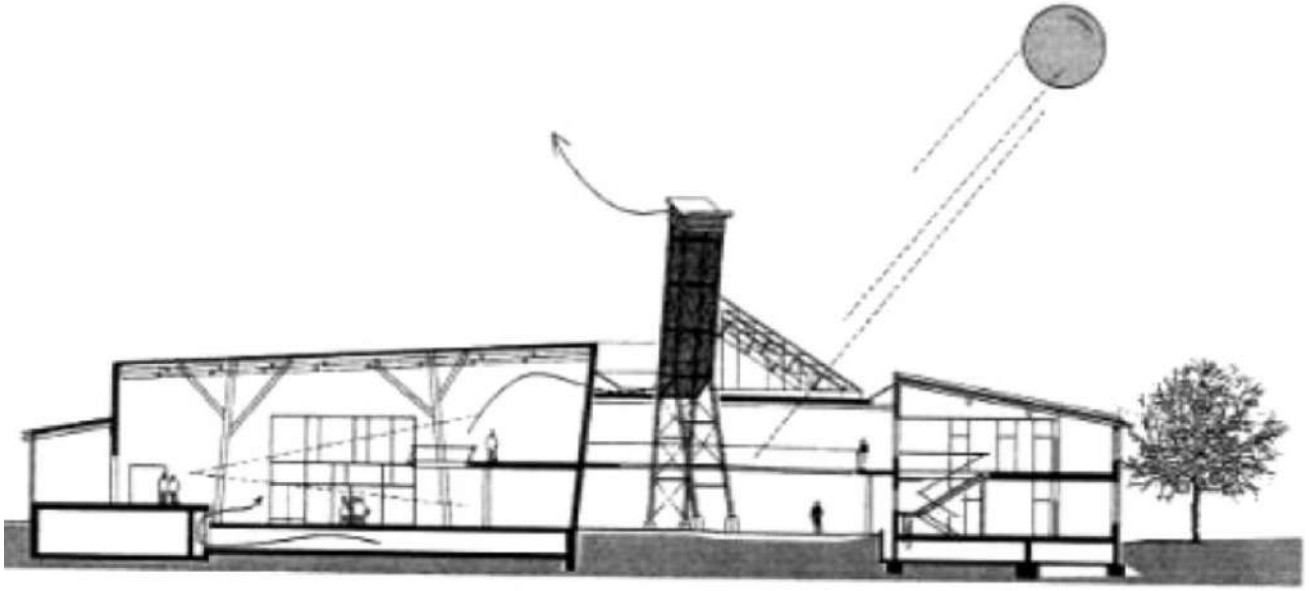
There are the following types of education institutions :

- secondary education schools;
- gymnasiums;
- lycées;
- colleges;
- boarding schools;
- specialized schools and boarding schools for the in-depth training of children;
- health and sanatorium-forestry schools;
- Special schools for children with physical and mental disabilities.

- General education institutions include primary, primary and secondary schools; secondary school with in-depth study of individual subjects; gymnasium and lyceum.

- According to the level of education, general education schools have three stages of study:
- Stage I includes students in grades 1-4;
- Stage II includes students in grades 5-9;
- Stage III includes students in grades 10-11.

School in Donau City, Vienna, Archpriest H. Hollein



School building in Gelsenkirchen-Bismarck, Arch. P. Hübner

MASTERPLAN OF SCHOOL BUILDINGS

Secondary education schools are located in the micro-district

with a maximum radius of accessibility from housing of 500 m. School Building must be removed from the red line not less than 25 m.

Functional zones of school areas:

- physical education and health,
- experimental zone,
- lounge zone,
- storing zone.

Sports grounds for playing with the ball and throwing must be removed from the windows of the building not less than 25 m and have a perimeter fence with a height not less than 2.5-3 m; other sites must be not less than 10 m away from the windows of the building.

Sections must be designed so that to ensure the possibility of a ring detour of fire engines.

SPACE PLANNING SOLUTION

The height of the building of a secondary education institution should not exceed three floors. In conditions of dense urban development, the construction of institutions with a height of four floors is allowed. When placing secondary education institutions in previously built 4-5-storey buildings, the fourth and fifth floors should be reserved for rooms rarely visited by students.

All school premises are divided into two main groups.

1. Training rooms:

- classrooms for grades 1-4 (I stage of training);
- study rooms and laboratories with laboratory assistants for 5-11th grades (II and III training);
- Premises for labour training and vocational guidance.

2. Secondary school premises:

- assembly and gym;
- Food court;
- workshops;
- administrative and storing premises;
- library, etc.

Room name	Area per student m2
Classrooms and auditoriums	2,5 – 3,5
Natural sciences labs, drawing rooms	2,4
Computer Science Office and computer equipment	6,0
language labs	2,4
Labor training workshops	6,0
Sleeping rooms in boarding schools	4,0

The occupancy of each class should not exceed 25 people.

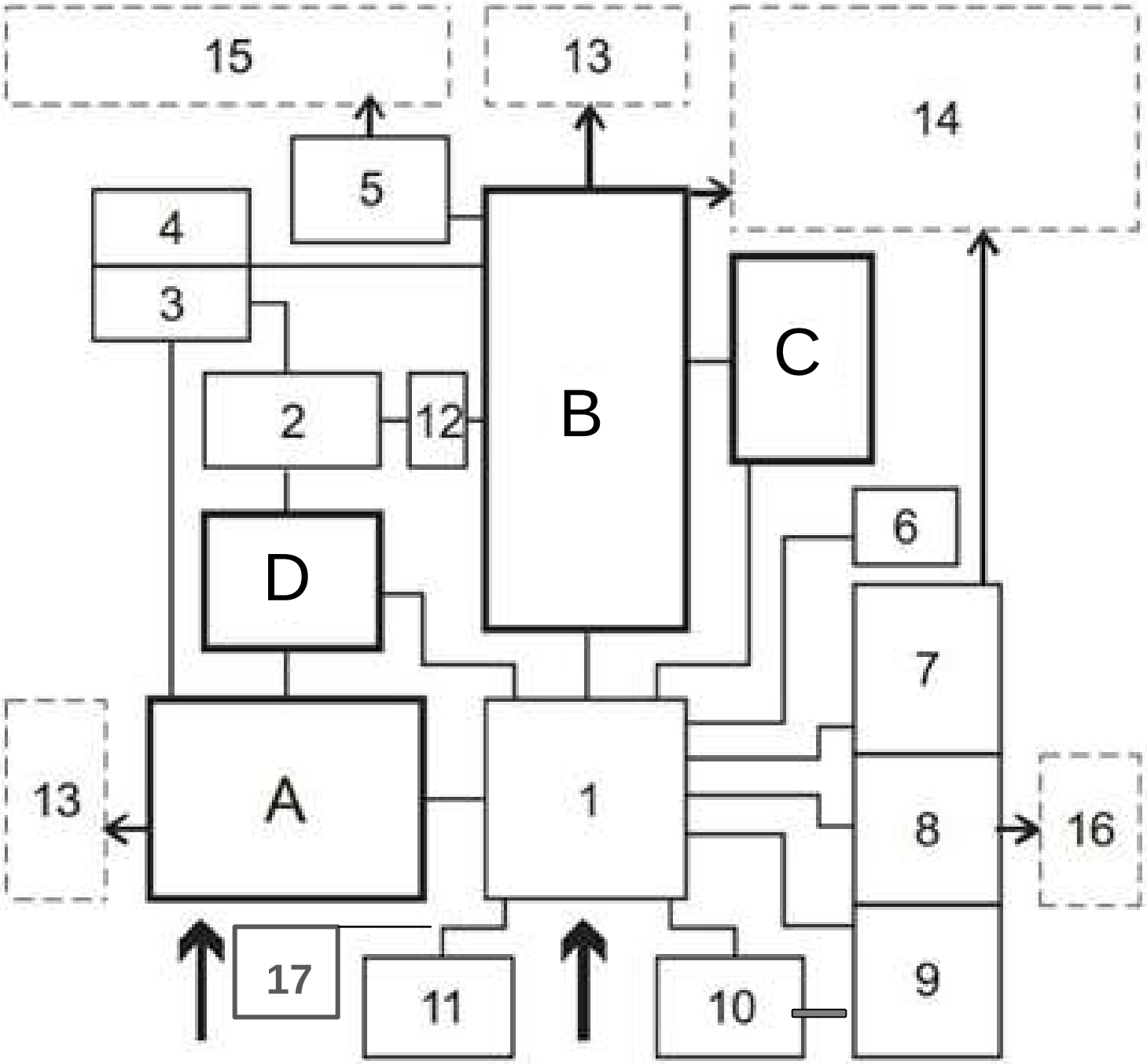

15
13
14
5
4
3
2
12
B
C
D
6
7
13
A
1
8
16
17
11
10
9

Diagram of the relationship between the main groups of medium-size spaces

Secondary Education School:

A - training sections for grades 1-4;

B - training sections for grades 5-11;

C - groups of premises for labor training;

D - groups of rooms for organization of the extended day;

1 – lobby; 2 – IT-cabinet;

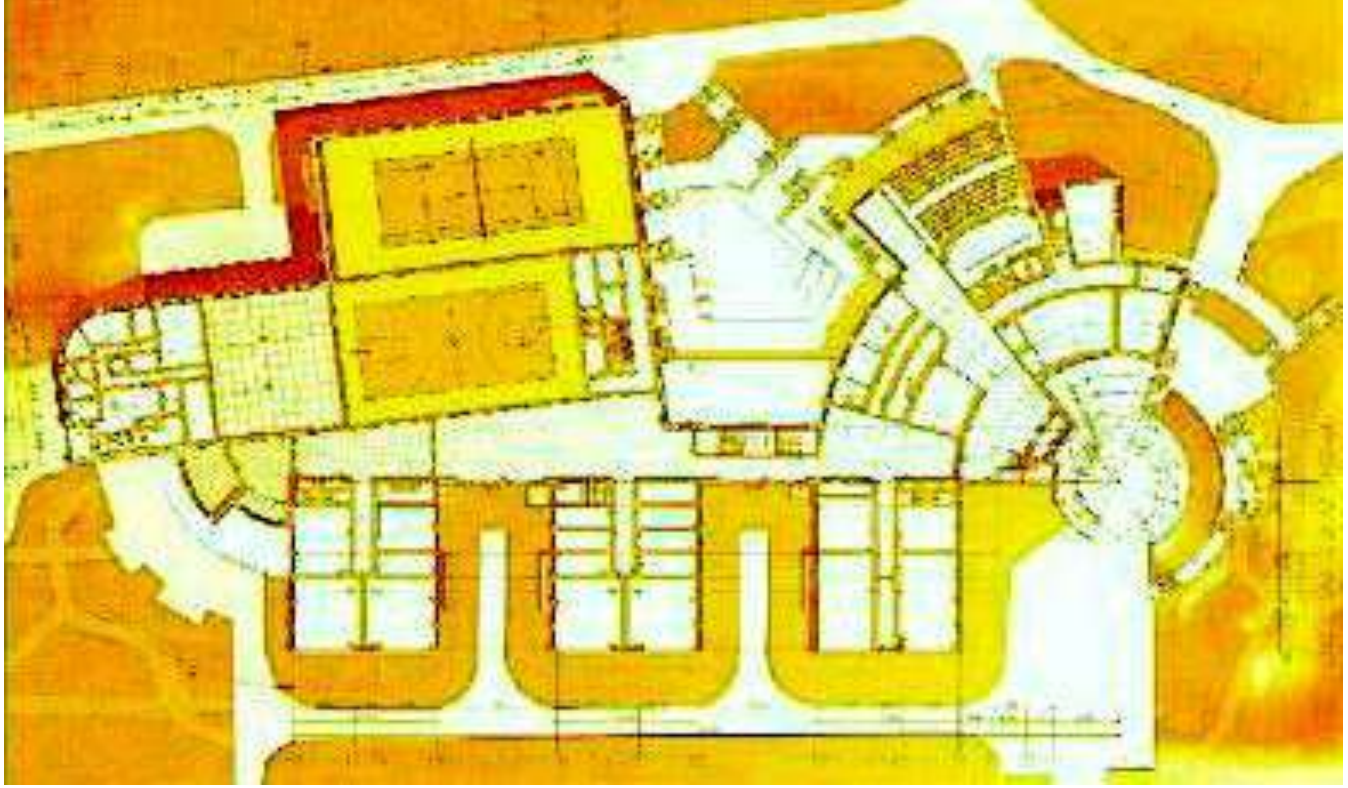
3 - library; 4 – teacher-room (staffroom); 5 - labs; 6 – techno-sphere safety cabinet;

7 - gyms; 8 - canteen; 9 - assembly hall;

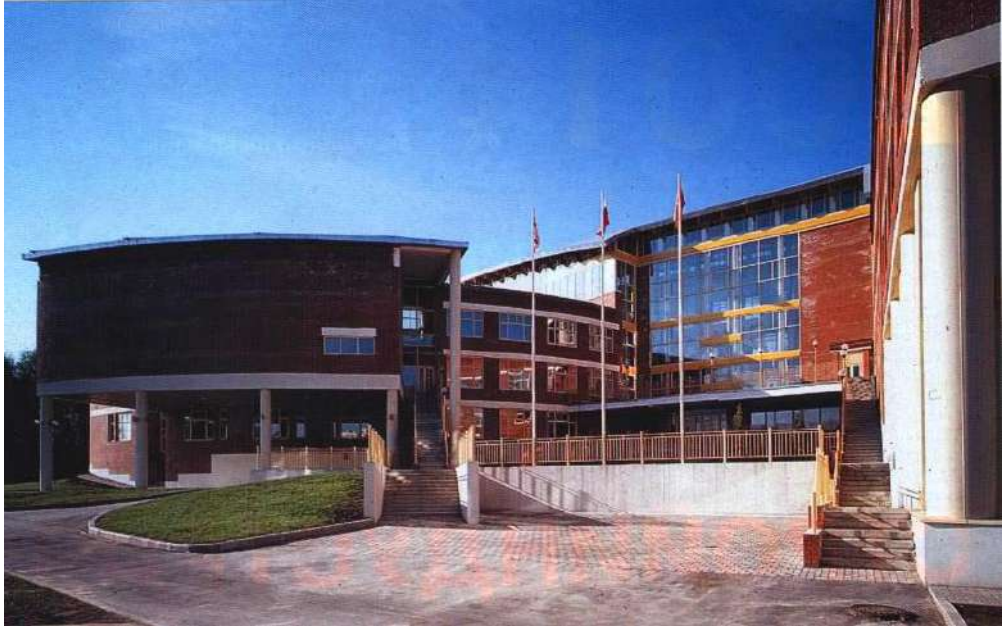
10 - singing and music class; 11 - administration; 12 - technical center;

13 - recreation area; 14 - sports area; 15 - training and experimental zone; 16 - storing zone;

17 - medical center, psychologist's office

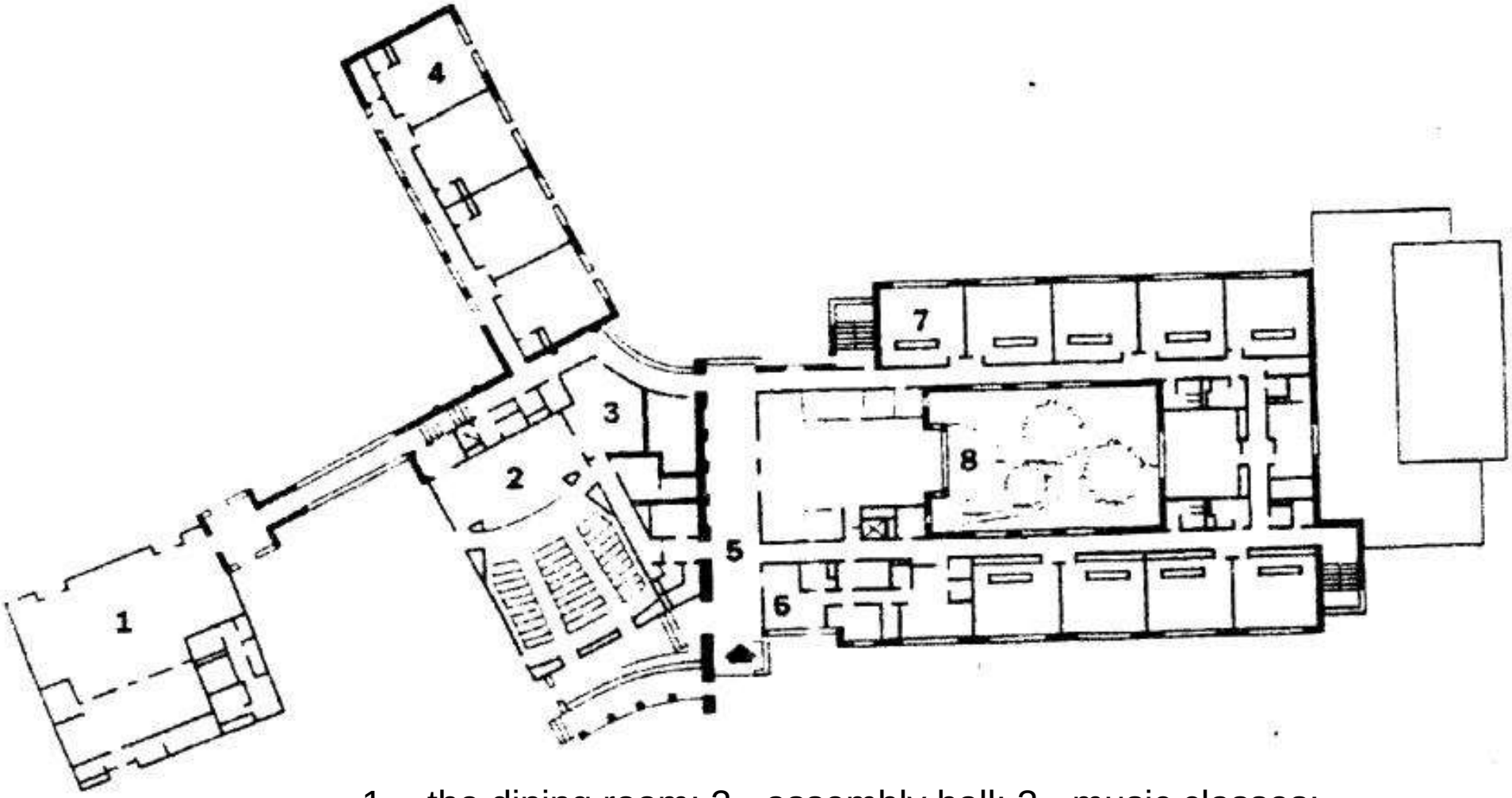


SCHOOL IN NORTHERN BUTOVO. MOSCOW
architects N.V. Lyutomsky, Yu.V. Bogaevskaya, G.S. Sandomirsky,
engineers B.S. Mesburg, S.M. Sorokin, V.M. Silin, N.N. Tsvetkov



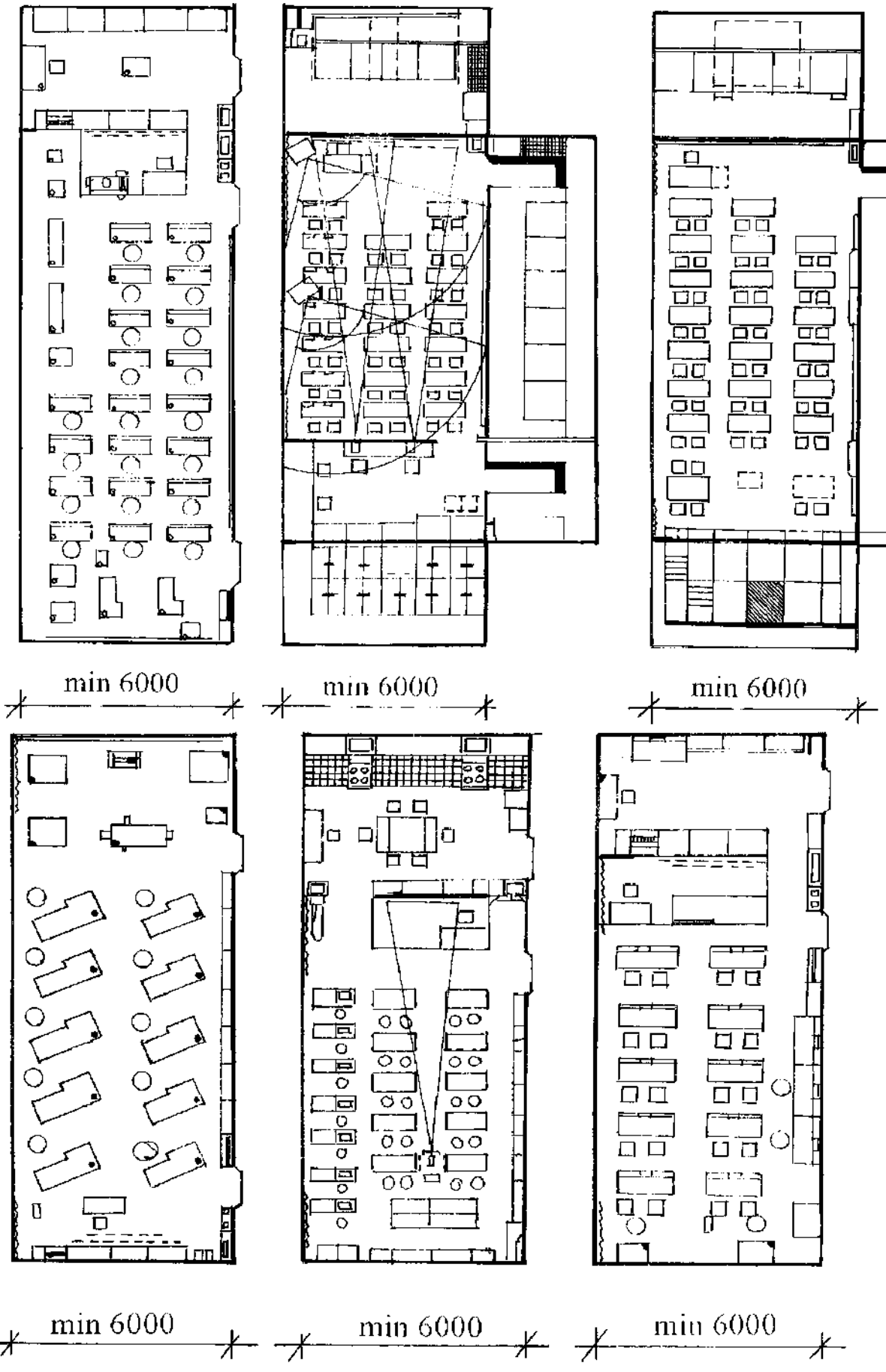
SCHOOL IN ERFURT

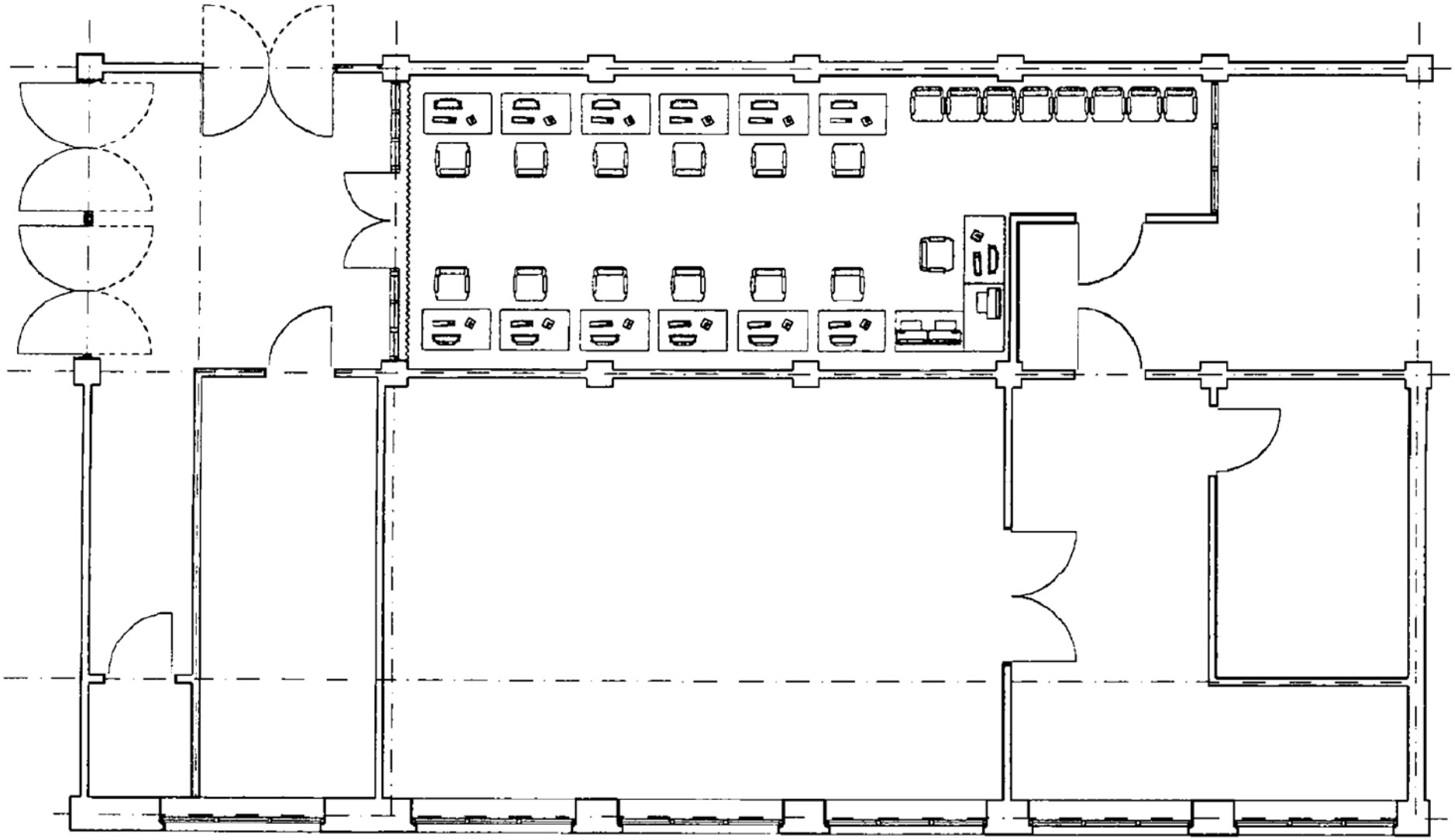
REDEVELOPMENT AND MODERNIZATION OF THE PRIMARY SCHOOL BUILDING COMPLEX IN SHT. MIDDLETOWN, USA



1. - the dining room; 2.- assembly hall; 3.- music classes;
4.- classes of preschool education;
5.- lobby; 6.- administrative premises;
7.- classes; 8.- patio

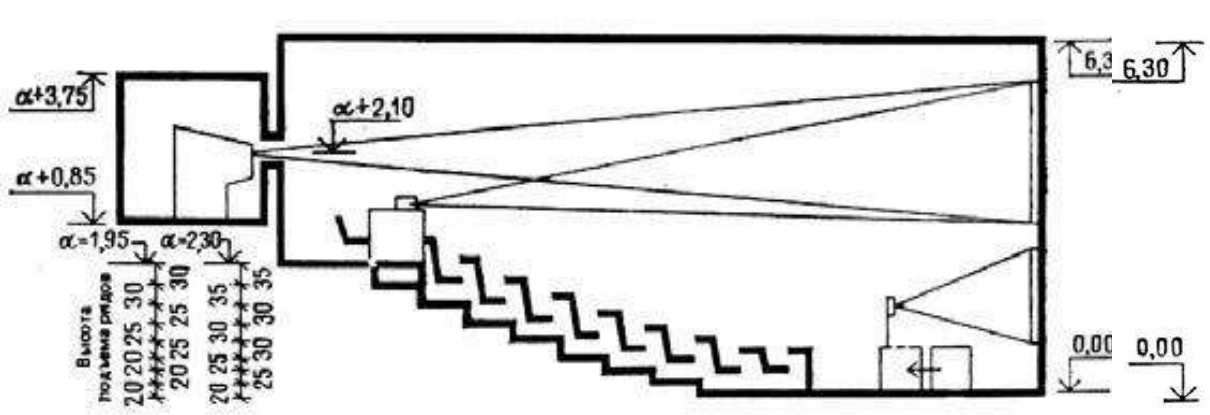
Layout options for classrooms

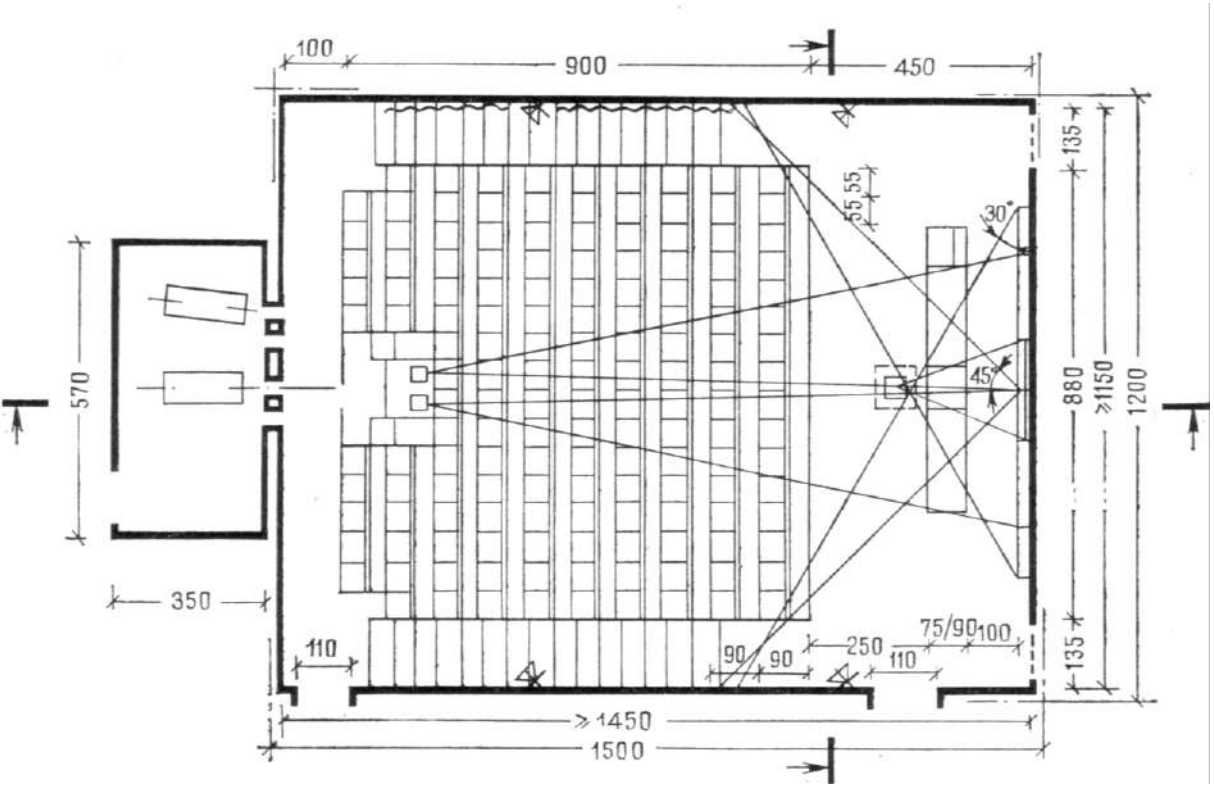




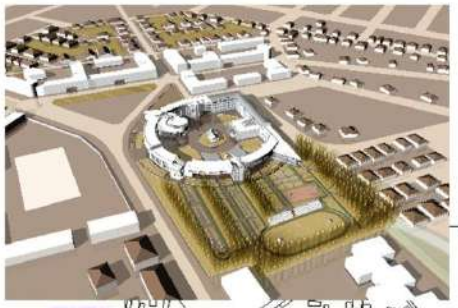
Layout of computers in the Internet class

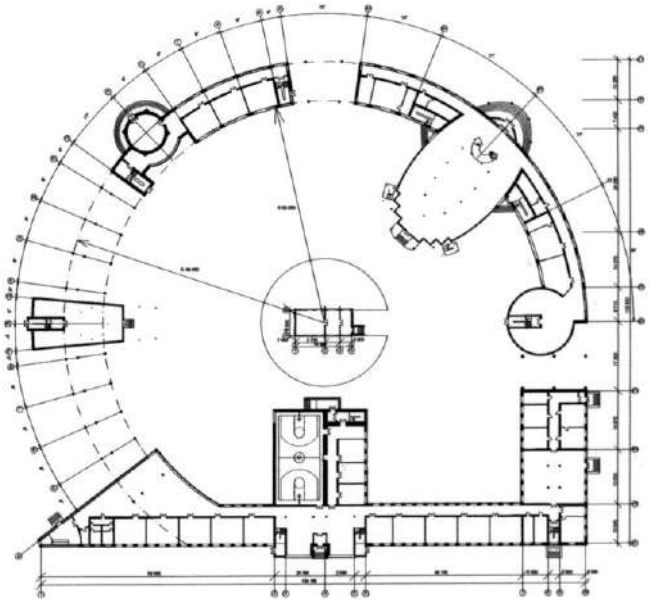
Educational sections for grades 1-4 are designed separately, allocated in a separate block, impassable for students of other age groups. In addition to classrooms, this block includes workshop for labor training, universal Room for extended day groups, recreation and sanitary units.
Training sections for grades 5-11 are formed on the basis of study rooms and labs.
Training spaces include: work area (placement training tables for trainees); teacher's work area; additional space for placement of teaching aids, training equipment IT; a zone for individual classes and possible physical activities.
The required orientation of the main classrooms around the world for secondary education schools is South, South-east.
For painting, drawing rooms, a north orientation is recommended.
In institutions with in-depth study of individual subjects, gymnasiums and lycées should have a lecture auditoriums.

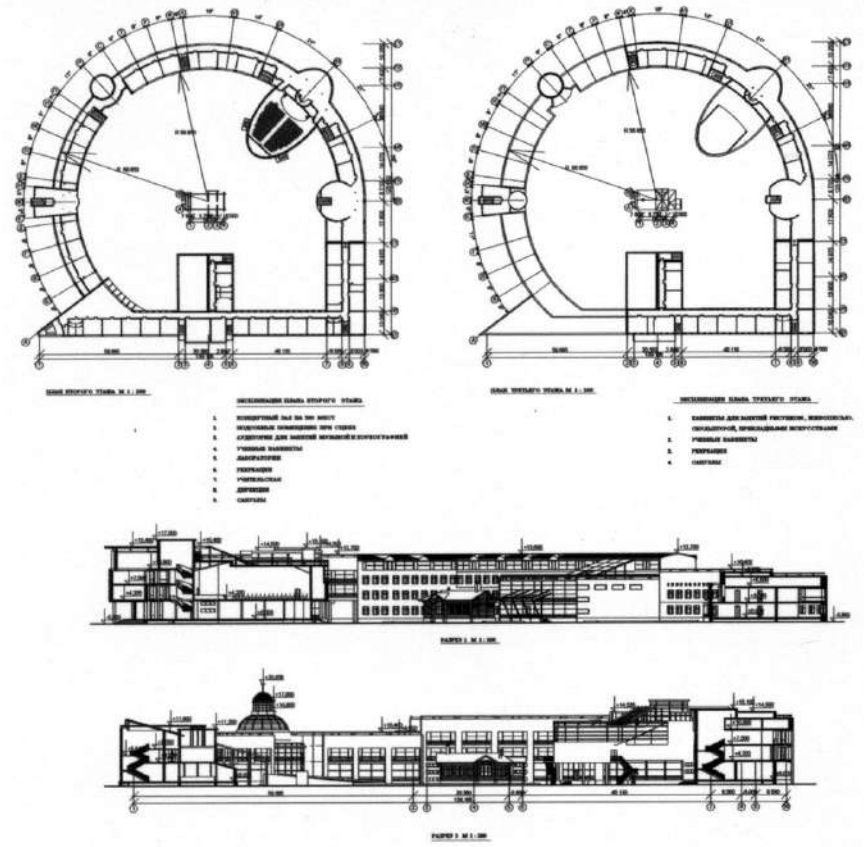


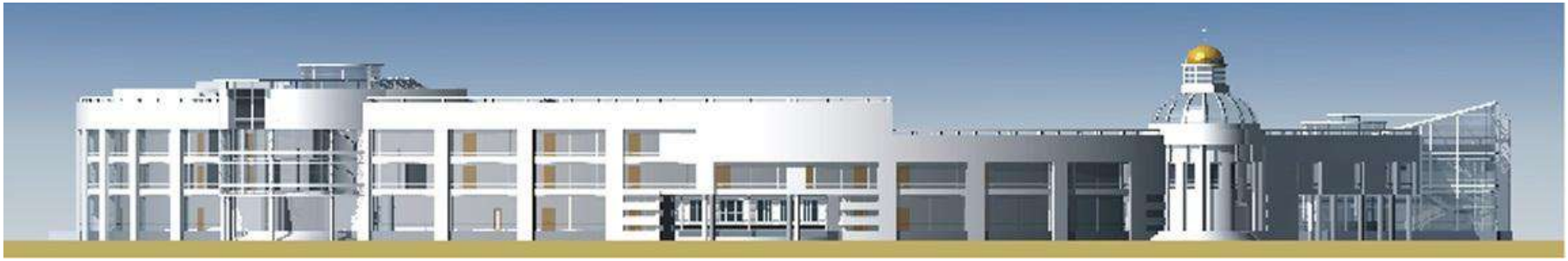


Functional and dimensional diagrams of the lecture auditoriums for 150 seats



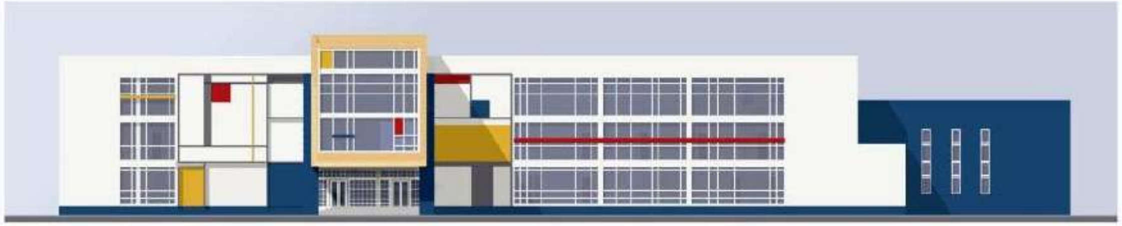




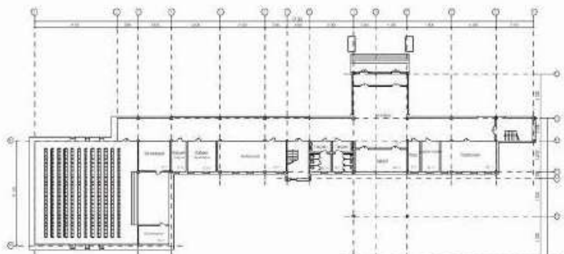
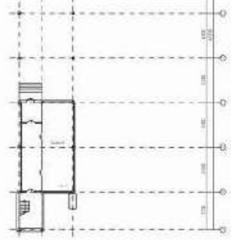


RECONSTRUCTION OF THE SCHOOL NAMED AFTER SHALYAPIN IN NIZHNY NOVGOROD, DIPLOMA STUDENT A.M. ZUEVA, HEAD OF TRAC. A.L. GELFOND, 2003

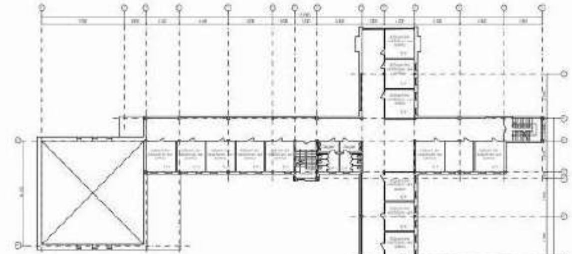
ШКОЛА ИСКУССТВ
В ЛЫСКОВО


Главный фасад М 1:100


Генеральный план М 1:2000

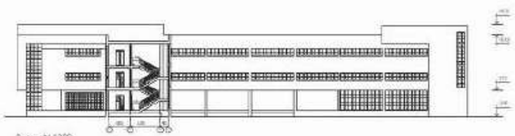


План 1-ого этажа М 1:200

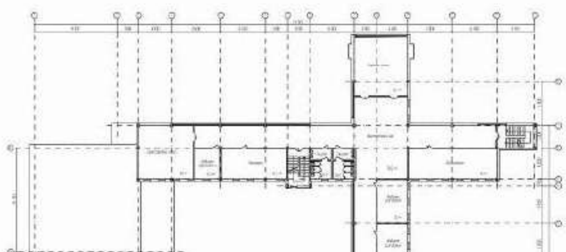
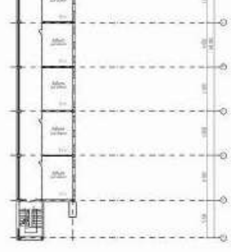

Работа Пита Мондриана



План 2-ого этажа М 1:200

В основу положено пересечение двух перпендикулярных блоков. Сухую функциональная структура сооружения дополняется с помощью локального введения открытых цветов, что перекликается с идеями группы Д-стиль 20-х годов (Голландия).
Динамическое архитектурное решение создает ассиметрию фасада.
Тема контраста прослеживается как в плане, так и во внешнем облике.


Разрез М 1:200



План 3-ого этажа М 1:200


Перспектива

ТЭП

1. Рабочая площадь 1180 $м^2$
2. Площадь застройки 1037 $м^2$
3. Строительный объем 3780 $м^3$


Боковой фасад М 1:200

SPECIALIZED SCHOOLS

As an example of specialized schools, consider children of art schools.

There are usually four departments in such schools:

- preparatory;
- musical;
- choreographic;
- department of Fine Arts.

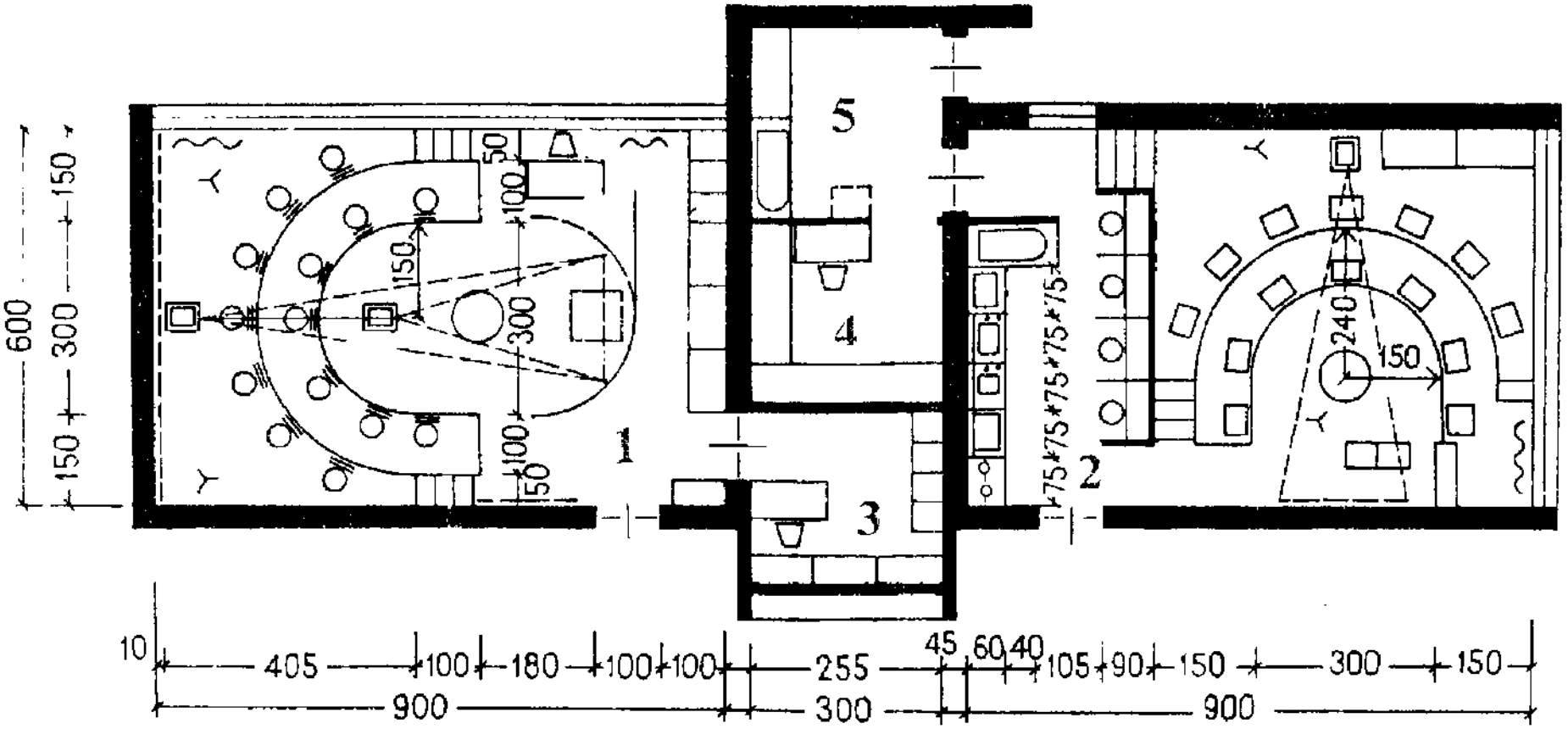
The Preparatory Office will operate separately from the remaining premises of the children's art school and include: music class, choreographic class, Drawing and sculpting class, room for storage of musical instruments, universal hall, showers, sanitary blocks.

The department of fine arts includes workshops of drawing, painting, composition, sculpture. Each painting and drawing workshop is usually placed on the upper floors and includes the following areas:

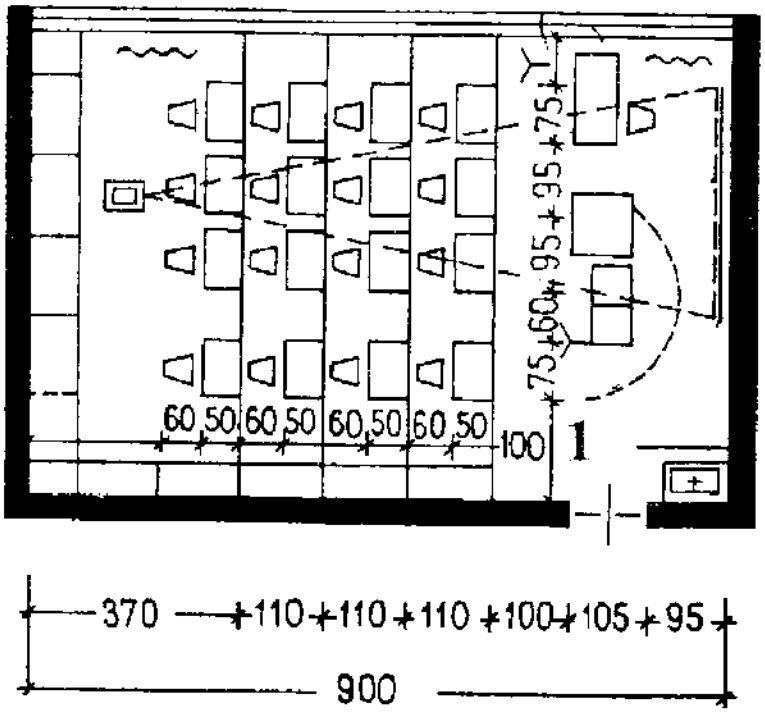
- teacher's area;
- still life area;
- the area of students;
- easel storage area.

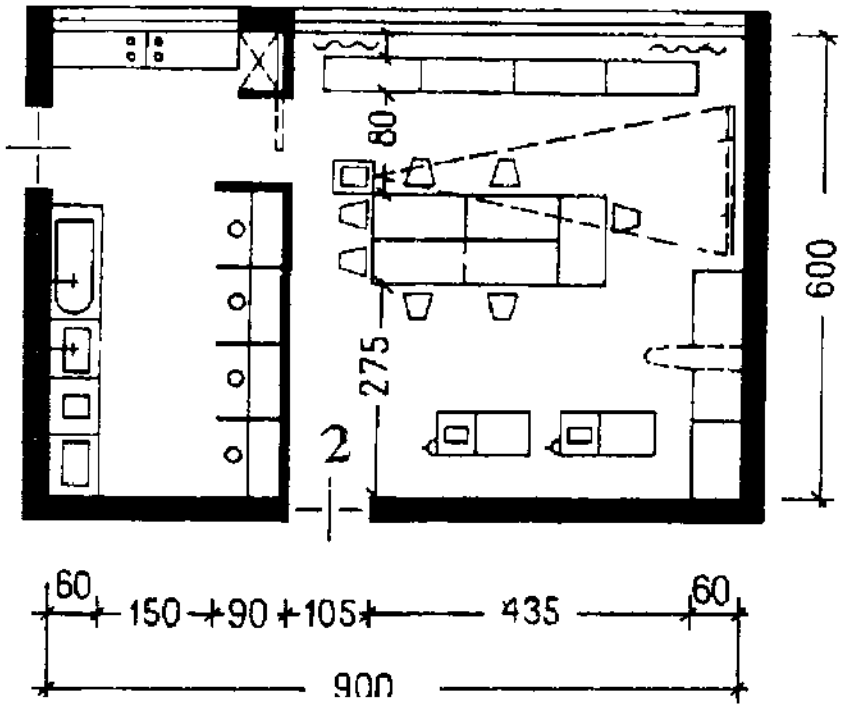
Recommended workshop height to the bottom of the protrusions structures 3.6-3.9 m, width 6 m, length 9 m.

The sculpture workshop is located on the lower floor.



Workshops of drawing, painting and sculpture:
1 - drawing and painting workshop; 2 - sculpture workshop; 3 - pantry; 4 - gypsum pantry; 5 - clay storeroom, waste



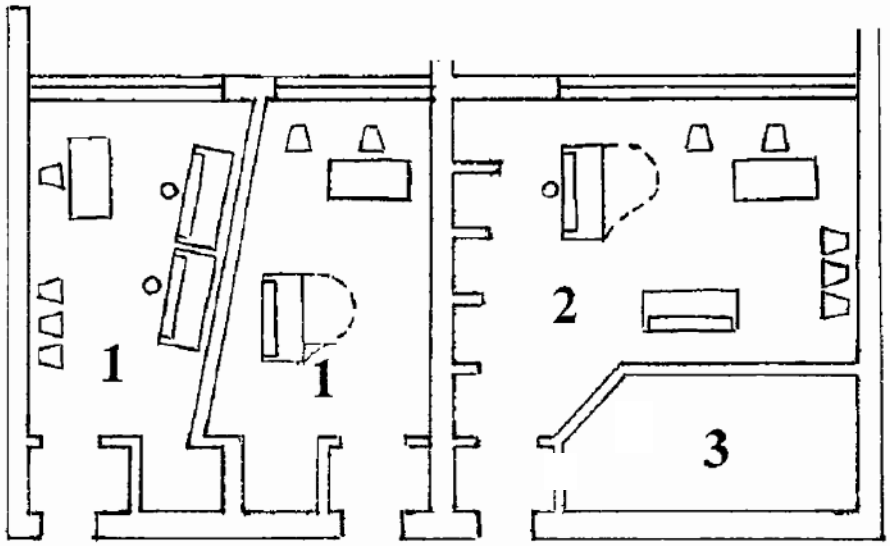


Workshops of applied arts, compositions:
1 - workshop of applied arts;
2 - composition workshop

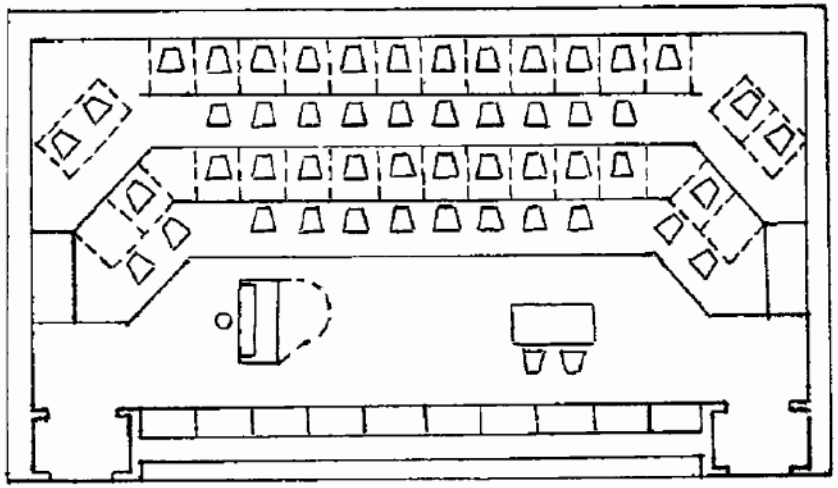
The music department should be planned so that equivalent rooms, depending on from functional, acoustic, sound-insulating and structural negative requirements, were blocked into separate sections and differentiated vertically and horizontally from other rooms.

Rooms for individual music classes should be designed with tambour, which house a storeroom for instruments and a washbasin. Walls of music classes are recommended to be made non-parallel (deviation 2-12 °) with appropriate acoustic finish.

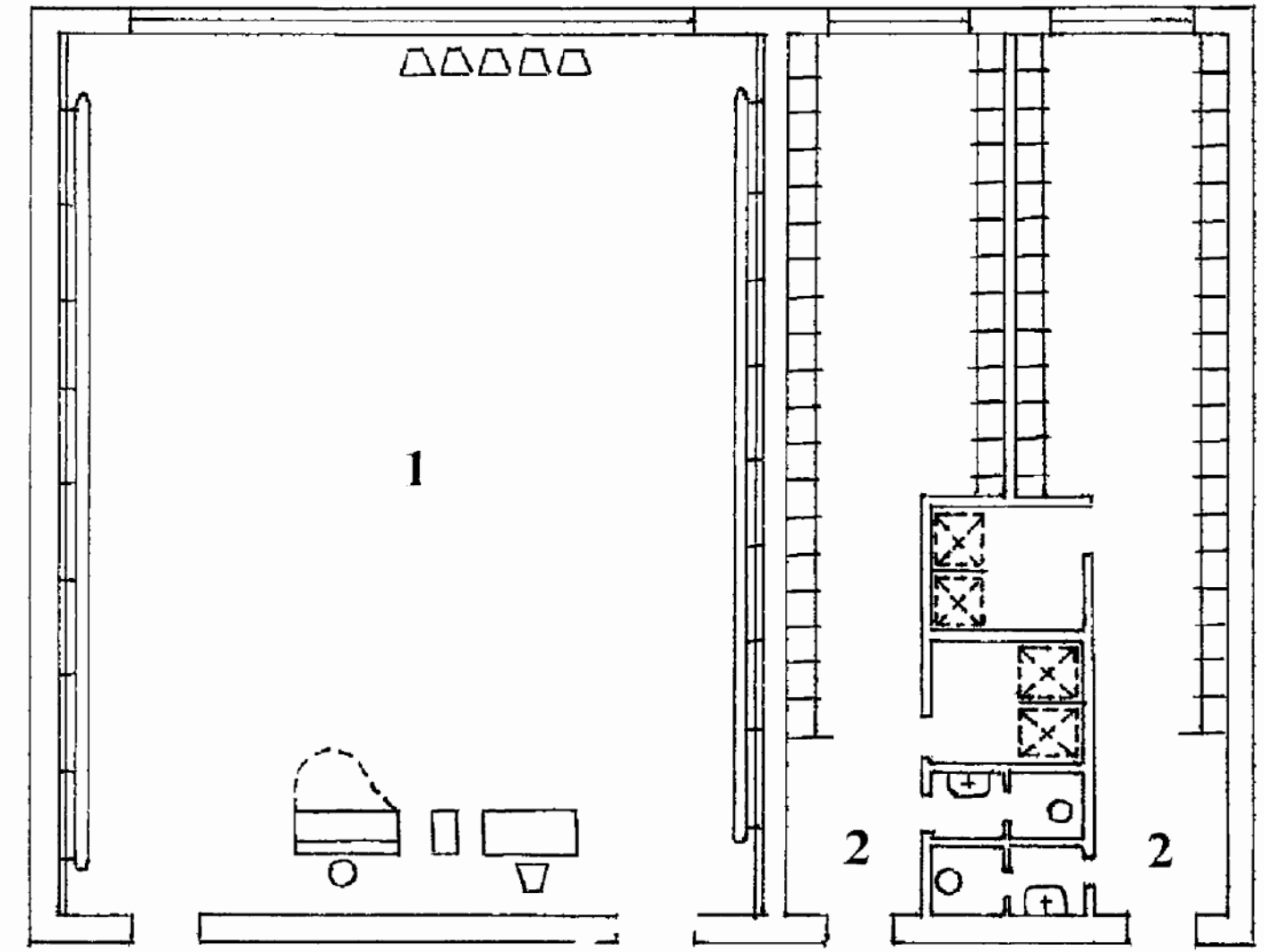
The choreographic department includes: a hall for classes in rhythm and dance; classrooms, stage, modern dancing-class; class of theoretical disciplines; costume workshop; dressing-room; showers; sanitary units.



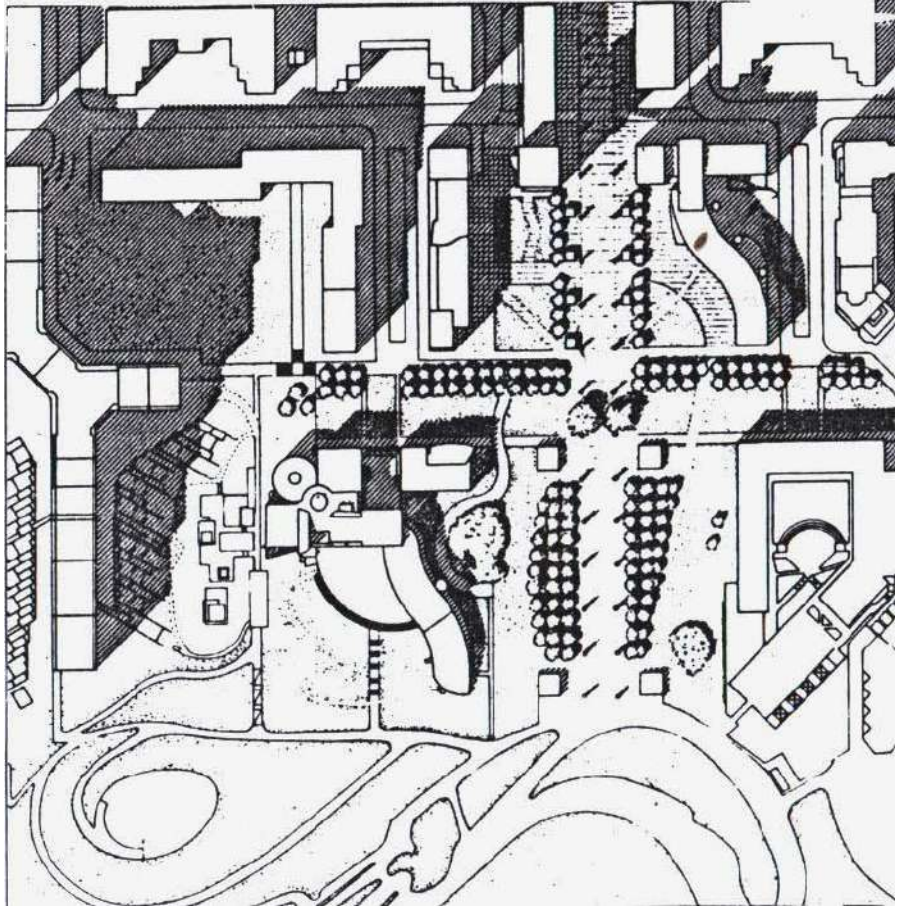
Rooms for individual classes in specialties:
string, piano, wind and folk instruments:
1, 2 - rooms for individual classes; 3 - utility rooms

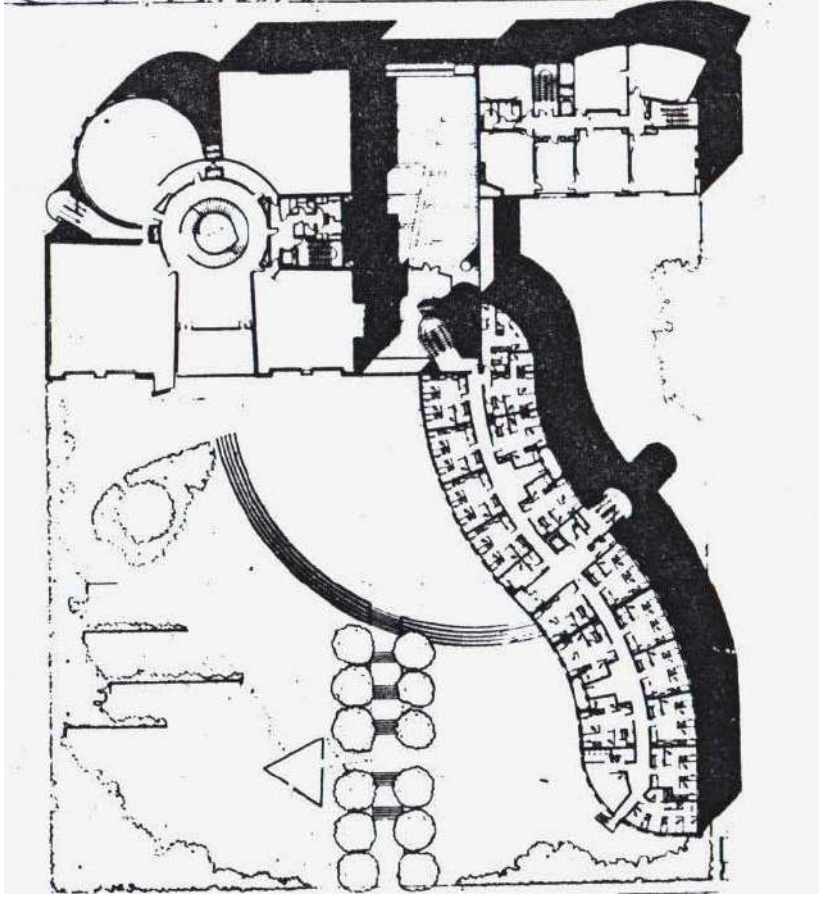


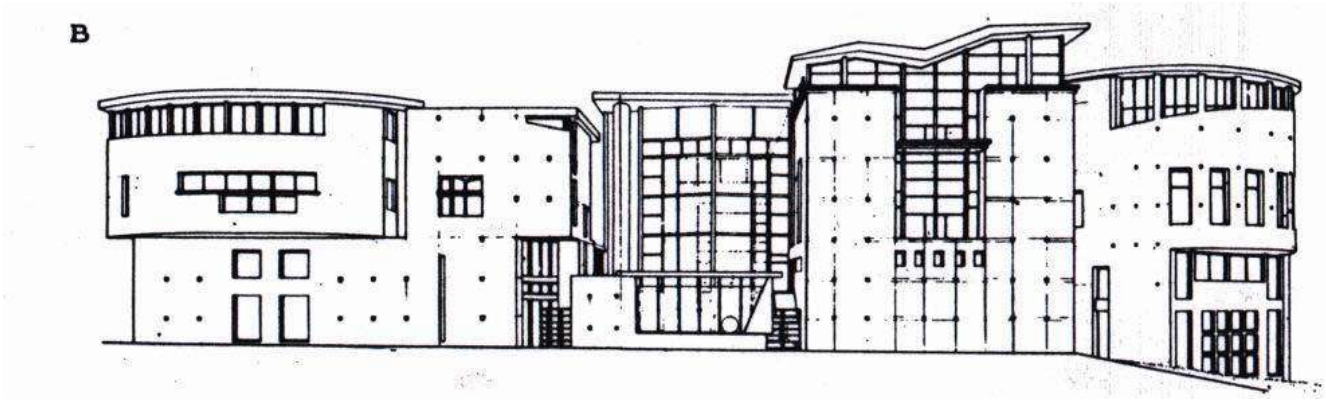
Music department of art-school. Choir and Orchestra Class



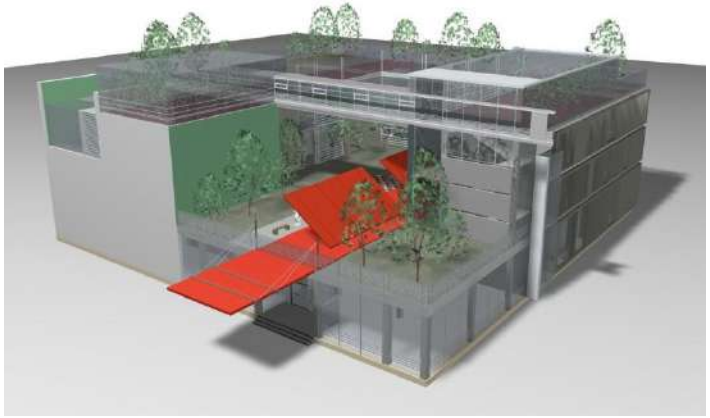
Choreographic department of art-school. Universal Hall:
1 - universal room for combined periodic classes;
2 – dressing-room with shower and sanitary blocks

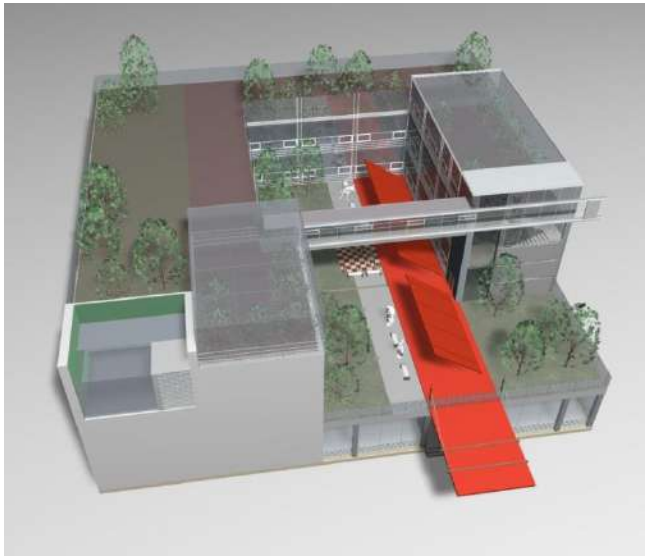




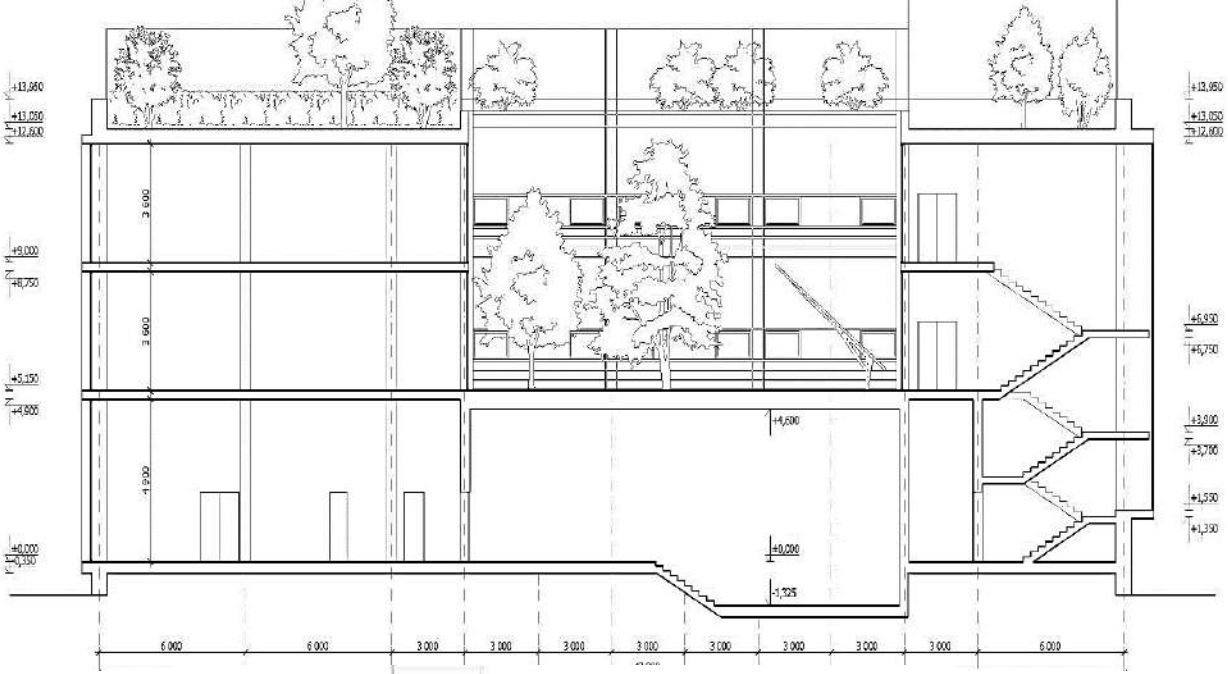


BALLET SCHOOL BUILDING IN PARIS. 1988 Architect K. de PORTZAMPARK





SCHOOL OF ARTS IN LYSKOVO,
STUDENT OLGA POLETKINA, DIPLOMHEAD A.L. GELFOND, 2008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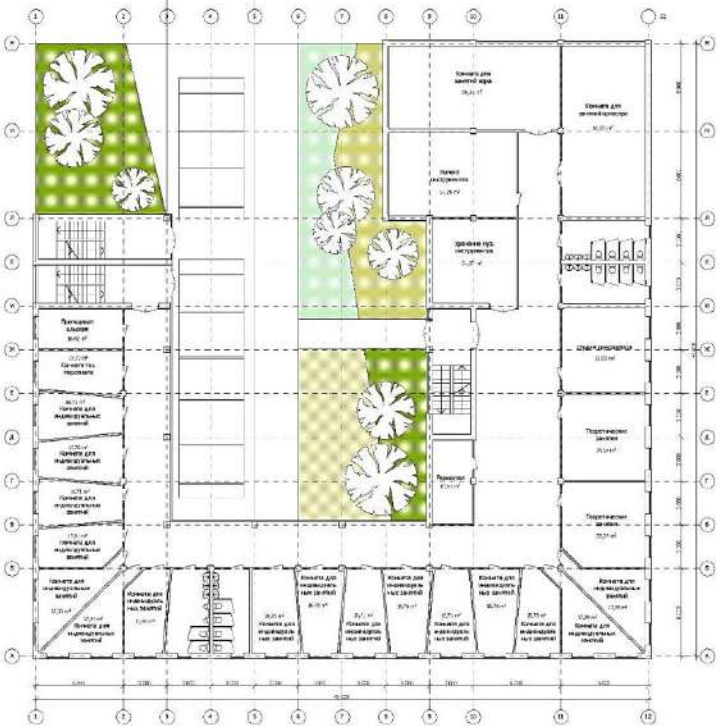


When designing special boarding schools for children
with delays in physical and mental development it is necessary to provide rapid communication with medical facilities and at the same time try to locate buildings in a quiet area. These two requirements are most successfully met by a suburban zone with good communication with a large administrative center.

When designing special schools, it is necessary to take into account specific cycles of treatment, upbringing, everyday life. So, for example, special schools for children with disabilities in propulsion system is required to design ramps; Classroom settings vary according to specific requirements. The storey in these cases should not exceed two floors.

TYPES OF TRAINING COMPLEXES

The educational complex is a functional, archival
cultural, organizational or territorial association
buildings of several educational institutions of the same or different levels education with different forms and degree of cooperation.
It can be created in various forms. The most rational and promising form is the unification of institutions on a functional basis or on the basis of the similarity of service systems.
The basis and structure of each educational complex is formed study, practice and service. There are **monofunctional** educational complexes that include only educational institutions (group 1) in various combinations, and **polyfunctional** complexes that include, in addition to educational institutions, scientific institutions and production enterprises (group 2), as well as service enterprises (group 3).

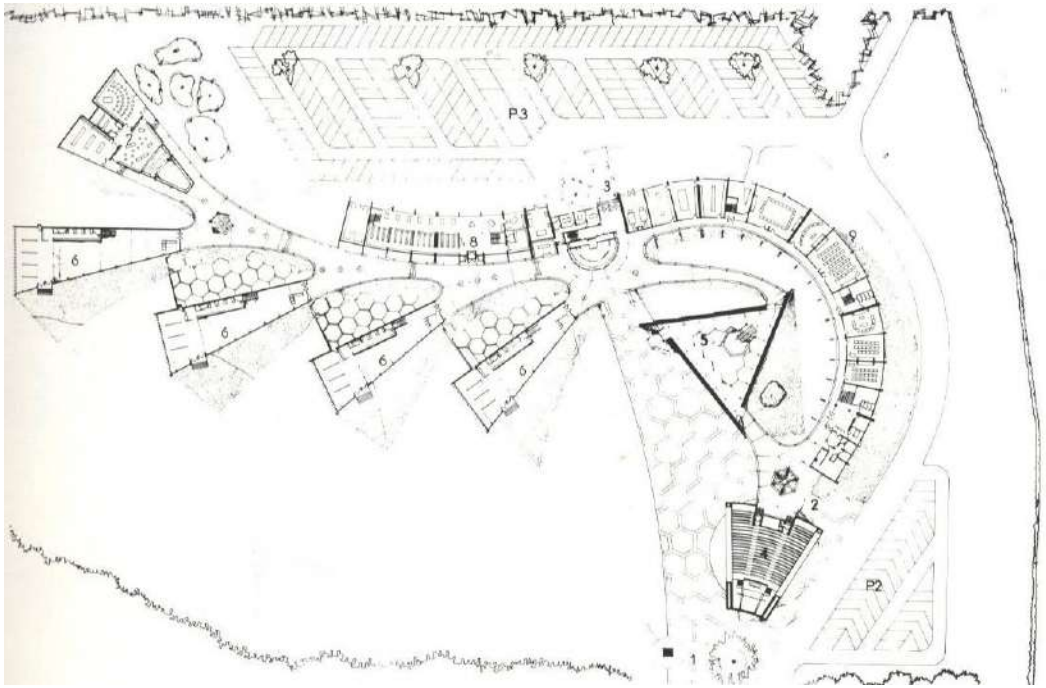
The mono-functional branch educational complex - a complex of buildings and structures formed by educational institutions on the basis of the unity of the teaching function - unites educational institutions of different levels of education and advanced training, but of one branch. They should be divided depending on the affiliation of the cooperated institutions into educational complexes of departments and educational complexes of large enterprises and production associations.

A multifunctional educational complex is a complex of public buildings in which an educational institution is equally included simultaneously with another institution (for example, educational and cultural, educational and medical, educational and production, educational and scientific complexes).

Thus, the poly-functional complex, which includes educational institutions of culture, importantly expands the composition premises that are used by the population - educational theater, concert hall, exhibition halls, and students are included in the serving the population. Multidisciplinary Clinical Hospital is not only a center of highly qualified assistance the population, but also the base of a medical institute or institute for the post-graduate doctors” training, a center for the training of medical staff, a base for research.

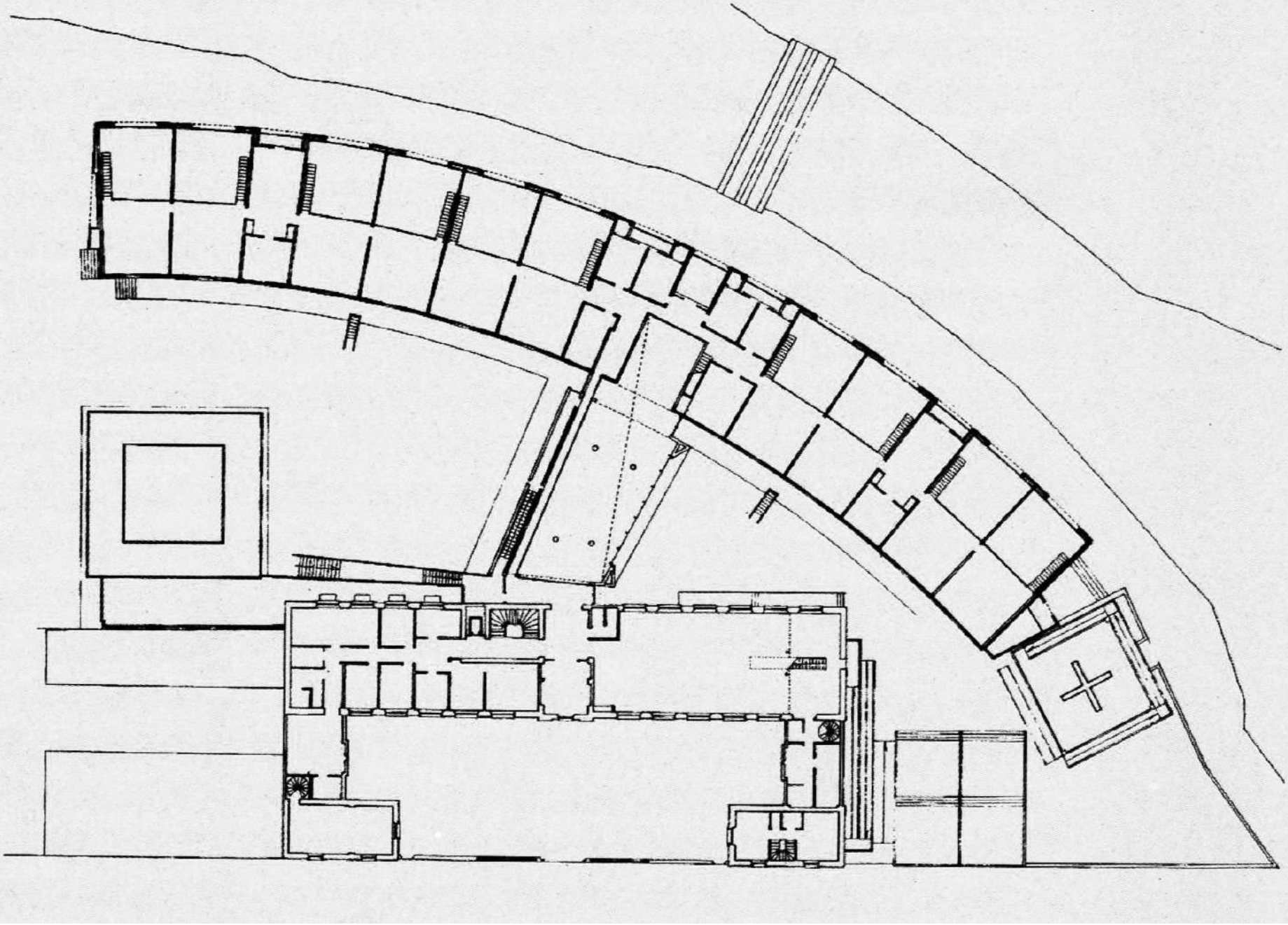
BUILDINGS OF HIGHER EDUCATION INSTITUTIONS (EXAMPLES OF FRENCH SCHOOLS OF ARCHITECTURE)

Higher State School of Architecture and Landscape Design of Bordeaux, 1972, Architect K. Ferre



1- main entrance, 2- service entrance (for teachers and administration) related to parking P2;
3 - entrance for students associated with parking P3;
4 - amphitheater; 5 - exhibition hall;
6 - architectural workshop; 7 - sculpture workshop;
8 - documentation room;
9 - training and administration premises

Higher State School of Architecture of Brittany
(Architect P. Berger, 1990)

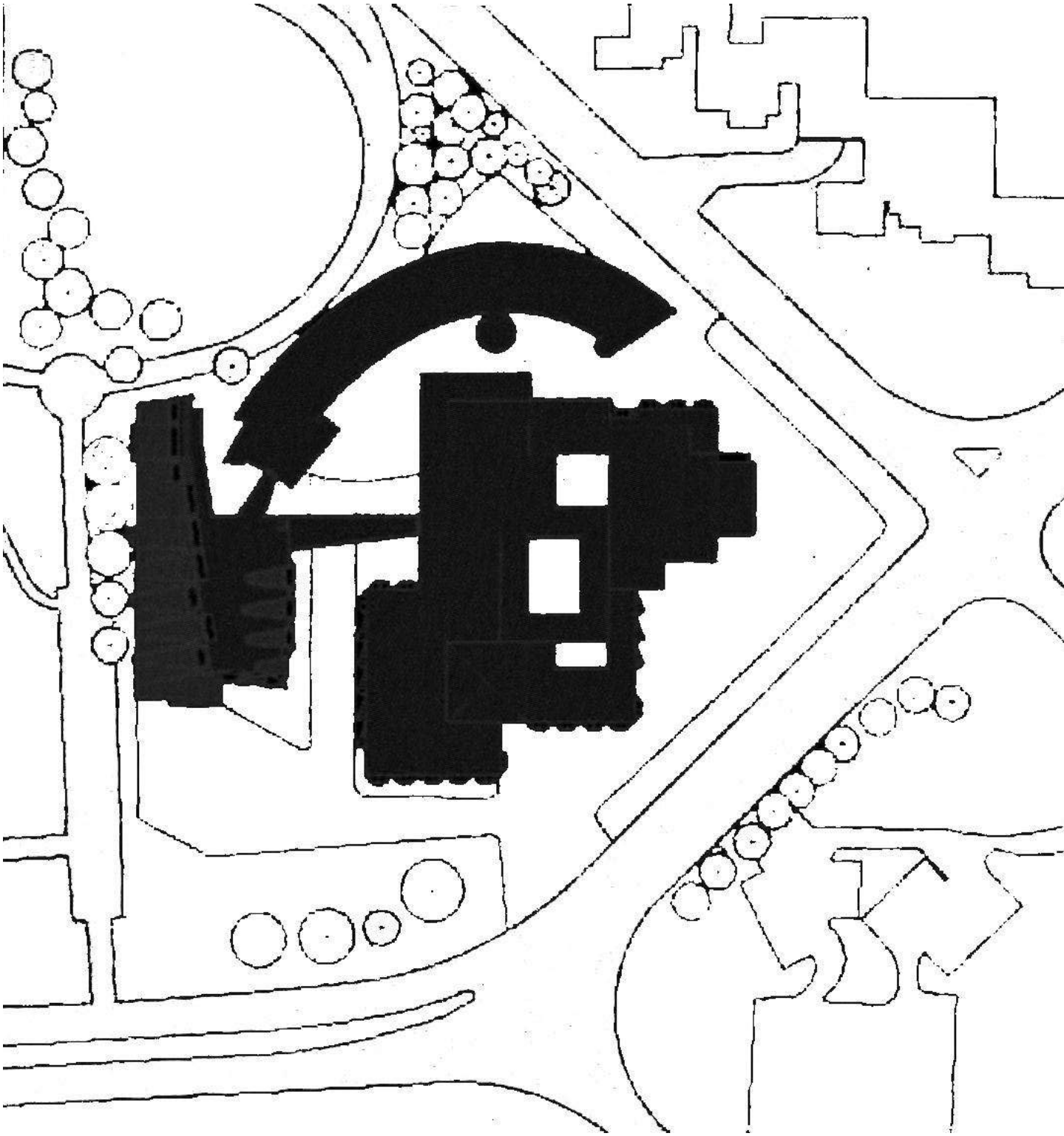


Higher State School of Architecture of Clermont-Ferrand
(Architect M. Pranal, 1990)

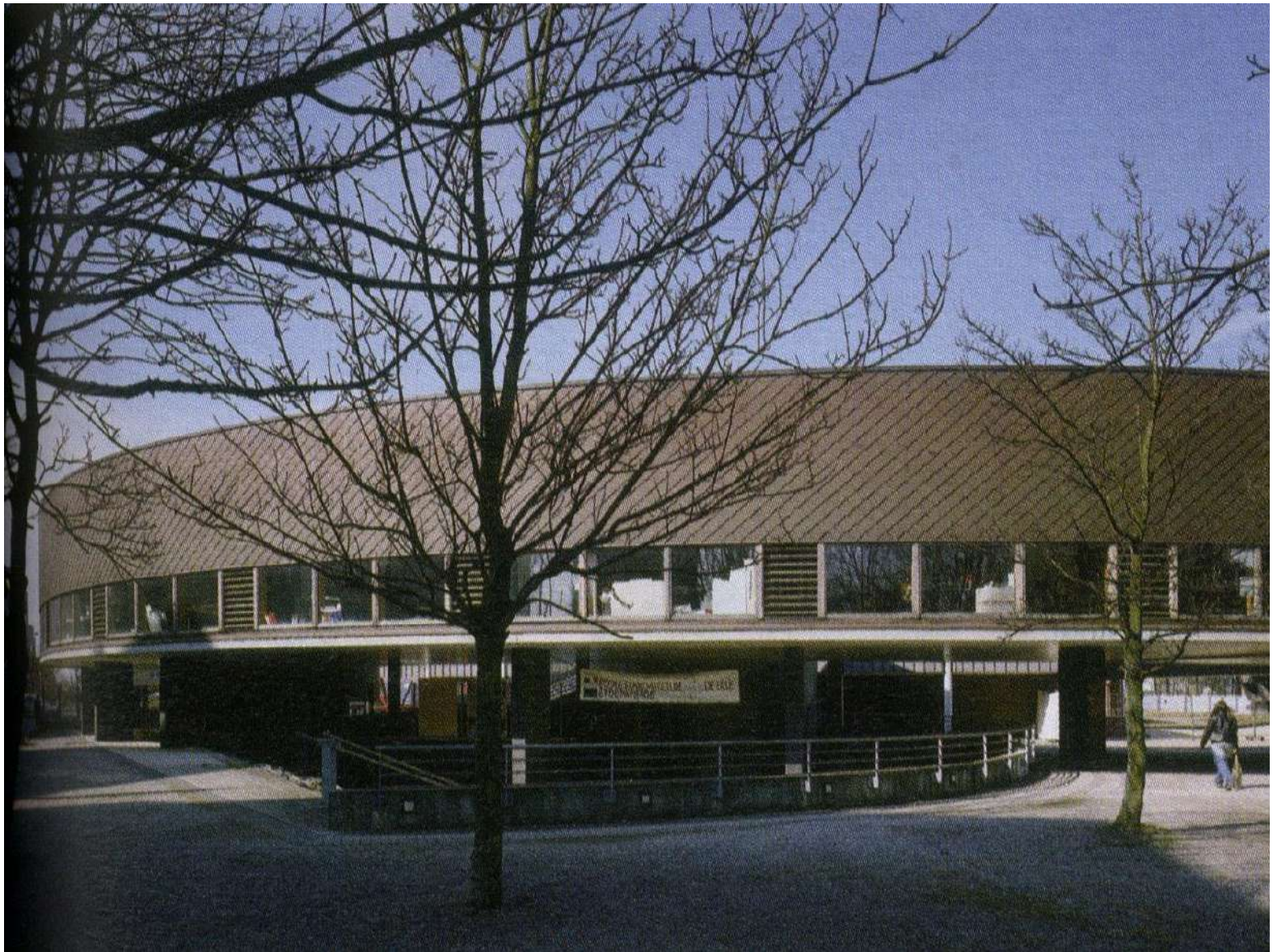
Grenoble Higher State School of Architecture (Architect R. Simune, 1978; expansion and reconstruction, Architect A. Felix-Faure and F. Makari, 2005)


école nationale
supérieure
architecture
grenoble

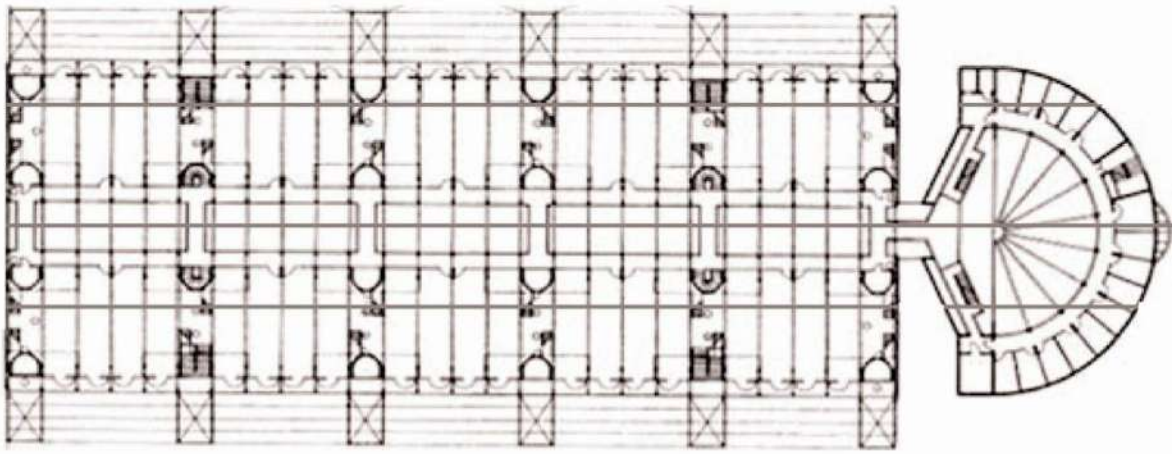
General State School of Architecture and Landscape Design, Lil,
Architect P. Eldan, 1978, reconstruction in1995
JA. Delecourt, L. Peretz



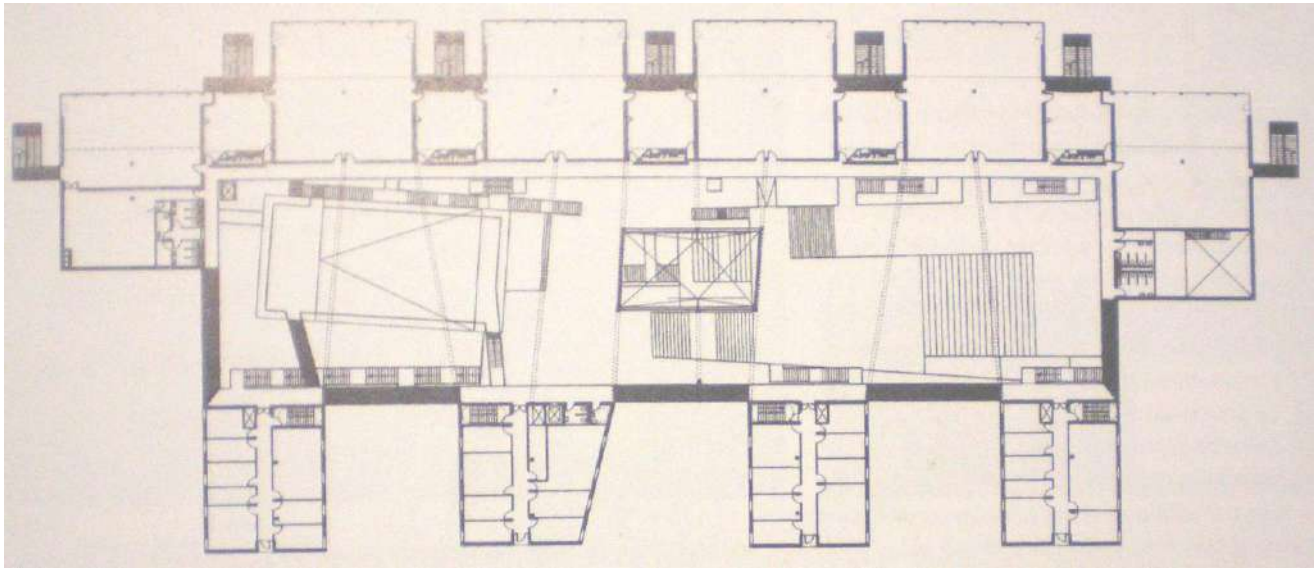
Higher State School of Architecture and Landscape Design, Lil, extension 1999 Architect O. Bont, V. Sheani



Higher State School of Architecture and Landscape Design, Lil, extension 2006 Architect N. Serazhi

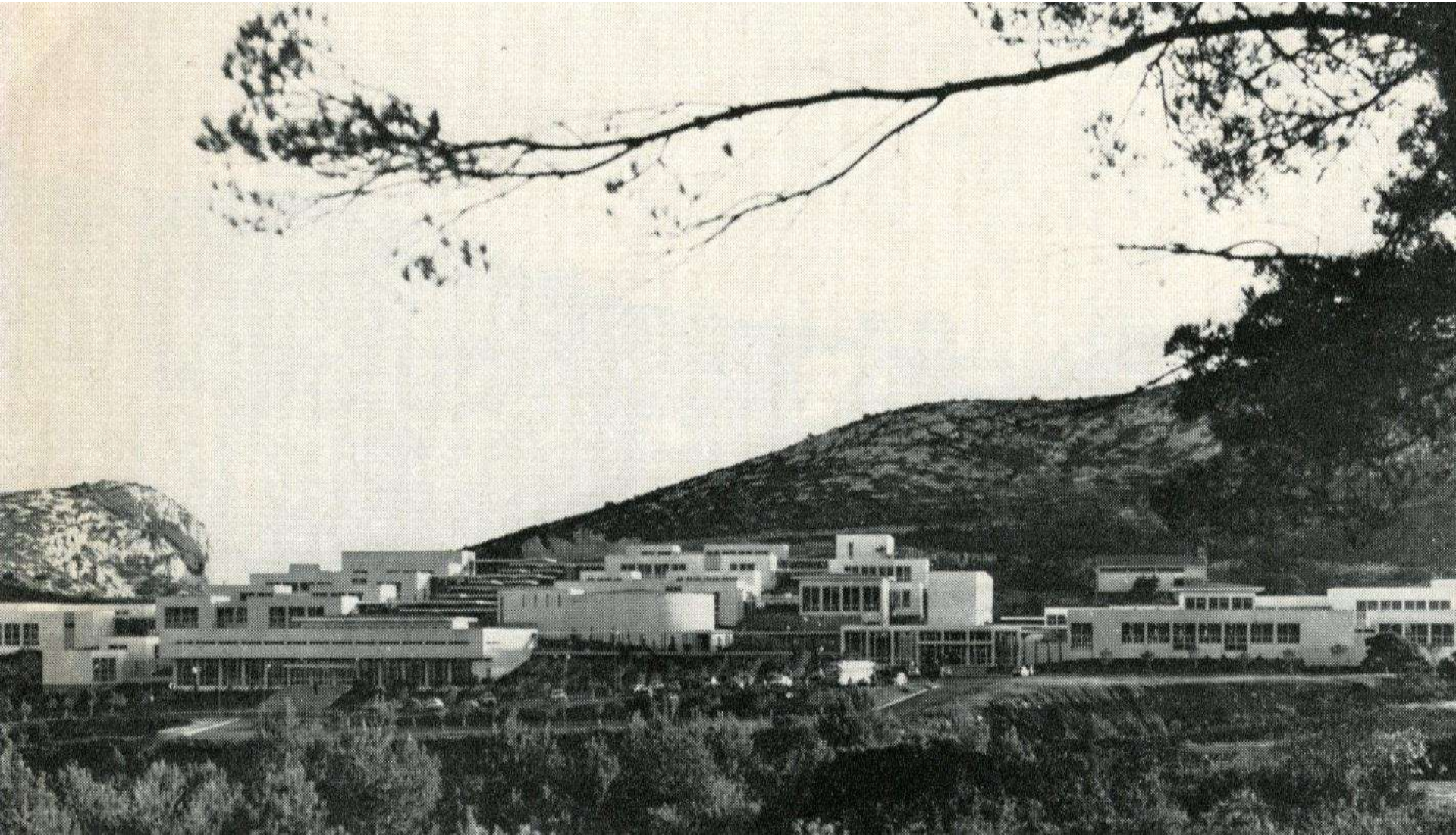


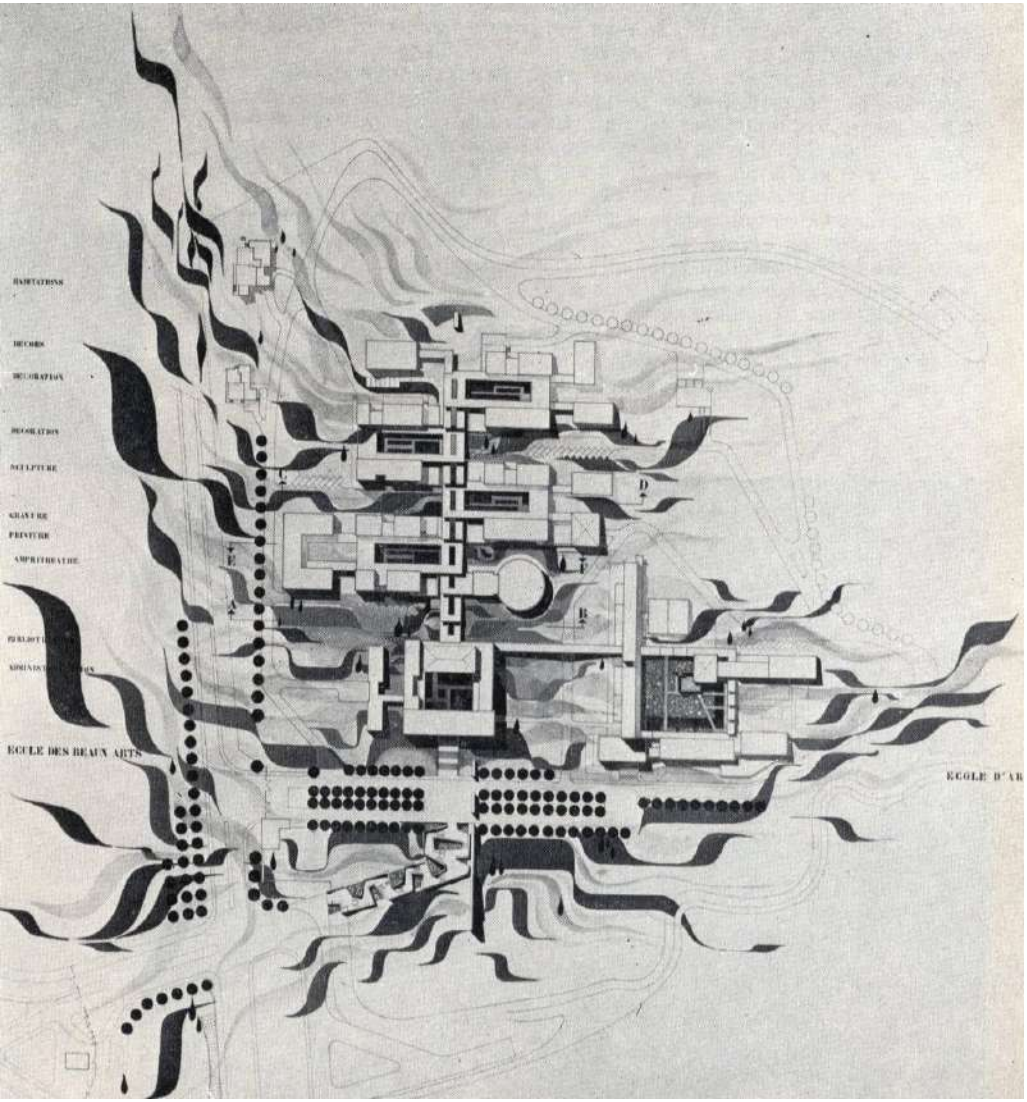
Higher State School of Architecture, Lyon,
Archpriest F.-E. Zhurda, J. Perrodan, 1987

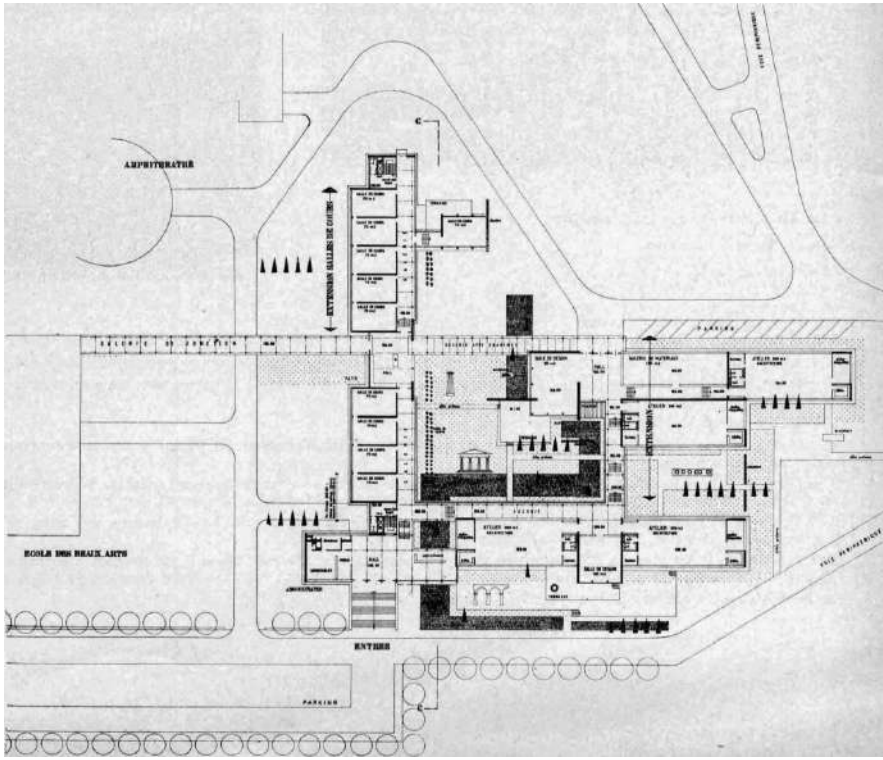


Vishcha Derzhavna School Architecturi m. Marn-la-Valle,
Architect B. Chumi, 1999

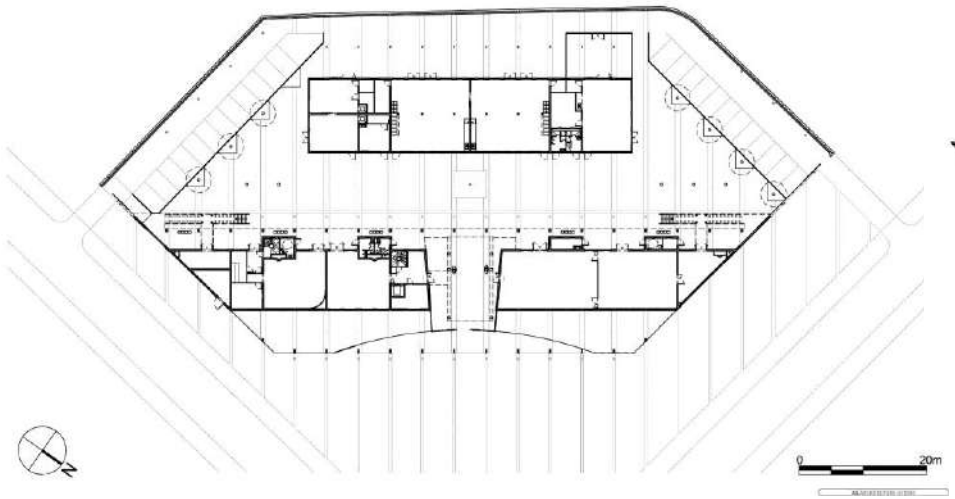
Higher State School of Architecture, Marseille, Architect R. Eger, 1969 (original building); K. Chabrol, J. Cerrito, R. Daniel, 1994 (first expansion), F. Nicolas, 2008 (second expansion)

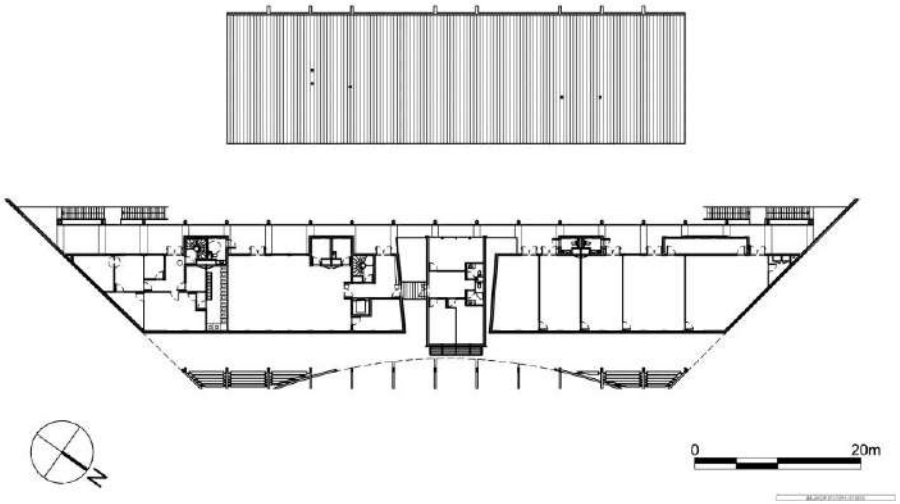


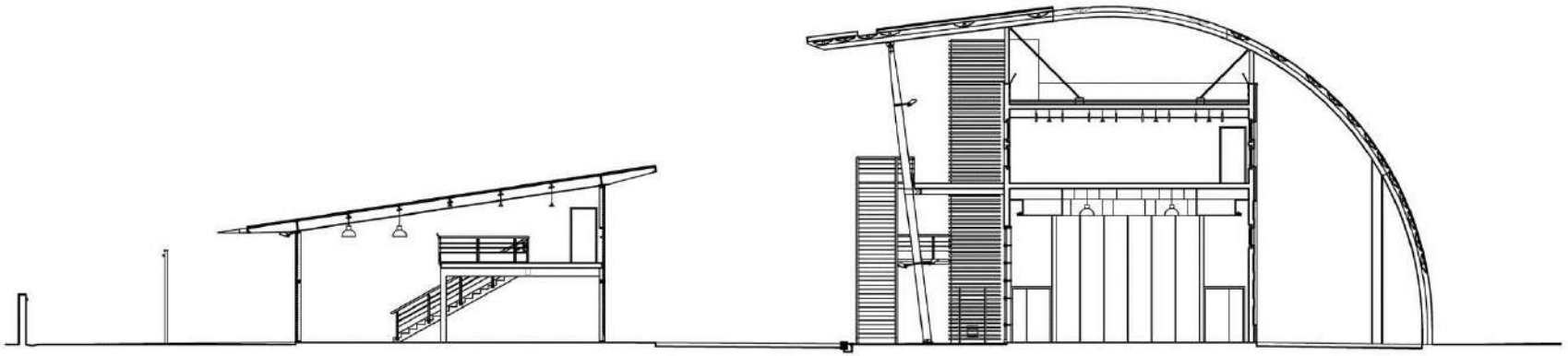

ECOLE DES BEAUX ARTS


AMPHITHEATRE
ENTREE
ECOLE DES BEAUX ARTS

School of Fine Arts and Architecture, about. Reunion (Architecture-Studio (M. Roban, R. Tisnado, J.-F. Bonn, A. Brittagnol, R.-A. Arno, L.M. Fiche, M. Lehman, R. Ayash) and Agence Delcourt, 2002)





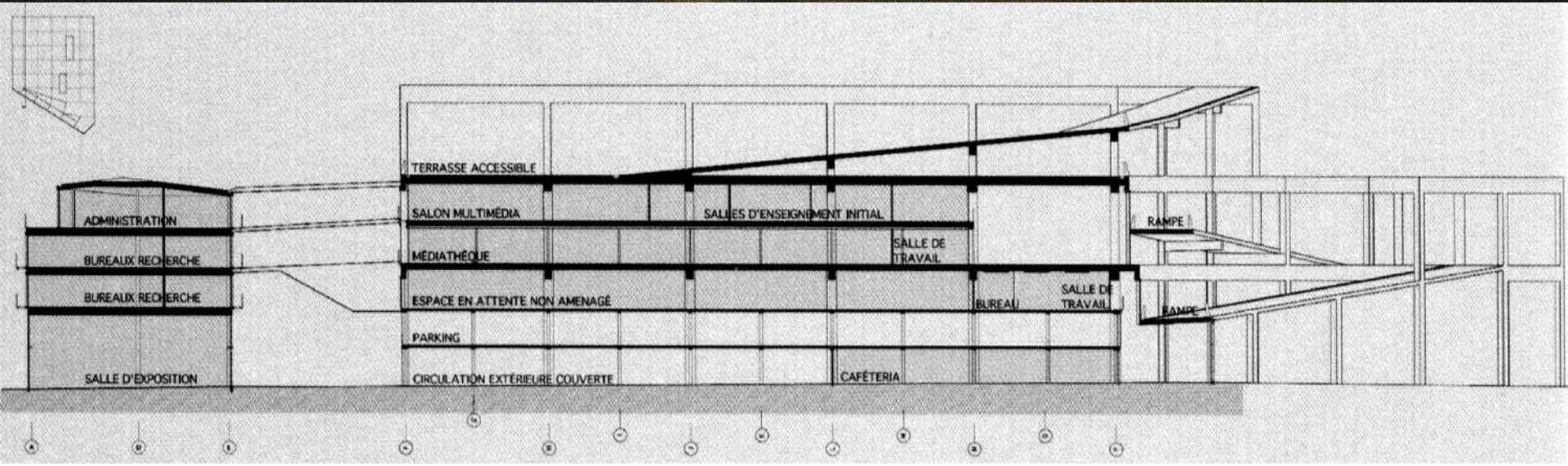


0 10m

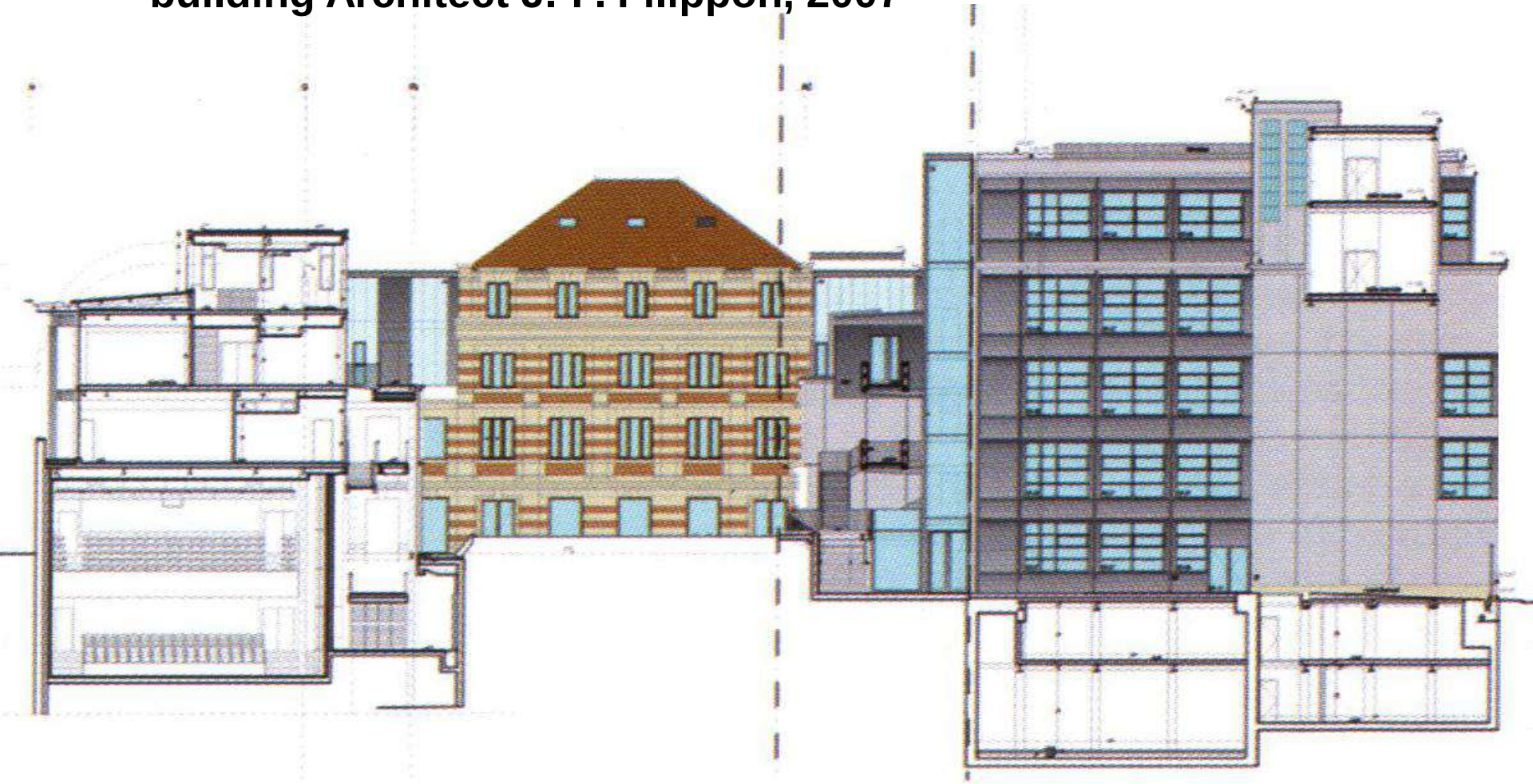
AS, ARCHITECTURE-STUDIO

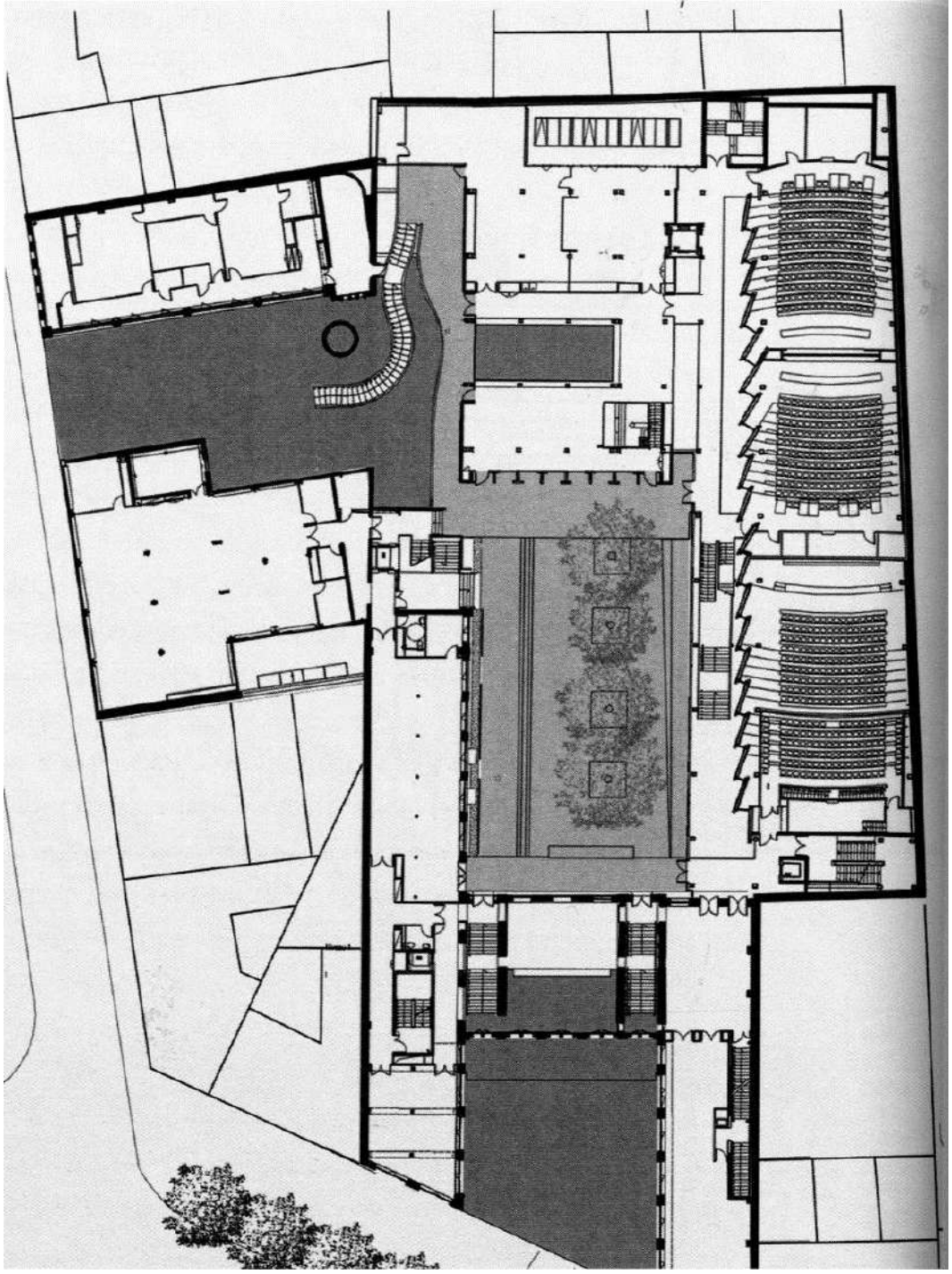
Higher State School of Architecture of Nancy,
Architect L. Vachini, 1995

Higher State School of Architecture of Nantes, the old building is Architect J. Evano and J.-L. Pelleran, 1973-1975

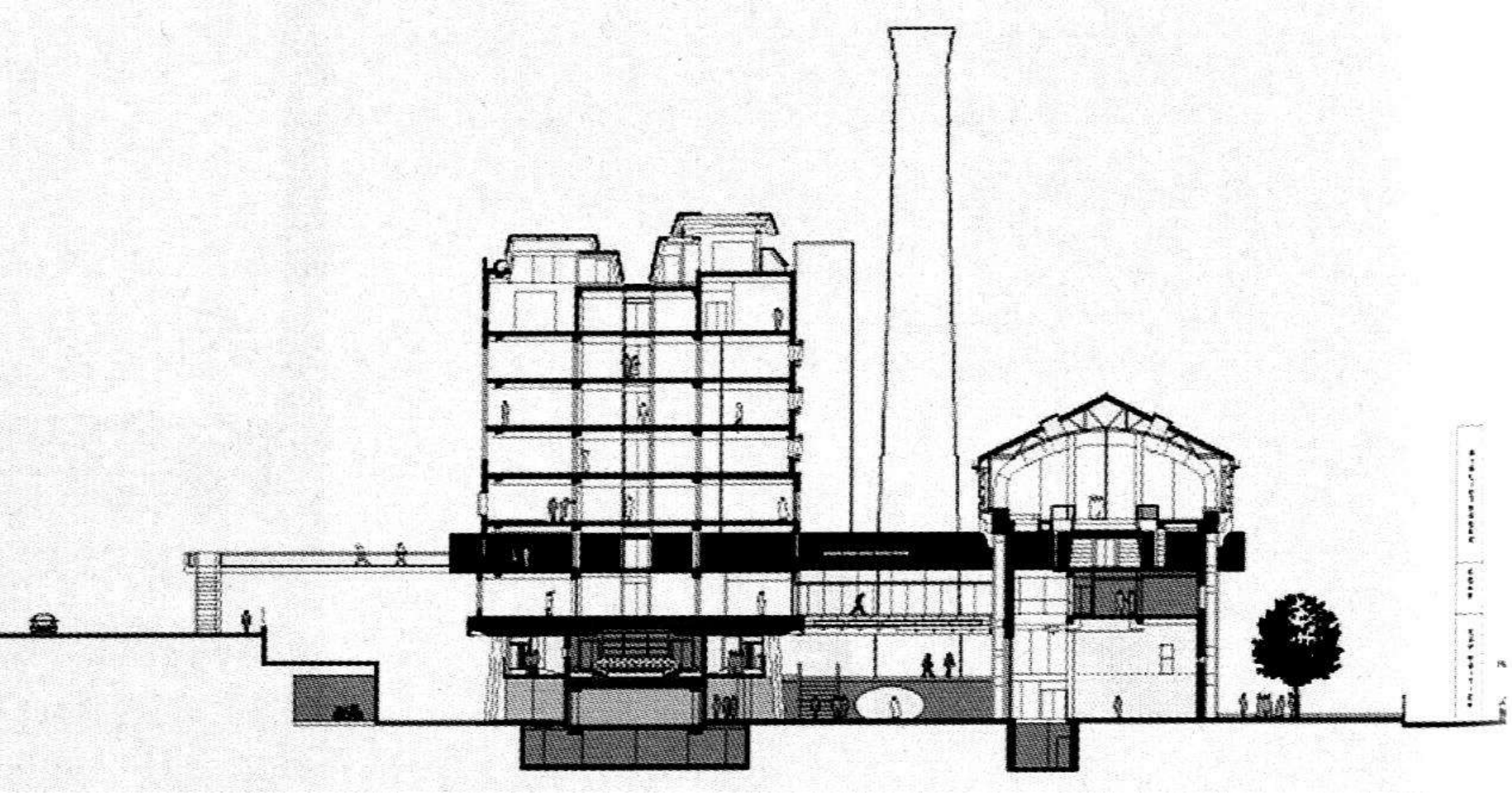

TERRASSE ACCESSIBLE
ADMINISTRATION
SALON MULTIMÉDIA
SALLES D'ENSEIGNEMENT INITIAL
RAMPE
BUREAUX RECHERCHE
MÉDIATHÈQUE
SALLE DE TRAVAIL
BUREAUX RECHERCHE
ESPACE EN ATTENTE NON AMENAGÉ
BUREAU
SALLE DE TRAVAIL
RAMPE
PARKING
SALLE D'EXPOSITION
CIRCULATION EXTÉRIEURE COUVERTE
CAFÉTERIA

- **Paris-Belleville Higher State School of Architecture, new building Architect J.-P. Filippon, 2007**





Paris-Val de Saint Higher State School of Architecture,
Architect F. Borel, 2006



LECTURE 7.

MUSEUM AND EXHIBITION BUILDINGS

The architectural concept of a museum building depends on any type of its display. This determines the specificity and basic nature of the operation of the exposition. At the same time, in modern conditions, when an interdisciplinary vector has been identified and implemented a gateway to dialogue and interculture, a museum building often turns into a universal center of communication for interests, and for different age and social groups of the population. So, there are universal rooms and multifunctional rooms in museums / They are characteristic of buildings with a different functional purpose: educational and production workshops, media theaters, games. Domestic and foreign experience has many museums of scientific and technical achievements. Such buildings are considered as multifunctional leisure centers.

The contents of the exhibits and the servicing of visitors are the basis of the museums, determine the structure, composition and area of the premises. When designing museums, the principle of maximum separation of two main technological flows should be consistently implemented: the route of visitors and the ways of moving exhibits and personnel.

Content of museum activities

Function	Place
Contents of exhibits	
Display	Exhibition halls
Collection and storage	Fund storage, restoration workshops
Study	Workrooms
Visitor Service	
Reception	Lobby, cinema hall, club rooms
Display	Exhibition halls
Information	Information Services, Library

URBAN PLANNING SOLUTION

For museum buildings, three main types of accommodation can be identified, depending on the urban planning situation:

- in the park area - island, free accommodation;
- location in the area of the reconstructed development;
- accommodation in the cultural center of the city.

The museum should be as isolated as possible from the urban environment, protected by green spaces and provided with air filtration and air conditioning system. The site of the museum when placing it in urban buildings should be clearly distinguished.

In the island position of the building, the boundaries of the site are transparent. In case the museum is located in the park, it forms organic unity with it. The site of the museum should allow developing the building in the future. The required area of the museum site depends on the size and collection types.

The museum site is divided into the following functional zones: **entrance, exposition, recreation, storage, facilities.**

The entrance zone. The entrance to the museum should be at least 15 m away from the red line. This is an area for psychological restructuring, sometimes with open-air exhibits.
The exposition zone is most important with functional and com-positional viewpoints. Exposition on the museum site may be rely near the building, or may be connected to the street for the purpose of attracting the public. Most often, the exposition is located near the building, occupying the courtyards and the undeveloped part of the first floor - galleries, aisles, etc.
The recreation zone is intended for relaxation after studying of the exposition. It can be combined with the entrance area in case of isolation of the latter from the city, it can also be close to the open exposition.
The facility zone is designed to room the engineering services needed by the museum: a heat station, a transformer substation, as well as warehouses and garages. Modern trends are aimed at abandoning a developed **facility** zone: technical premises should, if possible, be placed in the basement of the building. Its placement is recommended from the side of getting exhibits.

In the European model the public spaces of museums are named: the museum **Square** in Amsterdam, the museum **quarter** in Vienna, the museum **park** in Bergen, the museum **bank** in Frankfurt am Main, the Museum **island** in Berlin and Stockholm. The key concept is "museum," the second word means the type of public space organization: island, park, bank, etc.

Exposition Area and Territory Size

Exposition area, м^2	Territory Size**, ga**
500	0,5
1000	0,8
1500	1,2
2000	1,5
2500	1,8
3000	2,0

Most common area ratios of functional areas of the site

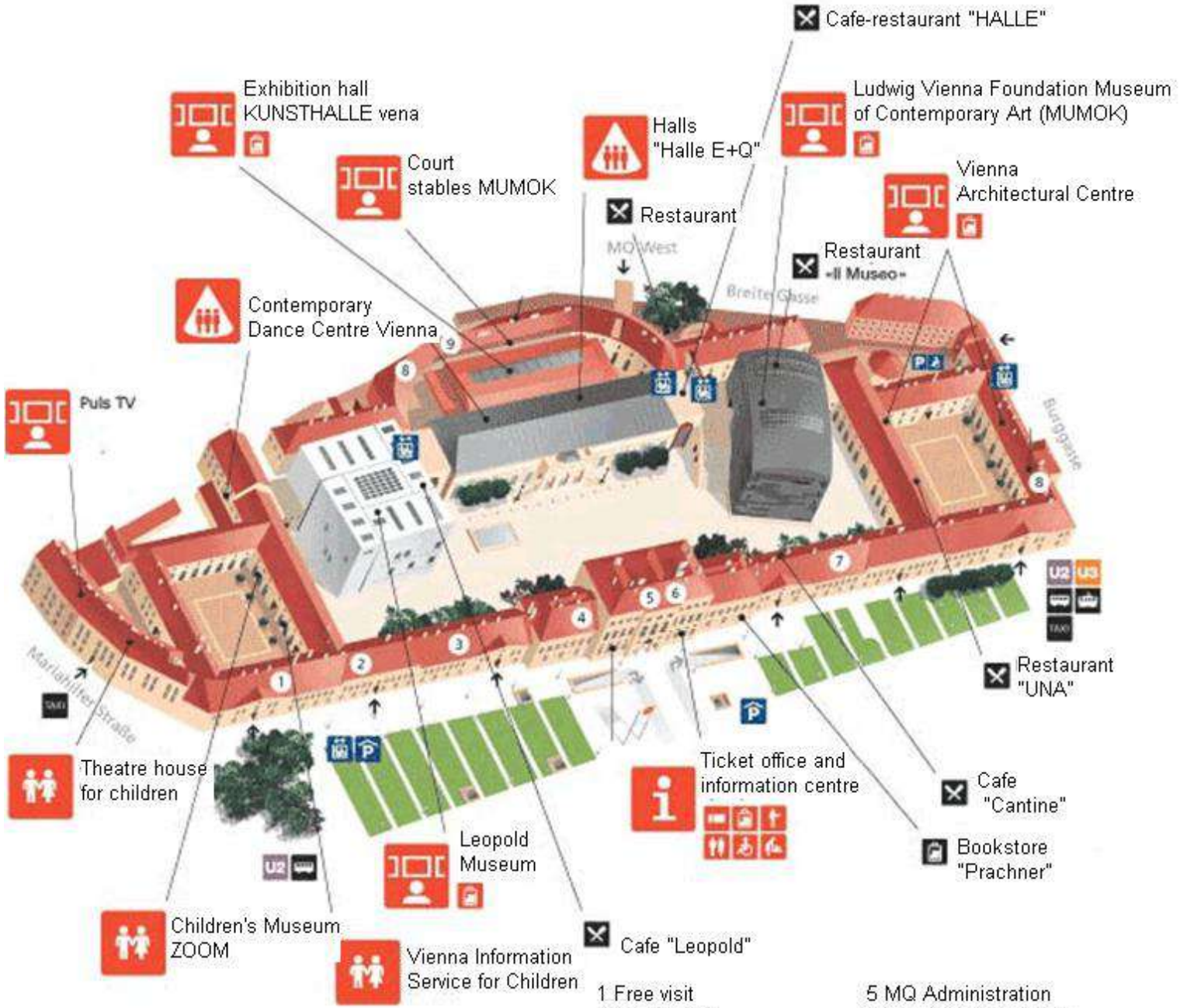
Building area, %	25-30
Entrances, walkways, parking areas, %	10-15
Open Exposition zone, %	10-15
Gardening, %	30-40
Facility zone, %	5-10


MUSEUM Square in AMSTERDAM

MUSEUM OF VAN GOGH in AMSTERDAM, ARH. G. RITVELD, PROJECT 1963, REALIZATION 1973; K. KUROKAWA, 1999; HANS VAN HASWICK, 2015

STEDELIK MUSEUM, BENTHEM CROWWEL ARCHINECTS, 2010

MUSEUM QUARTER IN VIENNA

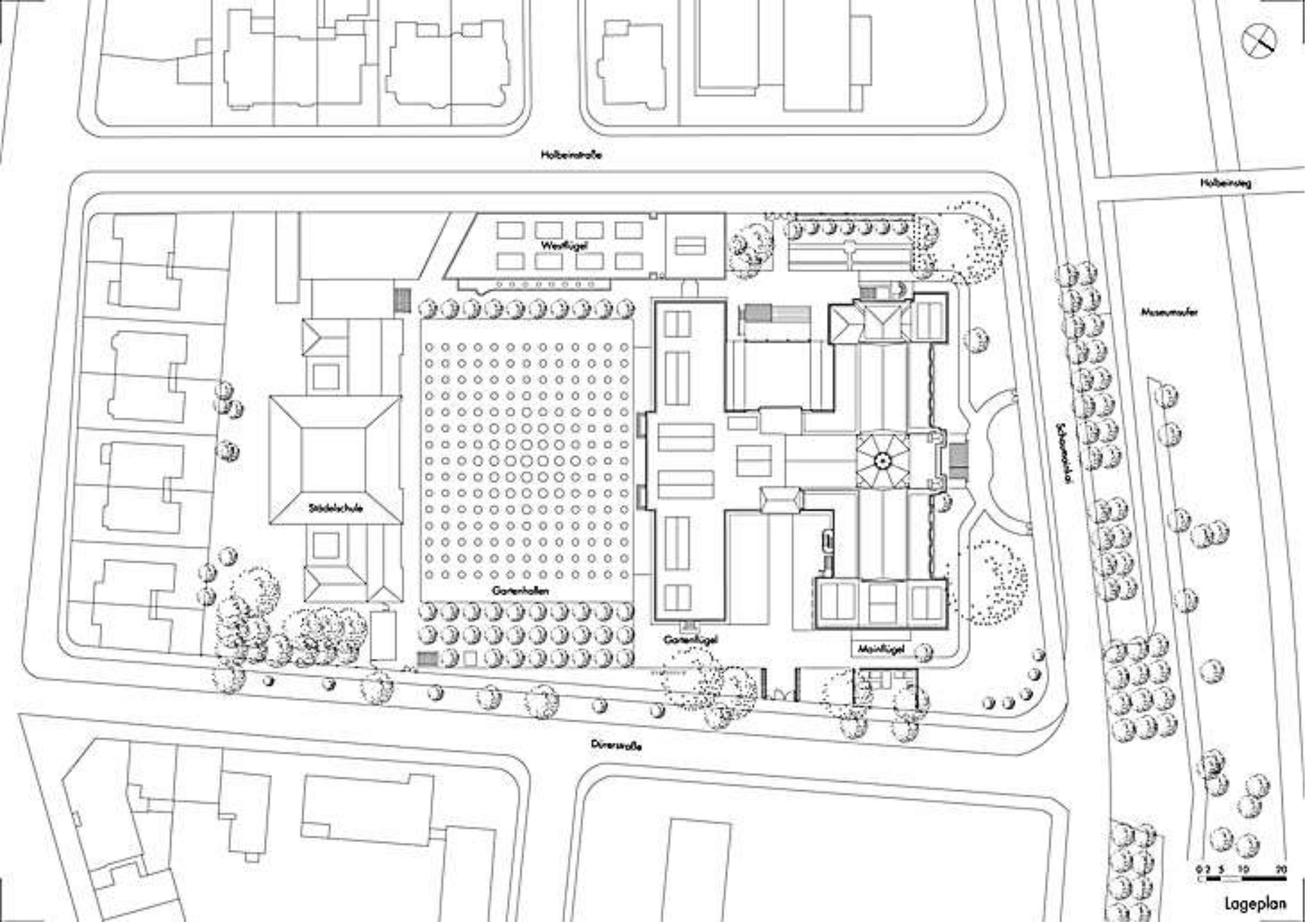

Cafe-restaurant "HALLE"
Exhibition hall
KUNSTHALLE vena
Court
stables MUMOK
Halls
"Halle E+Q"
Ludwig Vienna Foundation Museum
of Contemporary Art (MUMOK)
Vienna
Architectural Centre
Restaurant
MQ West
Restaurant
«Il Museo»
Breite Gasse
Contemporary
Dance Centre Vienna
Puls TV
Burggasse
Restaurant
"UNA"
Mariahilfer Straße
Theatre house
for children
Ticket office and
information centre
Cafe
"Cantine"
Leopold
Museum
Bookstore
"Prachner"
Children's Museum
ZOOM
Vienna Information
Service for Children
Cafe "Leopold"
1 Free visit
2 transeuropa
3 Arena
4 Oval Hall MQ
5 Conference rooms MQ
5 MQ Administration
6 Cultural Work Bureau
7 Electric Avenue
8 Art studios
9 Oval tract

MUSEUM COMPLEX "MUSEUM QUARTER" LEOPOLD-MUSEUM, MUSEUM OF MODERN ART MUMOK, ORTNER AND ORTNER, MANFRED VEDORN, 1998- 2001

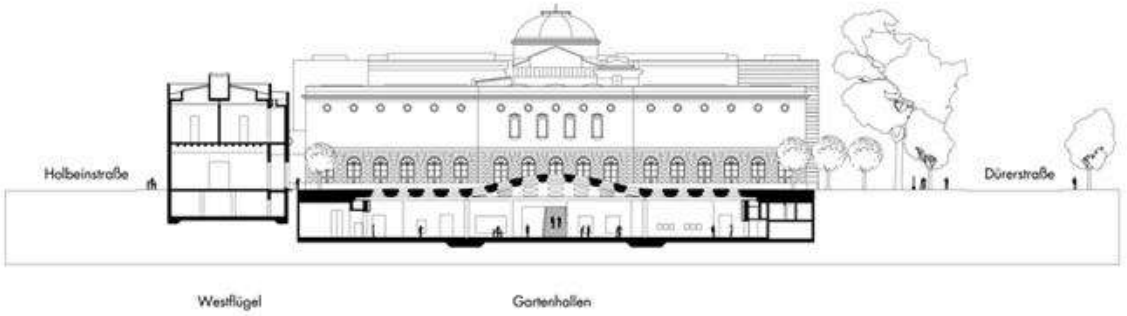
ALBERTINE MUSEUM IN VIENNA

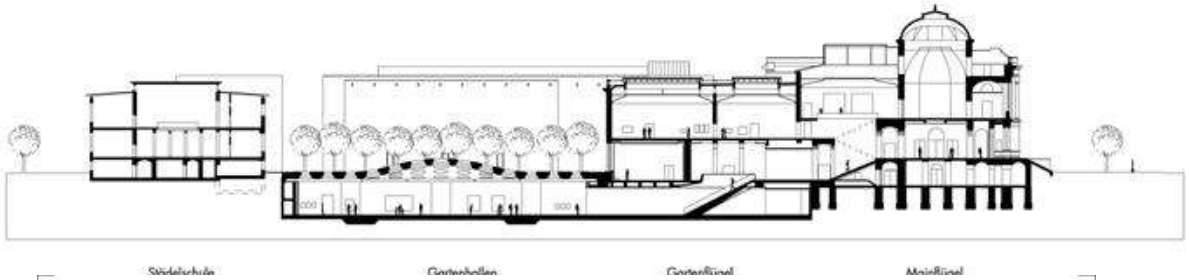
MUSEUM BANK IN FRANKFURT ON THE MAIN

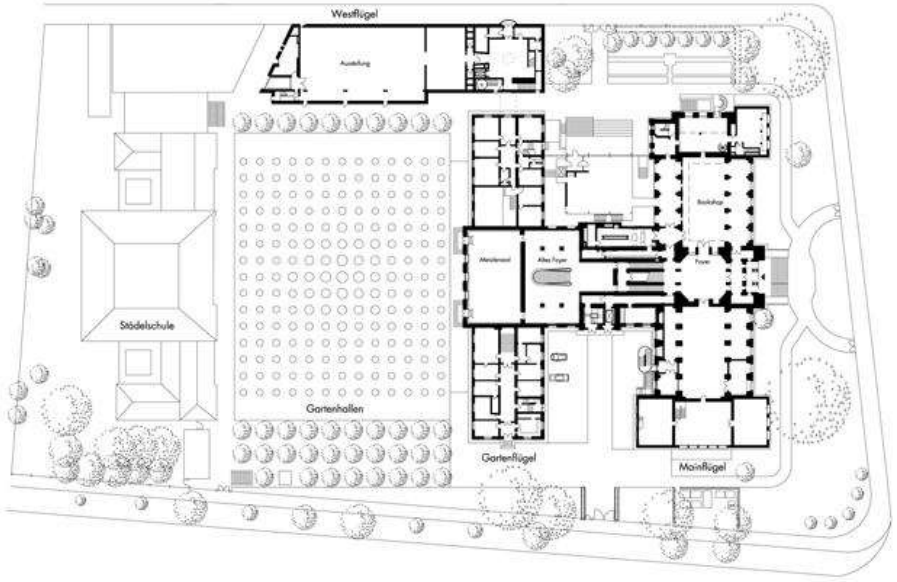
MUSEUM OF APPLIED ARTS,
RICHARD MEYER, 1985



EXPANSION OF STAEDEL MUSEUM, ARCH. SCHNEIDER + SCHUMACHER, 2012







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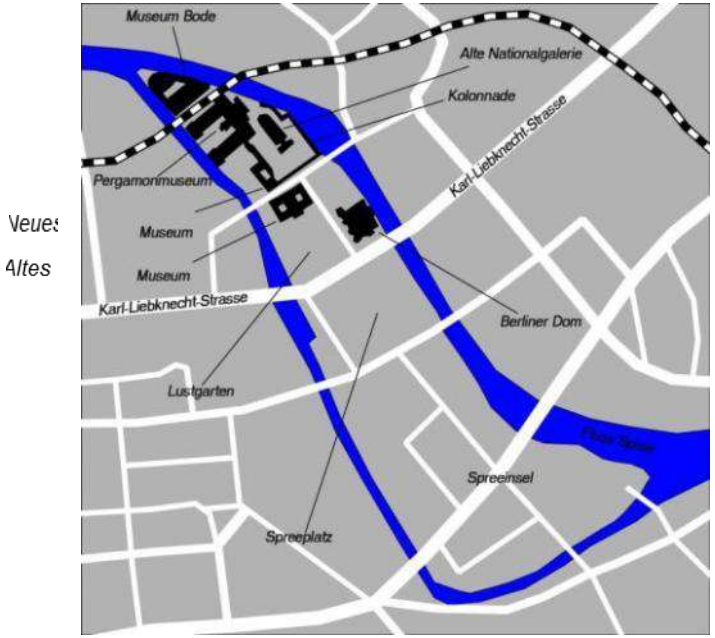
Erdgeschoss


nationale suisse

MUSEUM ISLAND IN BERLIN




ALTES MUSEUM
ANTIKE
ANTIKE
ALTES MUSEUM

BASTIAN GALLERY IN BERLIN, DAVID CHIPPERFIELD, 2003-2007

NEW BUILDING OF THE HISTORICAL MUSEUM IN BERLIN, J.-M. PEI, 1998-2003

MUSEUM ISLAND IN STOCKHOLM

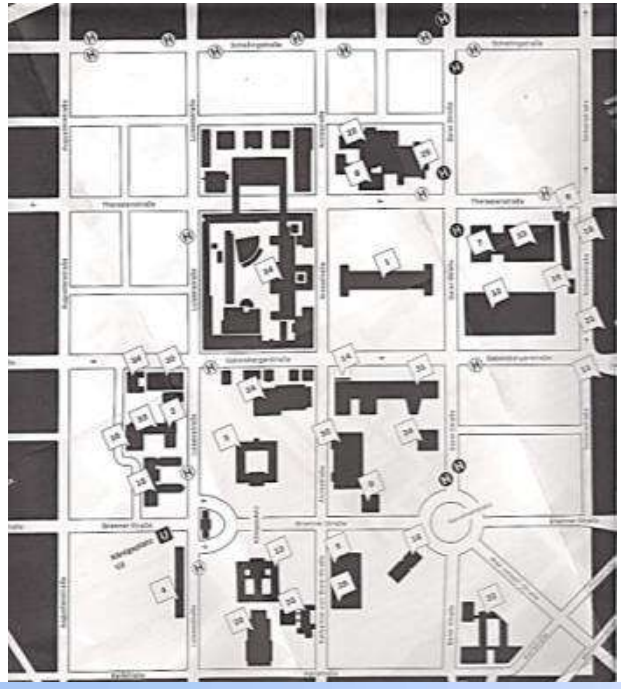

Junibacken

MUSEUM PARK IN BERGEN


BERGEN KUNSTMUSEUM


manenten

KUNSTAREAL IN MUNICH




AERI
TEC
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JEFF
WALL
IN
MUNCHEN

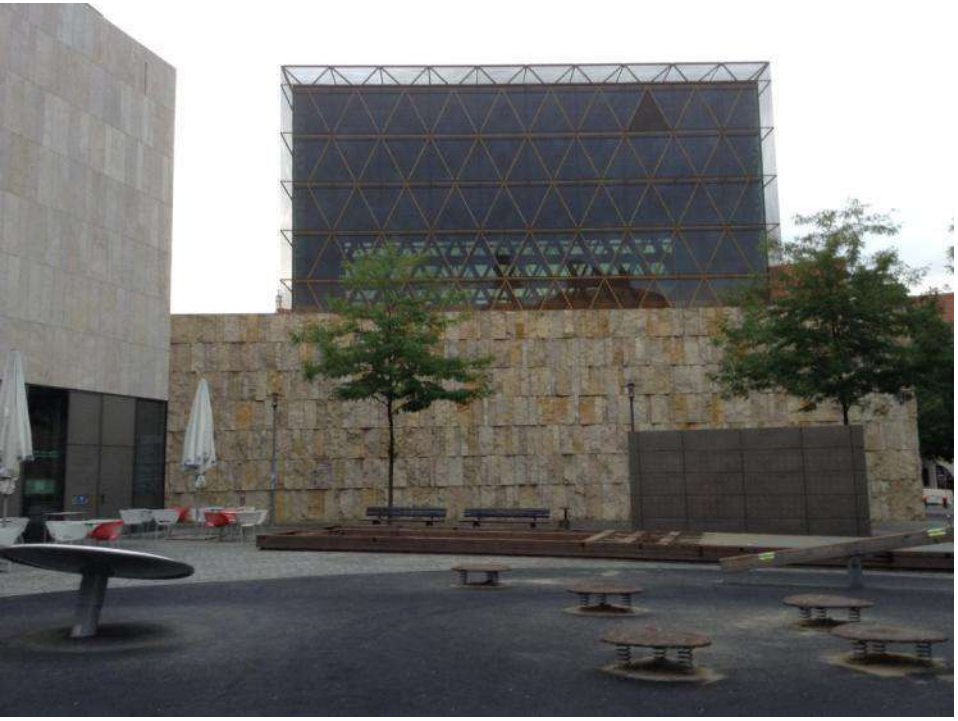

READING ANDY WARHOL

NEW PINACOTECA, ARCH, ALEXANDER VON BRANCK, 1981

PINAKOTHEK MODERN, ARCH. STEFAN BRAUNFELS, 2002


AFRI
TEC

BRANDHORST MUSEUM, SAUERBRUCH HUTTON, 2005-2008

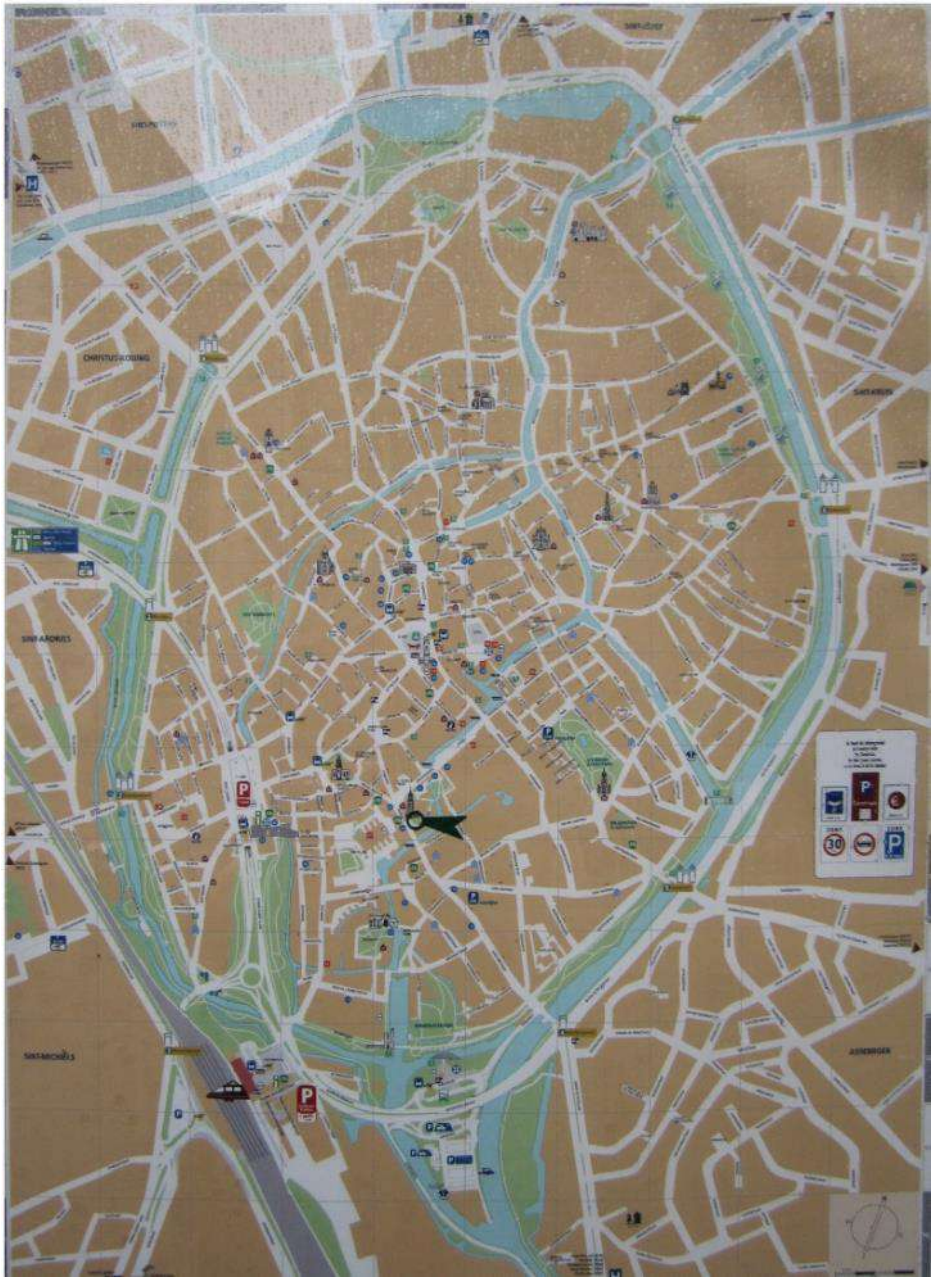


JEWISH CULTURAL CENTER IN MUNICH, WANDEL HOIFER LOCH, 2006-2007

CITY GALLERY IN VILLA LENBACH, GABRIEL VON SEIDEL, 1887-1891, RECONSTRUCTION OF ARCHITECT N. FOSTER, 2013

CITY-MUSEUM. BRUGES


Struders huis



Premises and functional areas of the museum

View of rooms by purpose	Functional areas of the museum	
	A - visitor	B - service
Main	Permanent exhibition, temporary exhibitions	Repositories
Auxiliary	Cinema hall, club hall, recreation area, information rooms	Employee Workrooms, Labs, Workshops, Library
Serving	Lobby, cloak-room, buffet, gift shops, WC	Office lobby, storage rooms, equipment rooms, bathrooms, technical rooms

Depending on the preferred use by visitors or employees, the museum premises are divided into two main zones:

A - visitor (open);

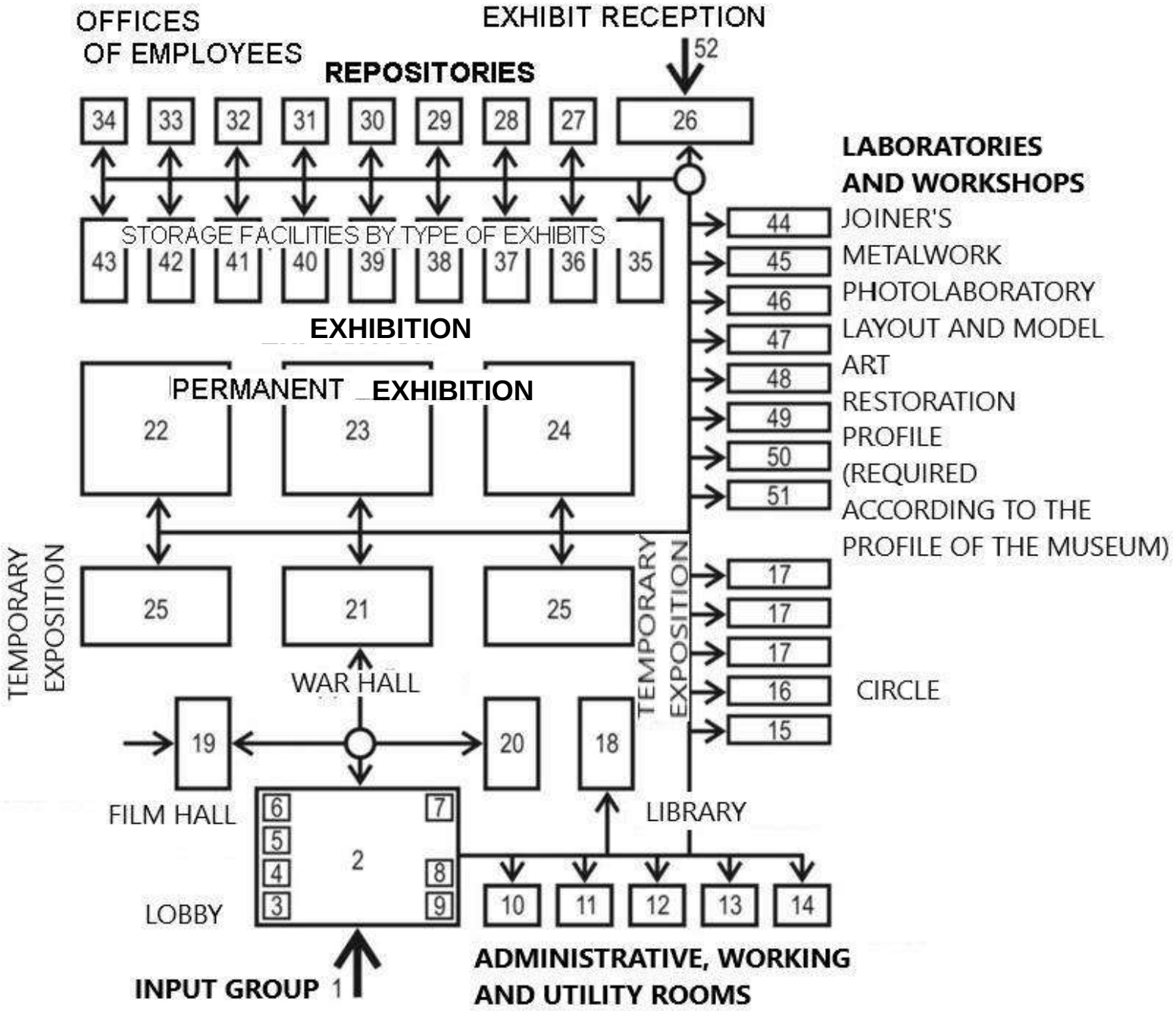
B - service (closed).

The distribution of areas among the main groups of rooms depends on the profile of the museum, its size and significance. Estimated room ratios:

- exposition halls - 45 - 55%;
- fund storage - 20-25%;
- auxiliary and maintenance rooms 35%.

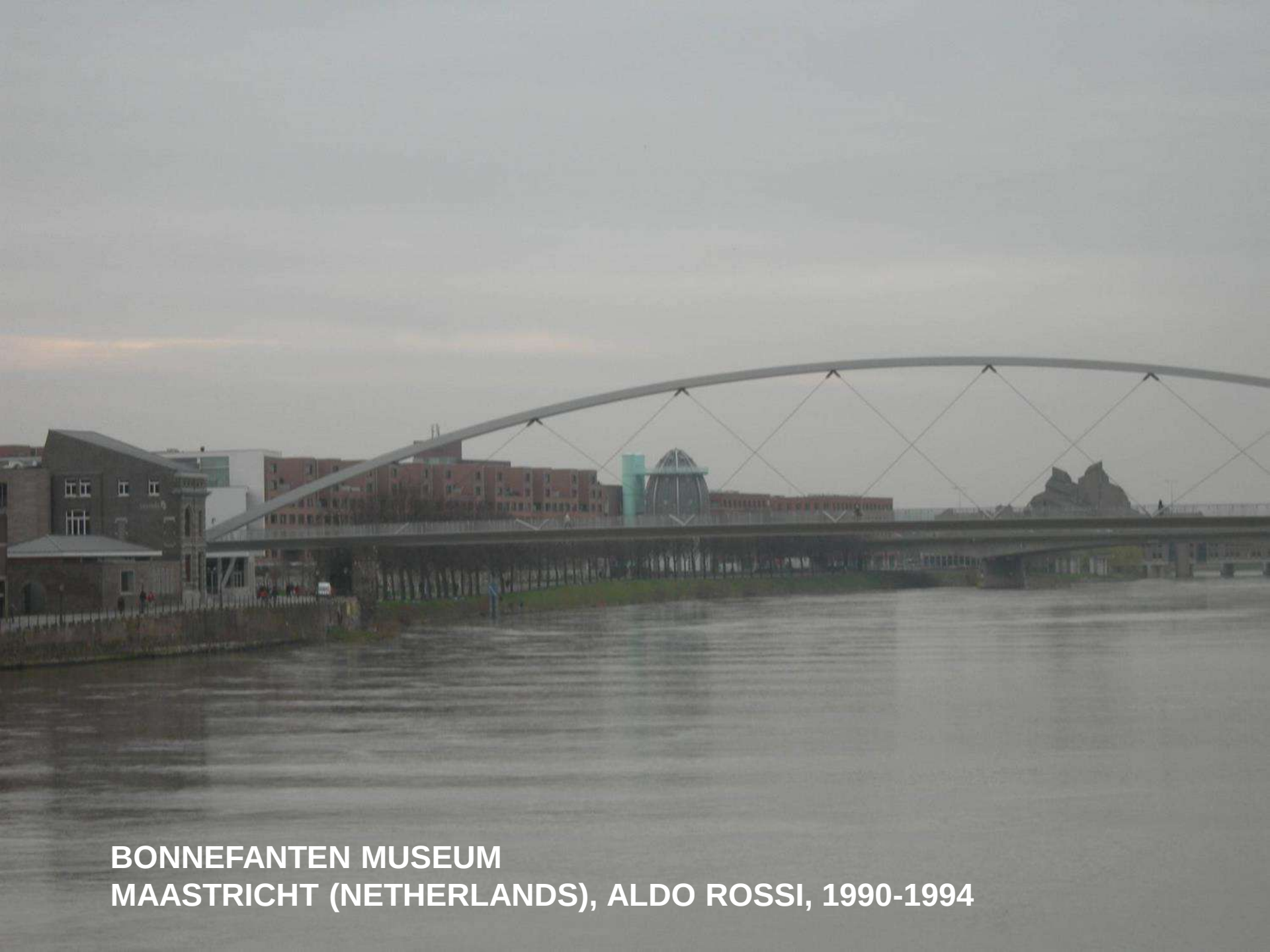
The main functional blocks of the museum building:

- entrance group of rooms;
- exposition part;
- film section hall;
- administrative, working and utility rooms, library;
- laboratories and workshops;
- fund storage;
- facility rooms.


OFFICES
OF EMPLOYEES
EXHIBIT RECEPTION
52
REPOSITORIES
34
33
32
31
30
29
28
27
26
LABORATORIES
AND WORKSHOPS
STORAGE FACILITIES BY TYPE OF EXHIBITS
43
42
41
40
39
38
37
36
35
44
JOINER'S
45
METALWORK
46
PHOTOLABORATORY
47
LAYOUT AND MODEL
48
ART
49
RESTORATION
50
PROFILE
51
(REQUIRED
ACCORDING TO THE
PROFILE OF THE MUSEUM)
EXHIBITION
PERMANENT EXHIBITION
22
23
24
TEMPORARY
EXPOSITION
25
21
25
TEMPORARY
EXPOSITION
17
17
17
16
15
CIRCLE
WAR HALL
19
20
18
FILM HALL
LIBRARY
6
5
4
3
2
7
8
9
LOBBY
10
11
12
13
14
INPUT GROUP 1
ADMINISTRATIVE, WORKING
AND UTILITY ROOMS

The composition and relationship of the museum premises (according to V.I. Revyakin):
A. Entrance zone: 1 - main entrance; 2 - lobby; 3 – cloak-rooms;
B. 4 - cash desk; 5 - book and souvenir shop; 6 - emergency room
course guides; 7 - buffet; 8 - sanitary units; 9 - security post.
B. **Exhibition area**: 21 - introductory hall; 22-24 - rooms of permanent ex-
items; 25 - halls of temporary exposition.
V. **Cinema hall** - 19.
G. **Administrative, working and utility rooms**: 10 - Office of the Director
torus; 11 - receptionist's reception room; 12 - office of the deputy director;
13 - Office and Accounting; 14 - staff room; 15 – public relations
department; 16 – clubs; 17 - office of researchers; 18 - library;
20 - exhibition hall.
D. **Laboratories and workshops**: 44 - carpentry; 45 - locksmith; 46 – photo laboratory;
47 – model workshop; 48 - art workshop;
49 - restoration workshop; 50-51 - other workshops depending
from the profile of the museum; 52 - service entrance.
E. **Fund storage**: 26 - reception room of exhibits; 27 - insulator; 28 - decameasure; 29 -
material storage room; 30 - room for storage
equipment wear; 31 - working room with catalogs; 32 - scientific
archive; 33-34 - offices of the head of funds and employees; 35-43 - storage
niches by type of exhibits

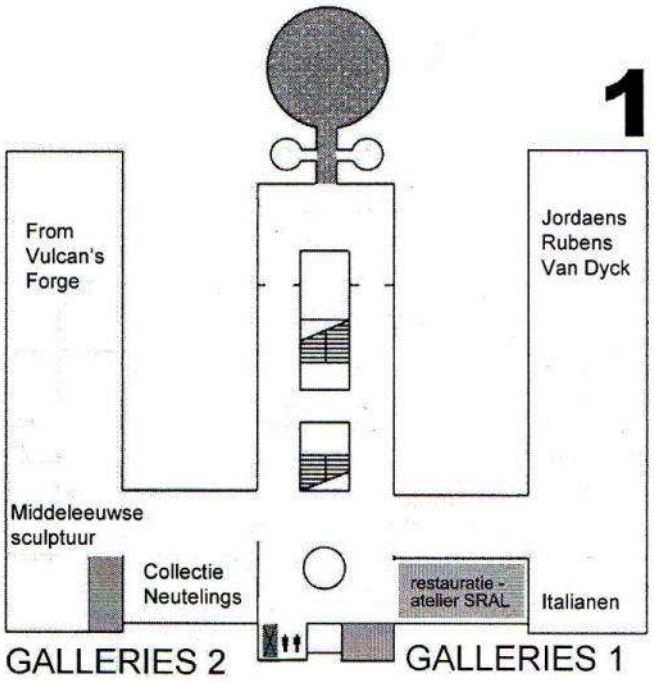
- **STATE RUSSIAN MUSEUM IN ST. PETERSBURG**

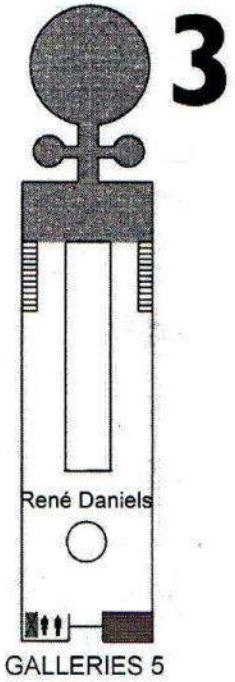


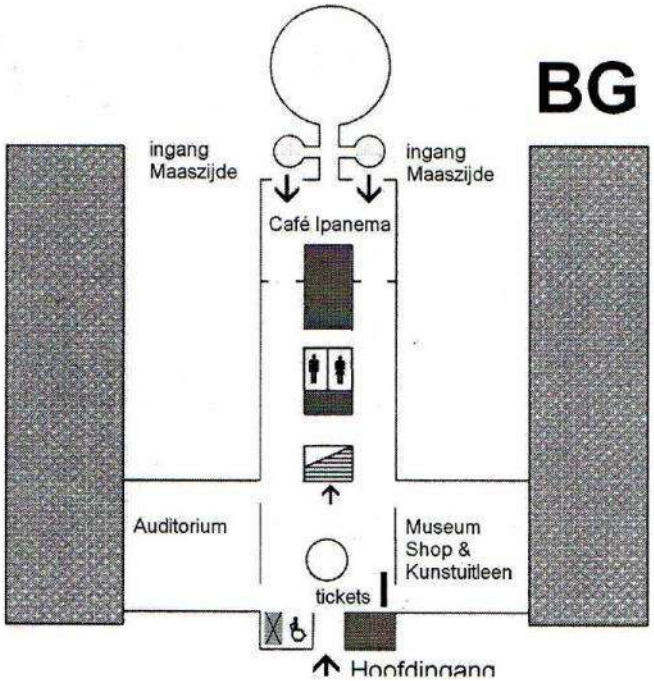
BONNEFANTEN MUSEUM
MAASTRICHT (NETHERLANDS), ALDO ROSSI, 1990-1994

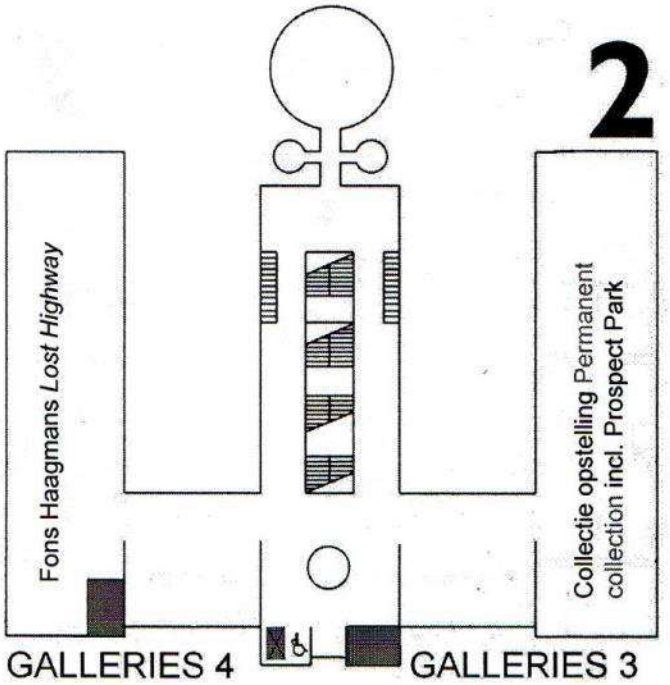

CAFE

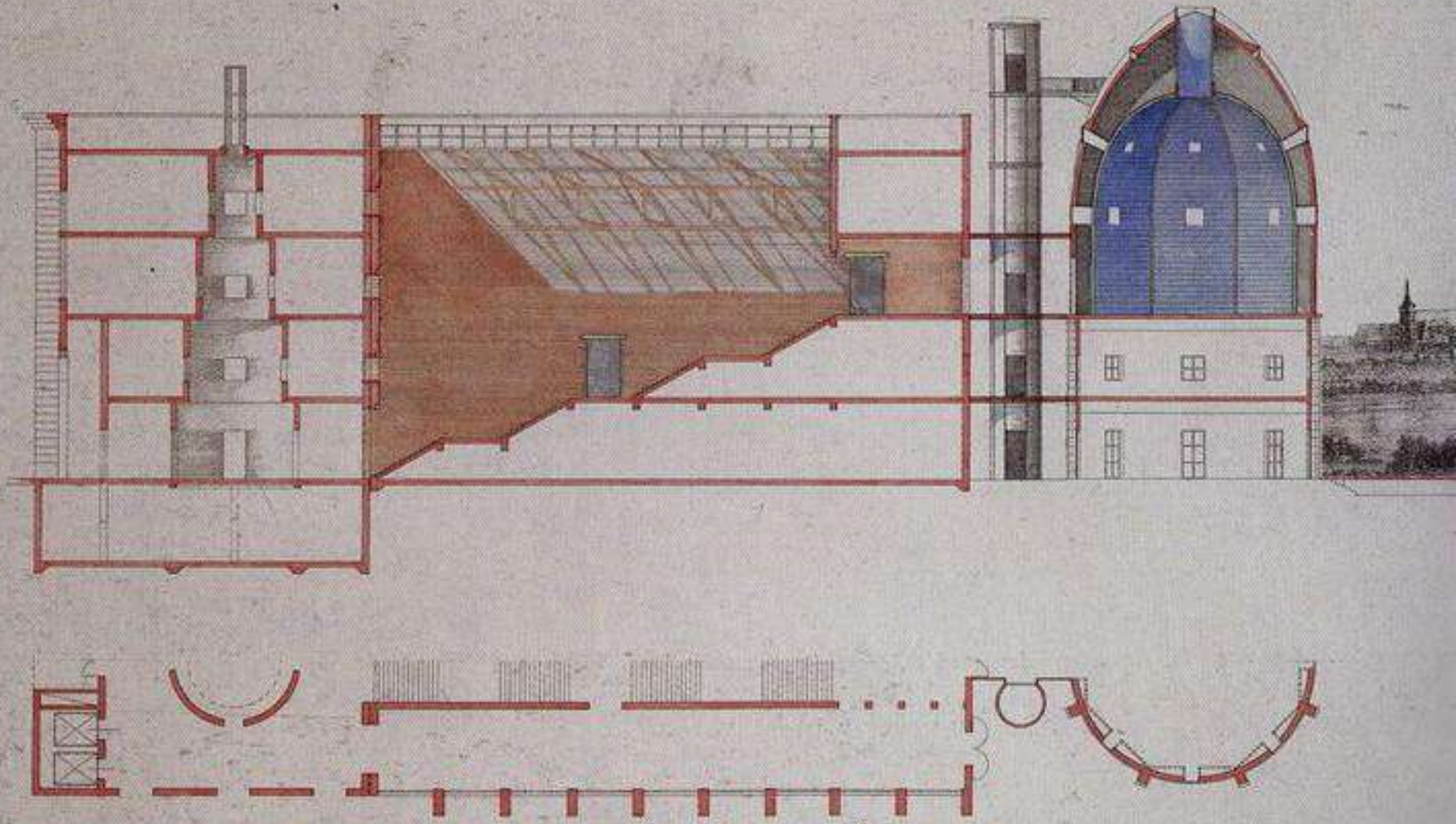

CAFE


1
From Vulcan's Forge
Jordaens Rubens Van Dyck
Middeleeuwse sculptuur
Collectie Neutelings
restauratie - atelier SRAL
Italianen
GALLERIES 2
GALLERIES 1

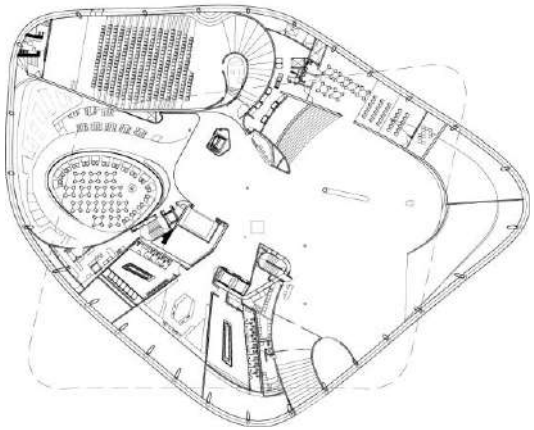

3
René Daniels
GALLERIES 5

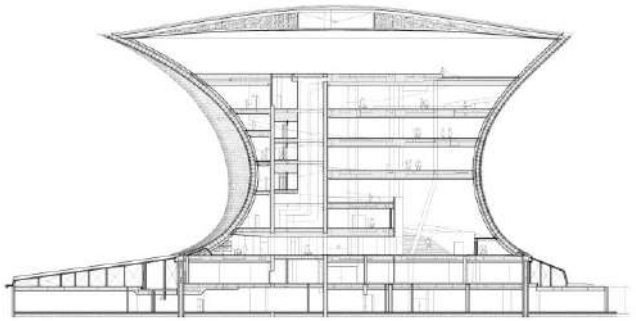

BG
ingang Maaszijde
ingang Maaszijde
Café Ipanema
Auditorium
Museum Shop & Kunstuitleen
tickets
Hoofdingang

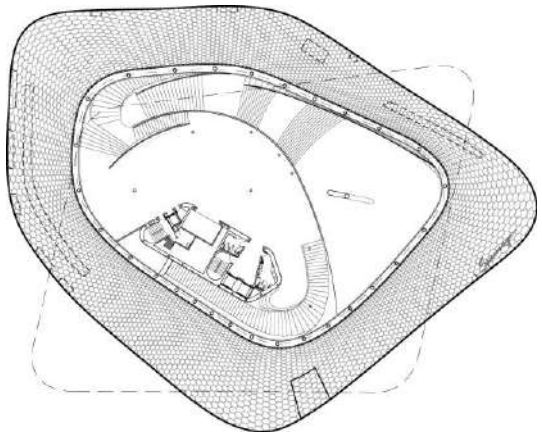

2
Fons Haagmans *Lost Highway*
Collectie opstelling Permanent collection incl. Prospect Park
GALLERIES 4
GALLERIES 3

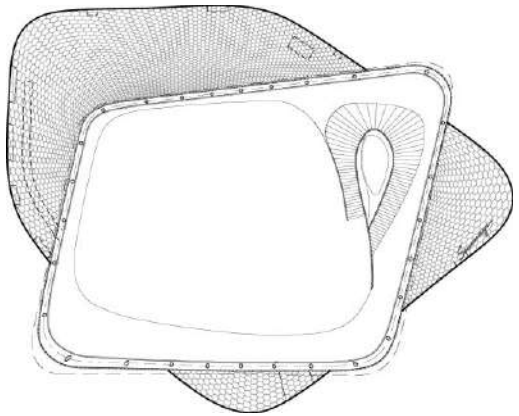


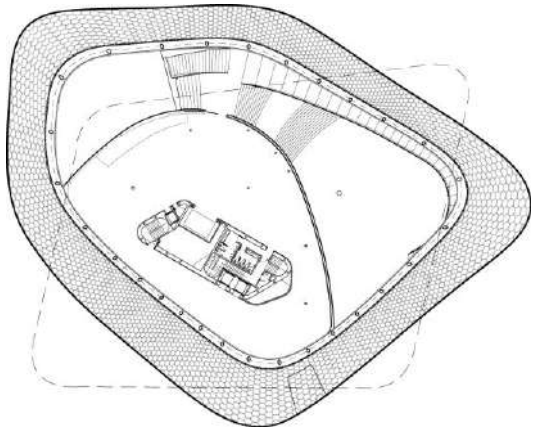
SUMAYA MUSEUM IN MEXICO CITY, FERNANDO ROMERO, 2011

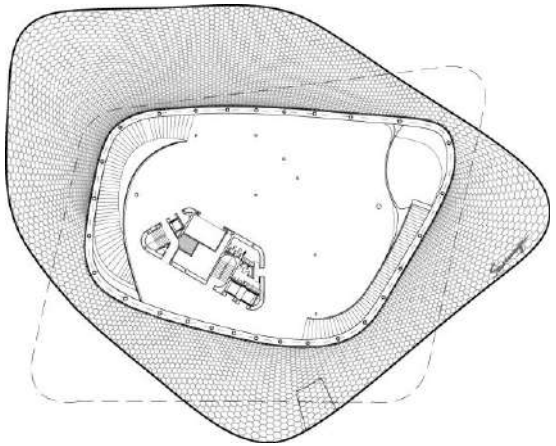






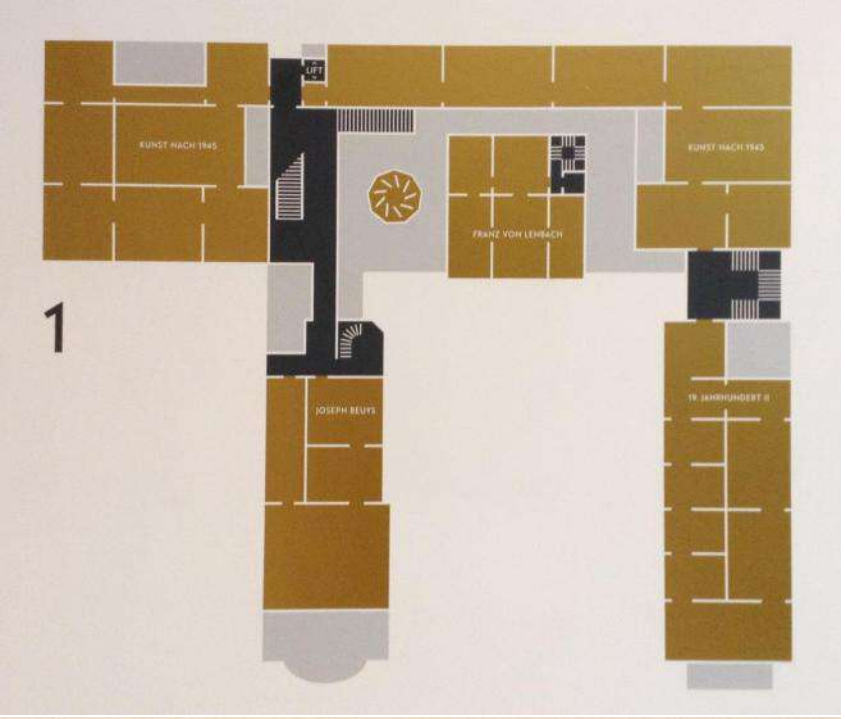






CITY GALLERY IN VILLA LENBACH, ARCH. GABRIEL VON SEIDEL, 1887-1891, RECONSTRUCTION OF N. FOSTER, 2013


ZONE
werktags
9-23h
Bewohner mit
Parkausweis
Königsplatz
frei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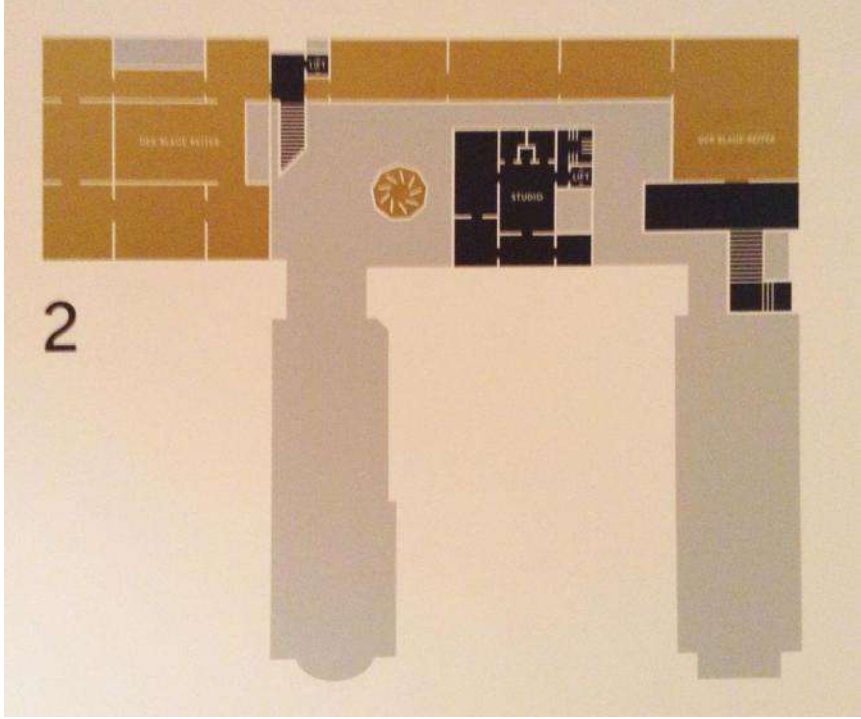
KUNST NACH 1945
LIFT
FRANZ VON LENBACH
KUNST NACH 1945
JOSEPH BEUYS
19. JAHRHUNDERT II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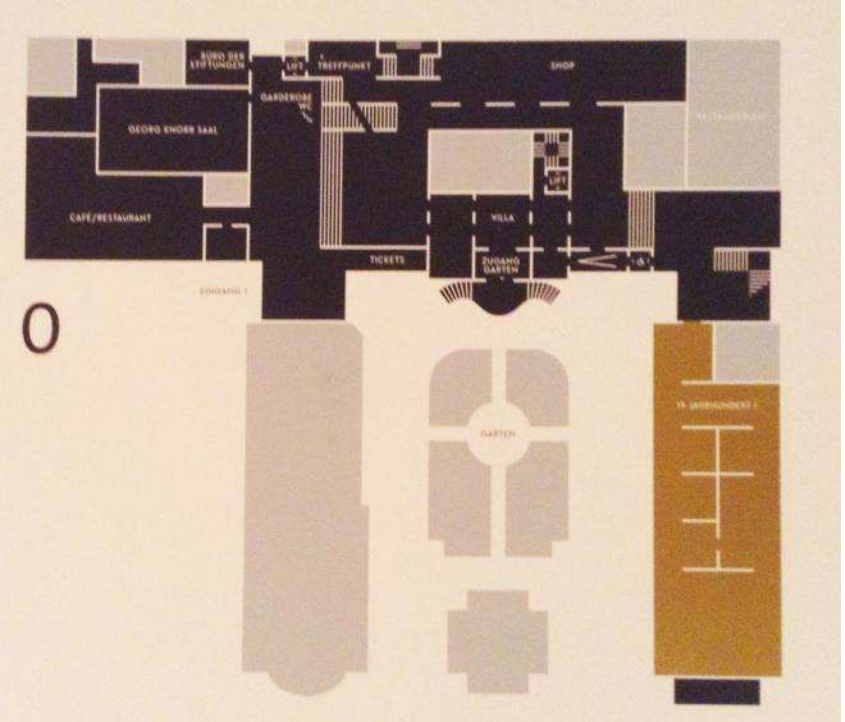
DER BLAUE REITER
STUDIO
DER BLAUE REITER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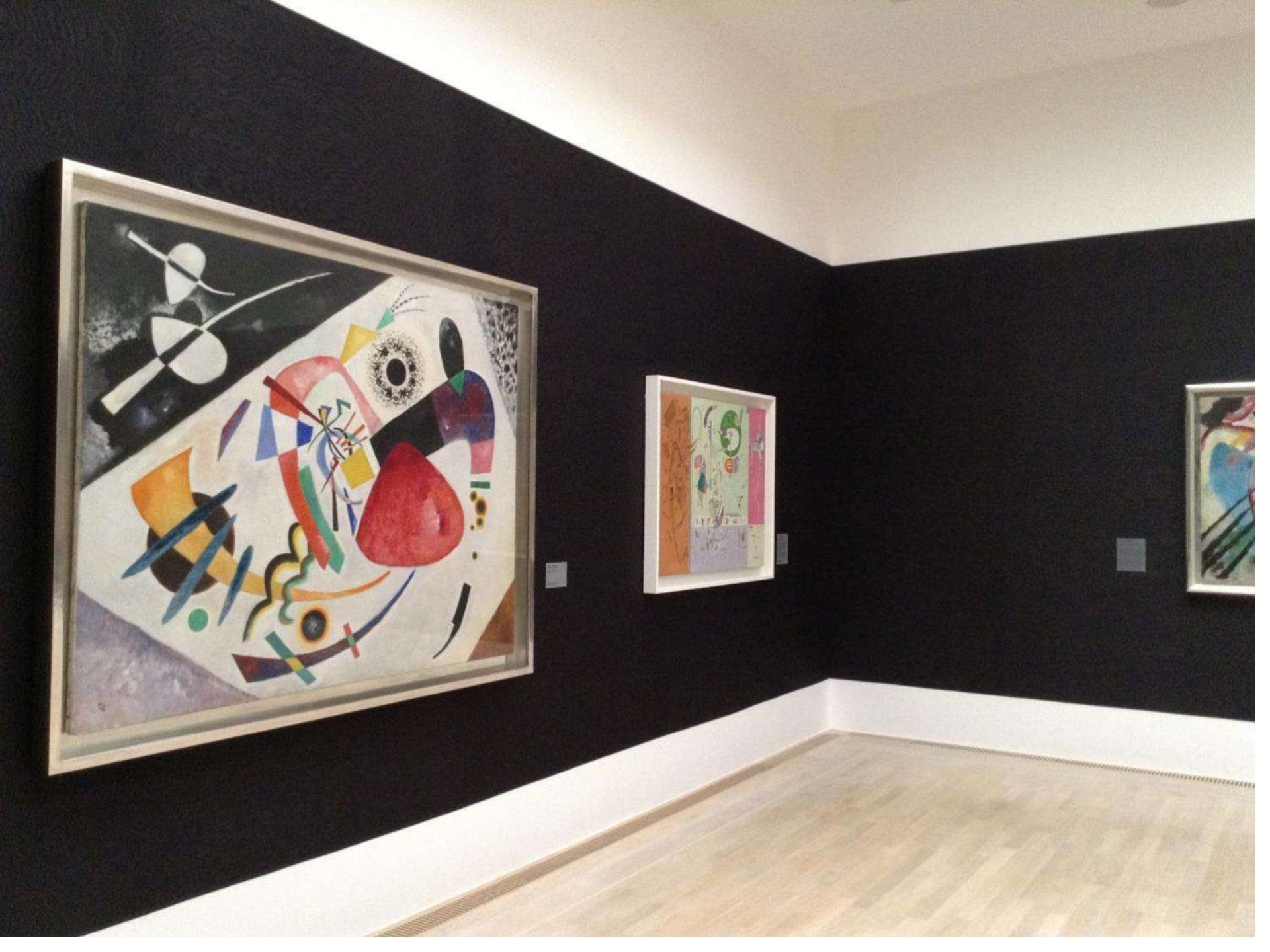
BÜRO DER STIFTUNGEN
LIFT
TREFFPUNKT
SHOP
GARDEROBE
GEORG KNOBR SAAL
CAFE/RESTAURANT
VILLA
TICKETS
ZUGANG GARTEN
GARTEN
19. JAHRHUNDERT I



The entrance space group. The lobby is an important element from which the development of museum space begins. It is here where excursion routes begin and finish, and a visitor begins to get the first impression of the museum from here.

It should be noted that the peculiarity of the entrance group of the museum building or complex is that it must be designed both for mass and non-mass excursions.

In this regard, the lobby should be functional and planned. It includes: cloak rooms; places for meeting excursion groups and individual visitors; information service, rest and ticket check, ticket offices, buffets, stores selling catalogues, books and souvenirs, sanitary units.

Exhibition halls

The exhibition halls are the main rooms of the museum, which form the architectural composition of the building and its artistic image. The architectural and spatial construction of halls - size, shape, a system of relationships between them, with the rest of the rooms and the surrounding space. It is determined by the specificity of the exhibition. The general requirements for exhibition halls are:

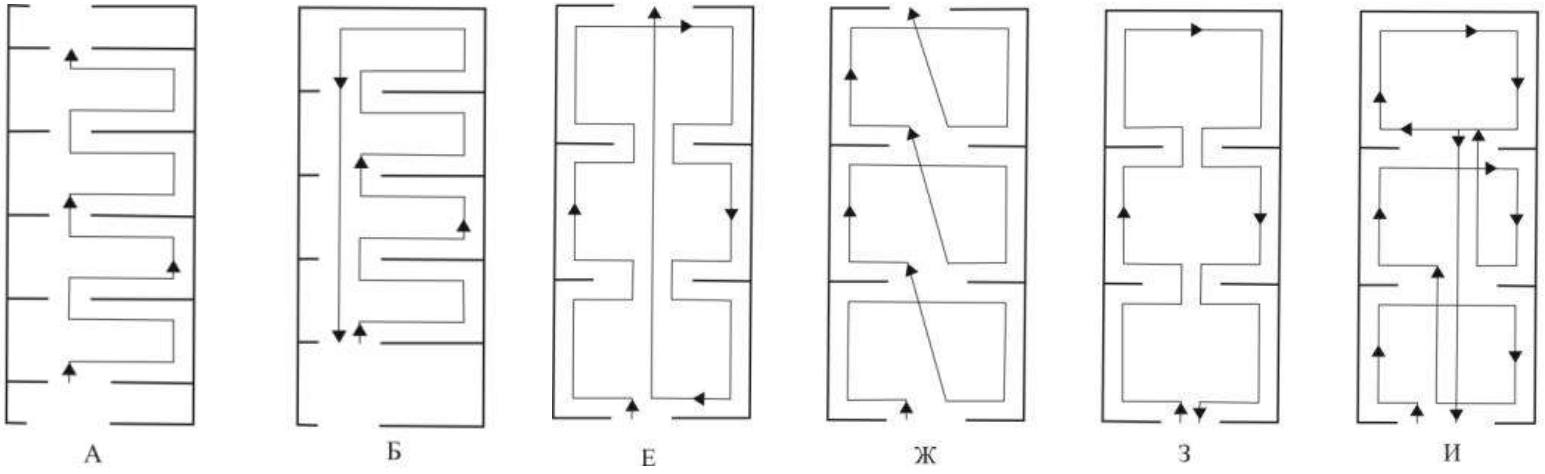
- spatial and artistic planning of halls in accordance with themes of exhibitions;
- possibility to organize an end-to-end route throughout
museum and selective study of main halls;
- possibility of transformation in the structure of halls in time in connection with exhibition changes;
- connection with open exhibition;

inclusion in the structure of the exhibition halls of special recreation areas and rooms for exhibition preparation and storage.

The exhibition area for 1 visitor is 3-4 m2.

Height of ordinary exhibition halls is equal 4-5 m, large halls - 6-8 m. The height of the exhibition exposition is 1.50-1.70 m at a distance of 0.8-0.9 m from the floor. Length of exposition must not exceed 20-50 m.

Small museums (with an exhibition area of up to 500 m2) must be provided with possibility of exhibition organization.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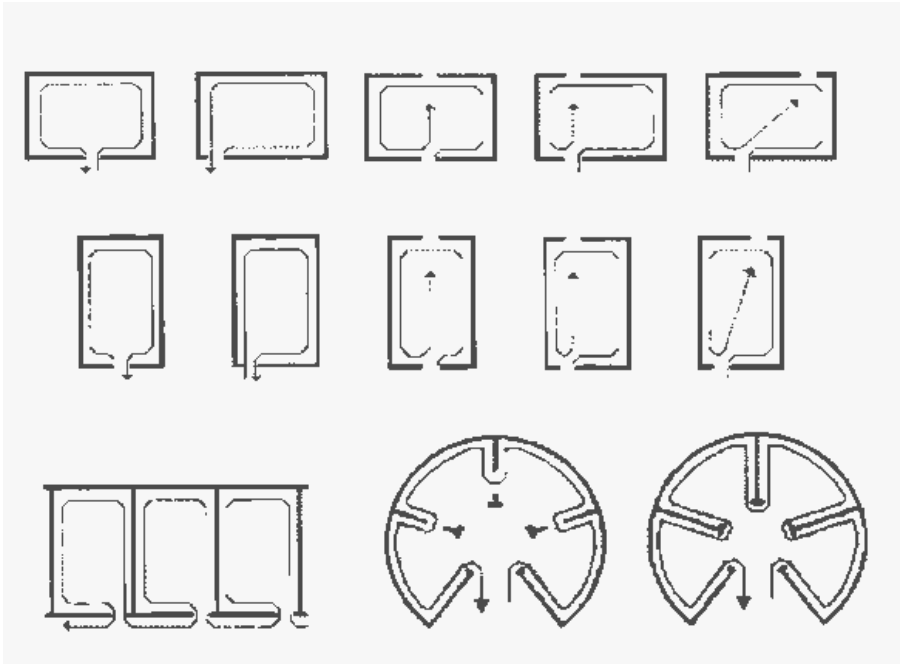

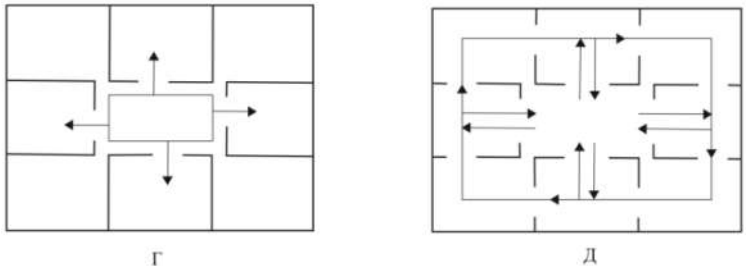
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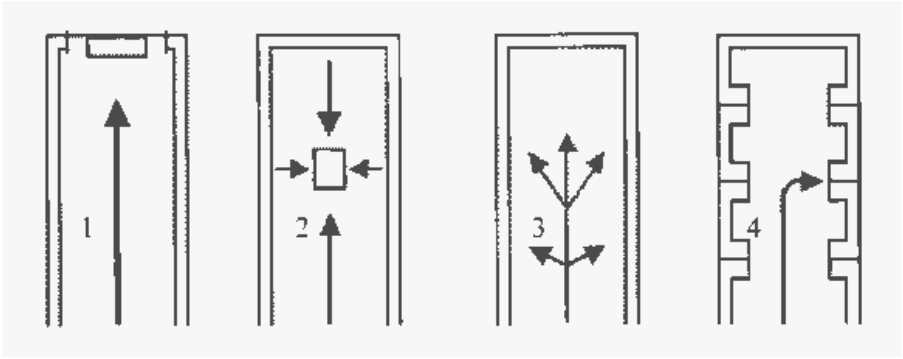
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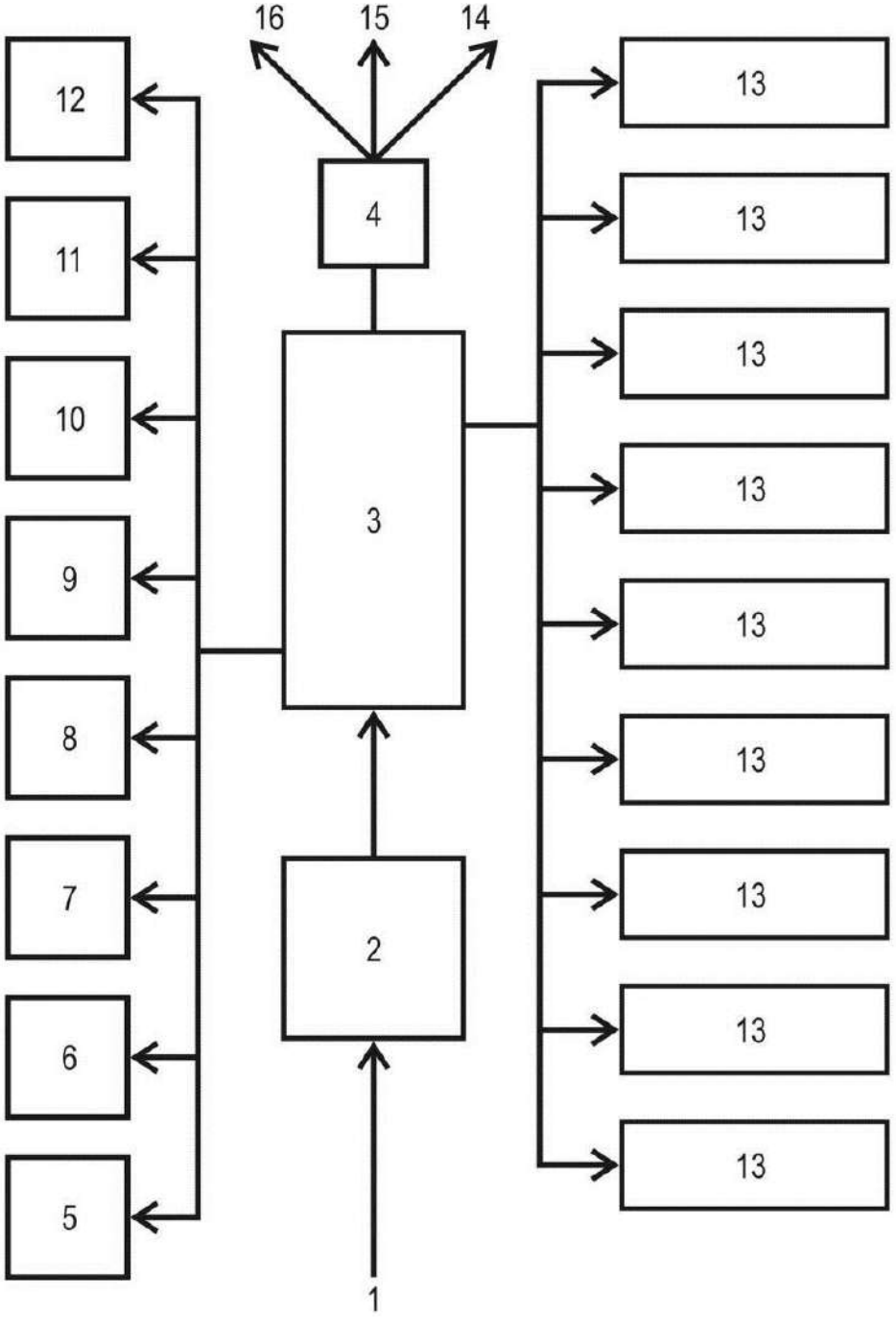
Loading of exhibition area is equal 50-60%. The removal of the viewer from the exhibit is usually equal to the double height of the exhibit. The integrity of visual perception of the exhibition space is limited to 24 m.
The excursion route may be obligatory, free, or combined.

Recommended Ratios of the exhibition space:

Exhibition area, м^2	1500	2500	5000
Temporary exhibition area, м^2	200	250	600

Temporary exhibition halls are integral part of modern museums providing more specific information.
Therefore, if the permanent museum exhibitions are updated every 7-10 years.
Frequent change of exhibition, changes of its requirements determine the need for even more versatility of temporary exhibition halls compared to permanent halls. Exhibition halls must be adapted for installation of a wide variety of structures and equipment. The exhibition hall should be as close as possible to the lobby or even have a separate entrance. It is desirable to provide special rooms to room exhibition equipment, temporary storage packaging of exhibits and various preparatory works at exhibition halls. Functional and technological exhibition halls must be connected with **fund storage** and **workshops**.
Fund storage is a block of premises, including storage facilities for various types of exhibit rooms: an exhibit acceptance room, an insulator, a disinfection chamber, a photo lab, a scientific library and archive, working rooms. The area of the storage facilities is 1/2 of exhibition areas, while 20% of the storage units of the fund are located in the exhibition halls.



Composition and interconnection of fund storage :
1 - entrance; 2 - unloading area; 3 - exhibit reception room;
4 - monitoring; 5 - equipment storage rooms; 6 - storage of materials; 7 - insulator; 8 – sanitary chamber; 9 - working room with catalogs;
10 - scientific archive; 11-12 - offices of the fund manager and employees;
13 - storage by type of exhibits; 14 - service entrance; 15 - entrance to the exhibition; 16 - entrance to lab and workshops

BONNEFANTEN MUSEUM,
MAASTRICHT (NETHERLANDS), ALDO ROSSI, 1990-1994

Film show hall. The block of premises including a film show hall can be various. It includes a cinema equipment room, a room at the stage, a foyer at the cinema hall, which can be combined with the lobby. It is advisable to place the cinema hall near the lobby to allow autonomous use regardless exhibition operation mode. The film section hall can serve for thematic film screenings, seminars and conferences.

Administration, working, facility rooms, library.

This group of rooms has to be located separately from a constant exhibition area having the office entrance with a lobby.

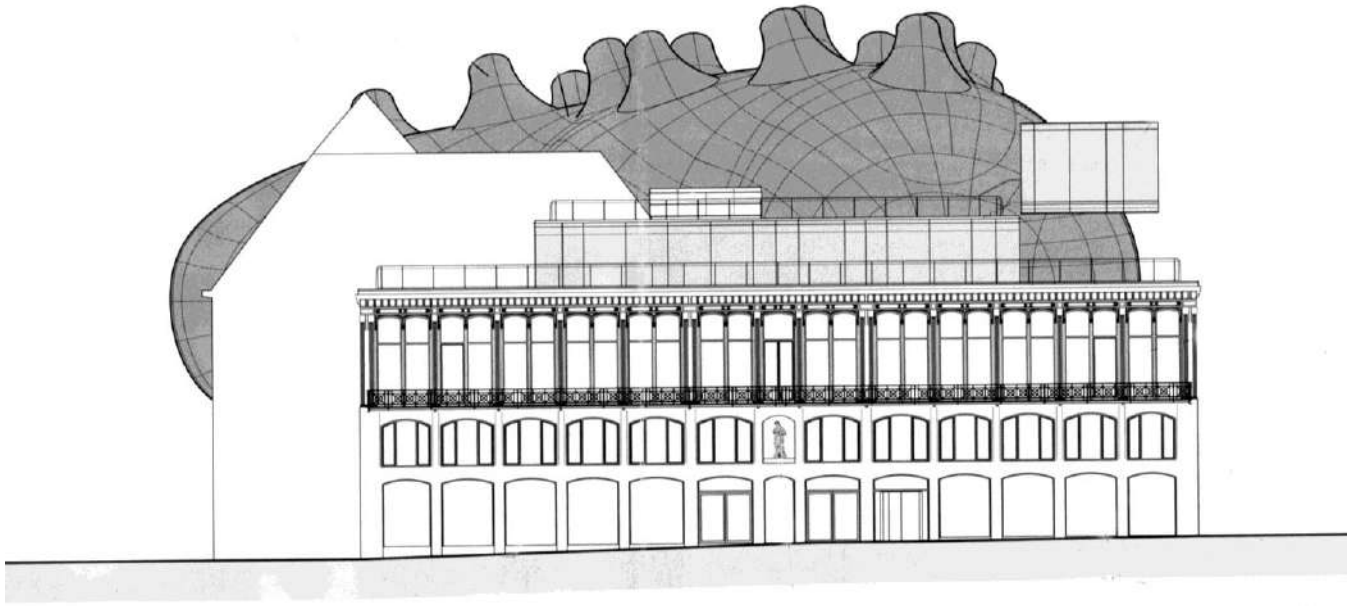
The library completes the funds according to specifics of the museum, serves the staff of the museum and visitors. The function of scientific library in modern museum is significantly expanded, generally at the cost of two factors:

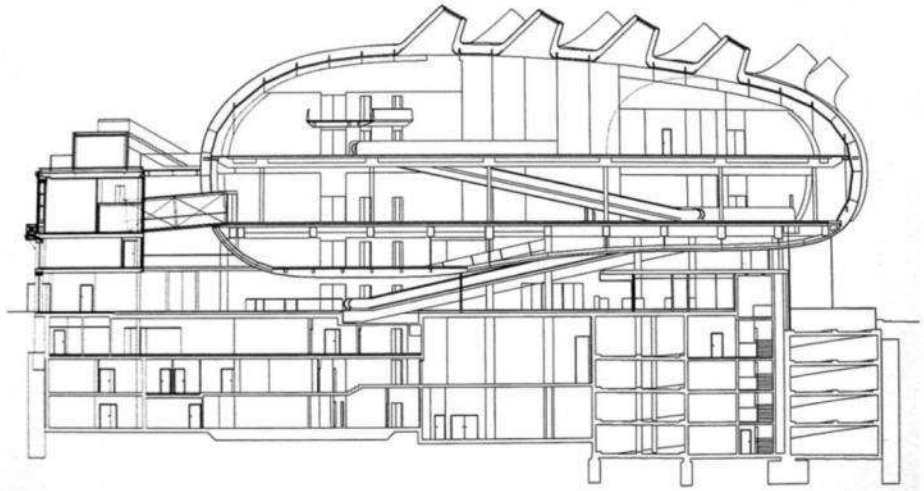
— modern means of information storage, including free access to the Internet;

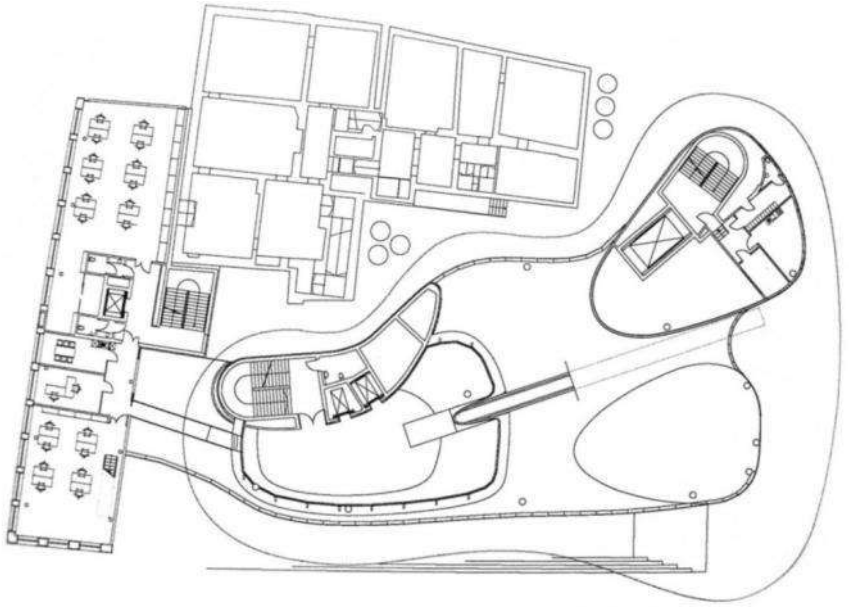
— the scientific library is intended in separate parts for museum visitors' use.

The structure of **labs and workshops** can be various depending on the nature of exhibition. As a rule, it is a restoration workshop, estimation lab, art and model workshops, metalwork workshops, a photo lab and others. The most complex and responsible work is conducted by a restoration workshop lab which has convenient access to the fund storage.

KUNSTHALLE IN GRAZ, (AUSTRIA), P. KUK, K. FOURNIER, 2000








Intendanz
Camera Austria
Administration
Medienkunstlabor
Kassa, Shop
Needle
Space01
Space02
Space03
Space04
Café

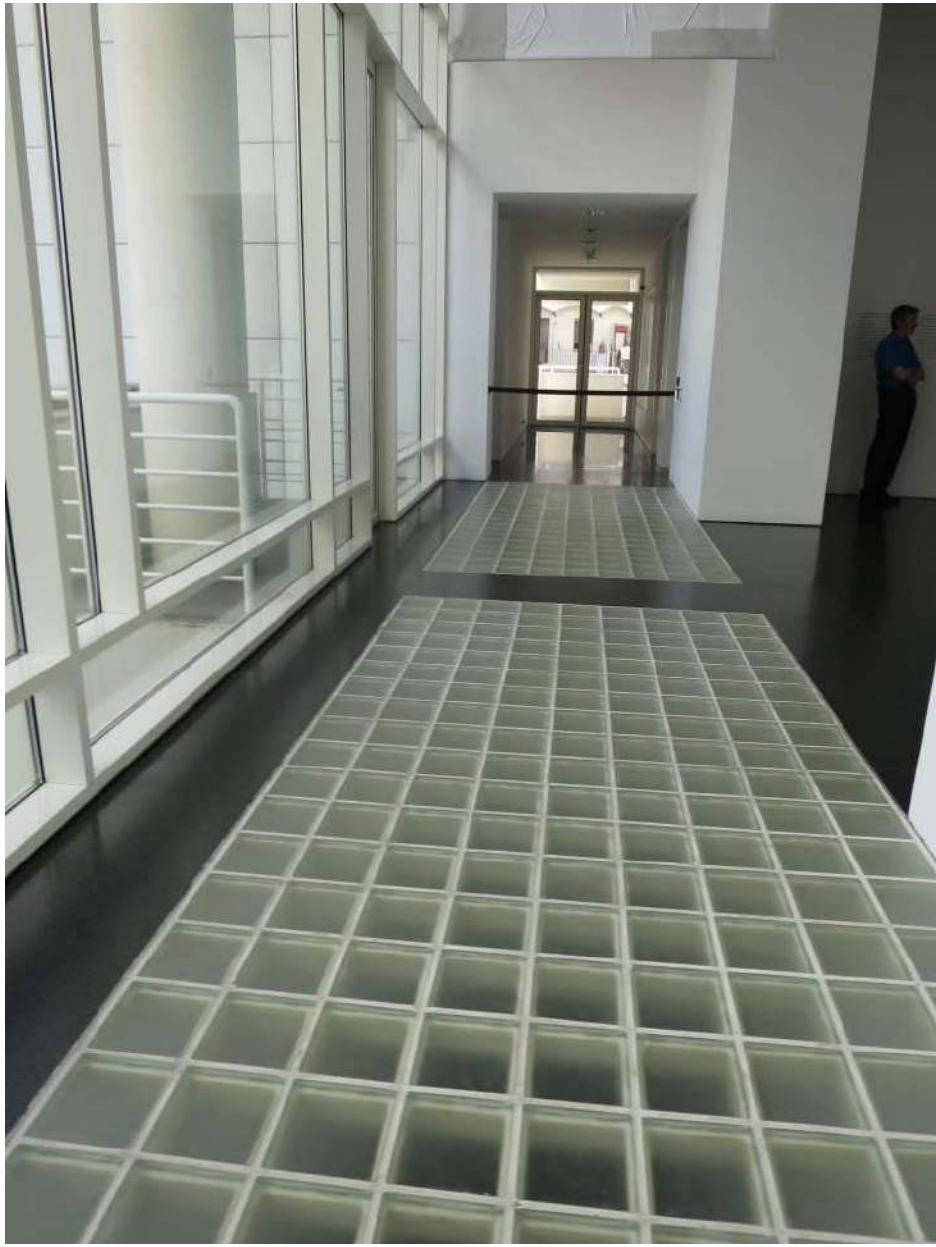
MUSEUM OF THE GREAT PATRIOTIC WAR IN SARANSK, ROMAN KANANIN

MUSEUM OF TECHNOLOGY IN KERKRADE (NETHERLANDS)

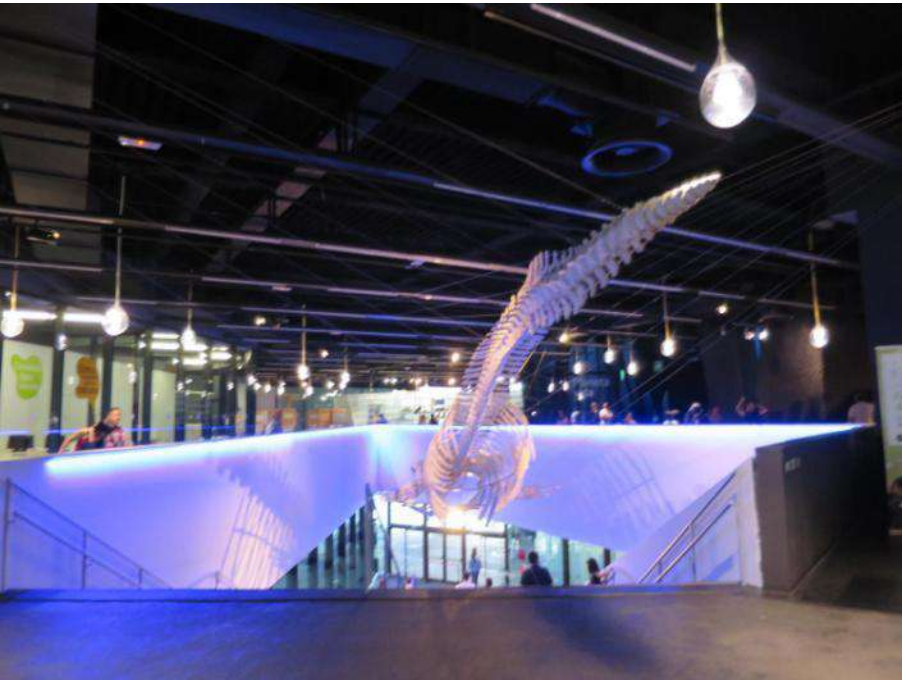
ERZI MUSEUM IN SARANSK,
V.I. BORISOV, 1976, SECOND STAGE 1985

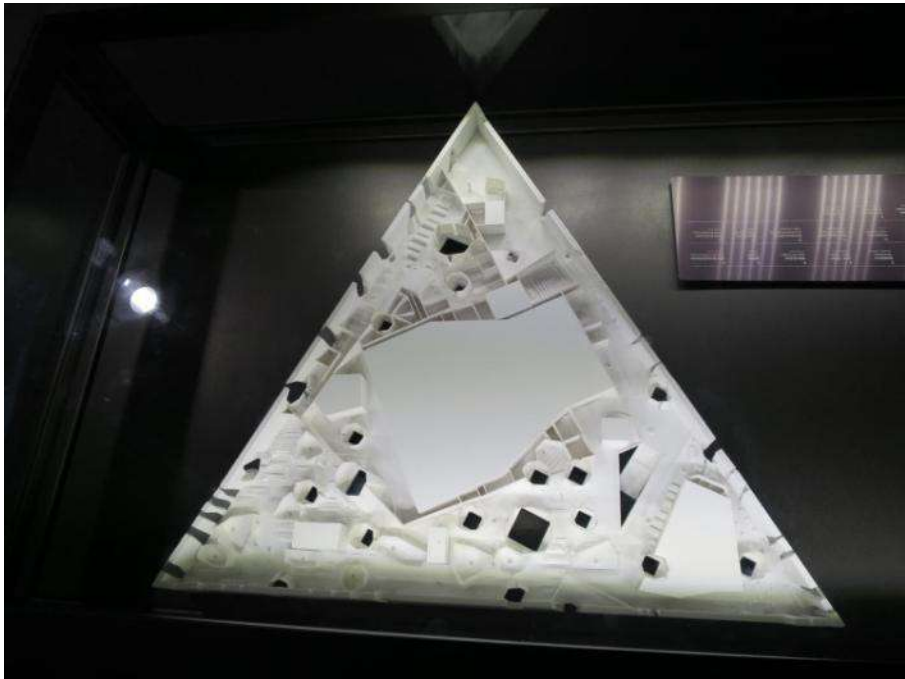
KIASMA ARTS CENTER IN HELSINKI, STEVEN HOLL

MUSEUM OF CONTEMPORARY ART MAKBA IN BARCELONA, R. MEIER

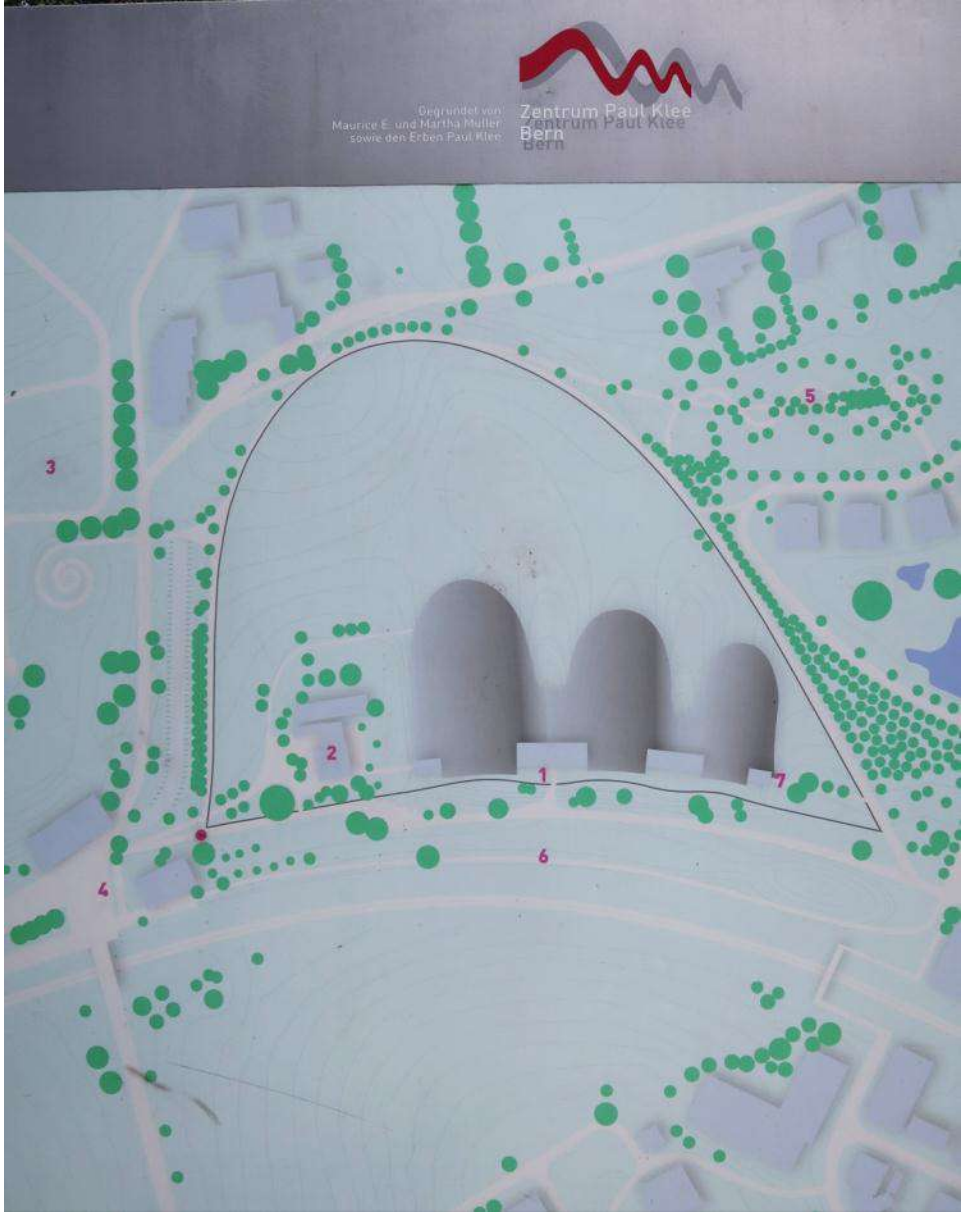


BLAU MUSEUM IN BARCELONA, J. HERZOG AND P. DE MERON, 2000-2004





PAUL KLEE CENTER IN BERN (SWITZERLAND), R. PIANO, 2005


Gegründet von
Maurice E. und Martha Müller
sowie den Erben Paul Klee
Zentrum Paul Klee
Bern
Zentrum Paul Klee
Bern
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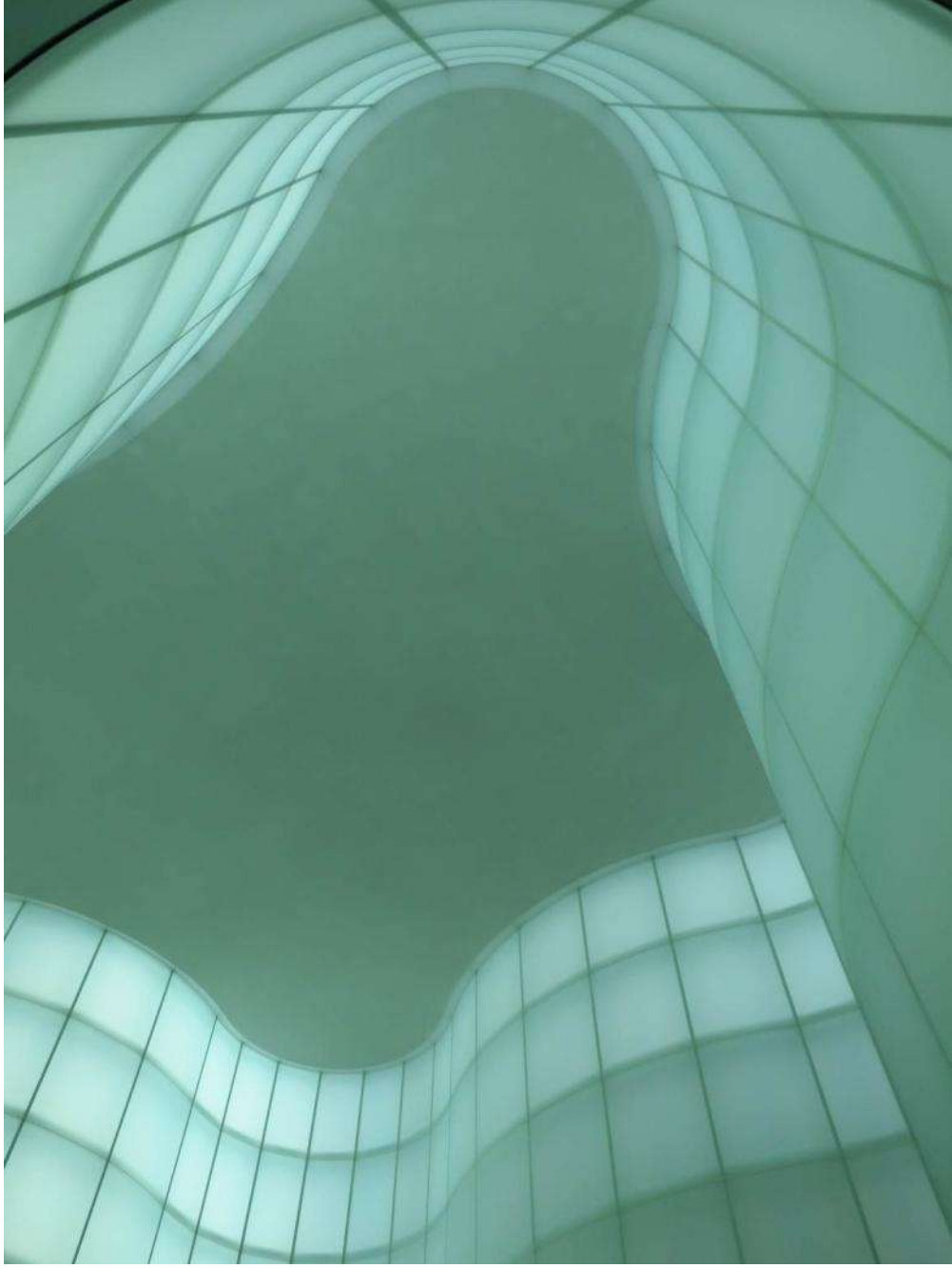
7

MUSEUM OF CULTURES IN BASEL, J. HERZOG AND P. DE MERON, 2008-2011

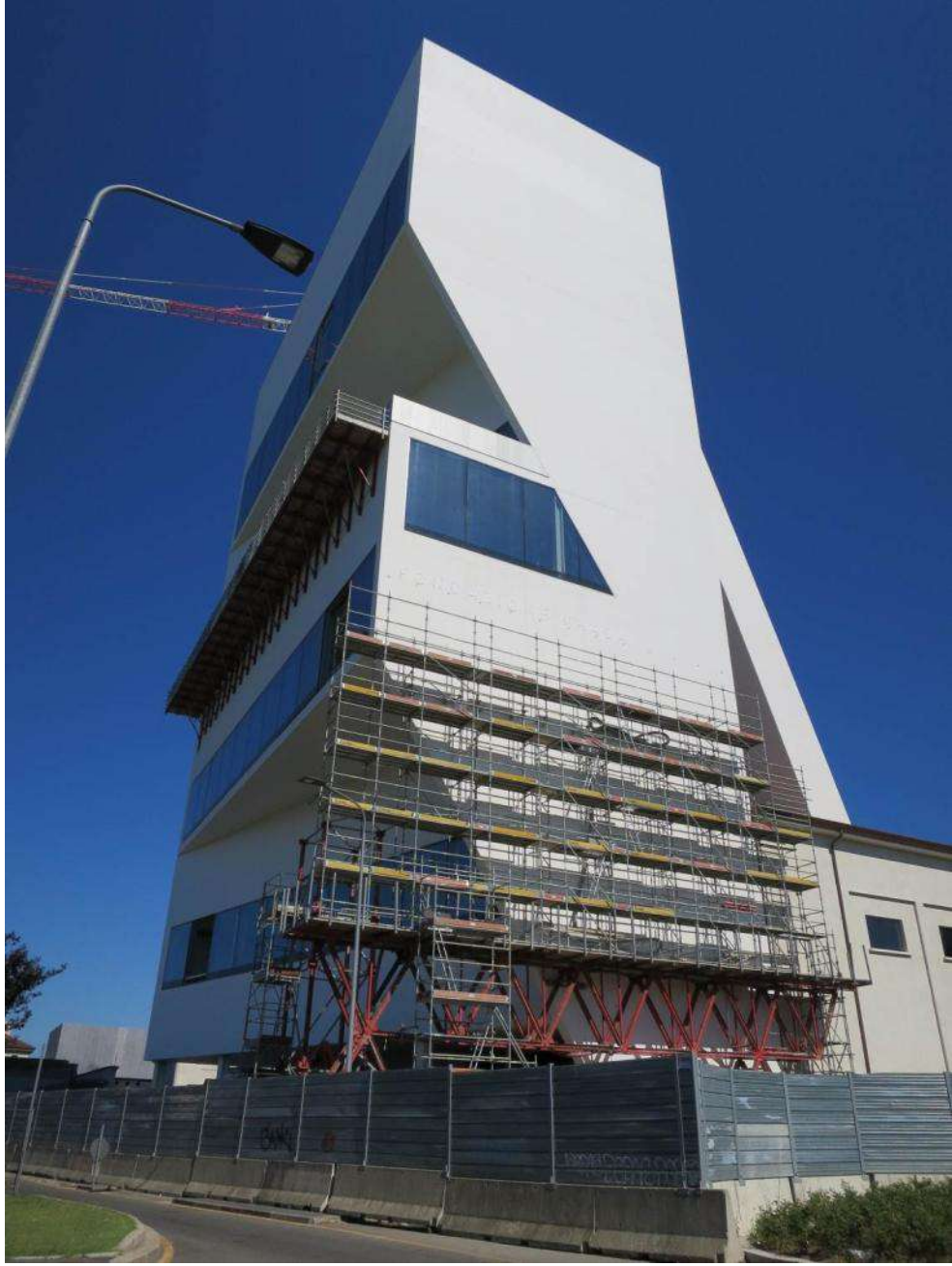
TENGLI MUSEUM IN BASEL, MARIO BOTTA, 1996

MUSEUM OF ART IN BASEL, CHRIST AND GANTEBINE, 2016

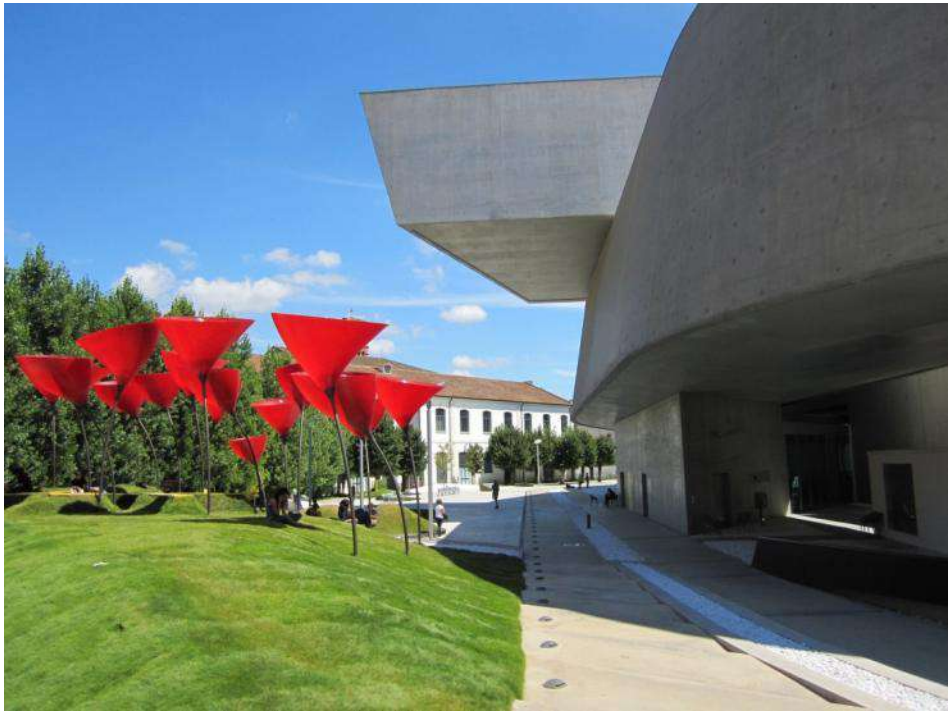
MUSEUM OF BYZANTINE CULTURE IN THESSALONIKI,
KYRIACOS CROCOS, 1977



MUDEC MUSEUM IN MILAN, DAVID CHIPPERFIELD, 2008-2015

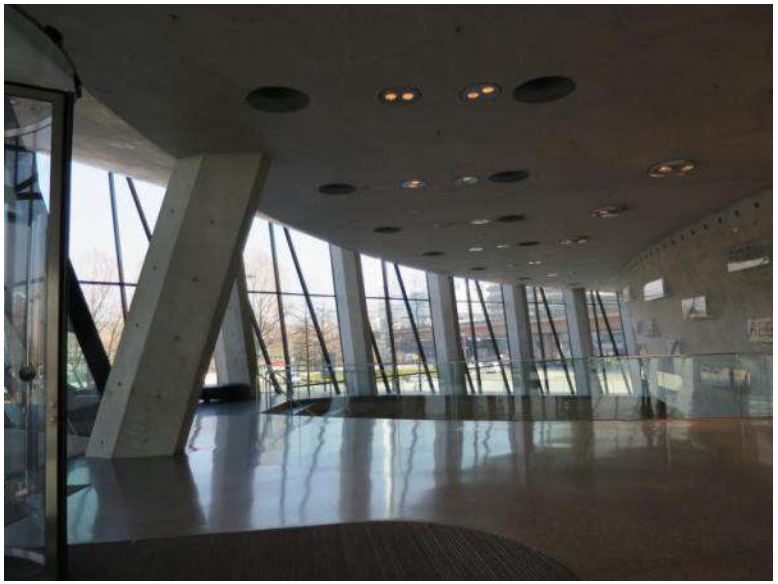


PRADA FOUNDATION IN MILAN, REM KOOLHAS, OMA, 2008 - 2015



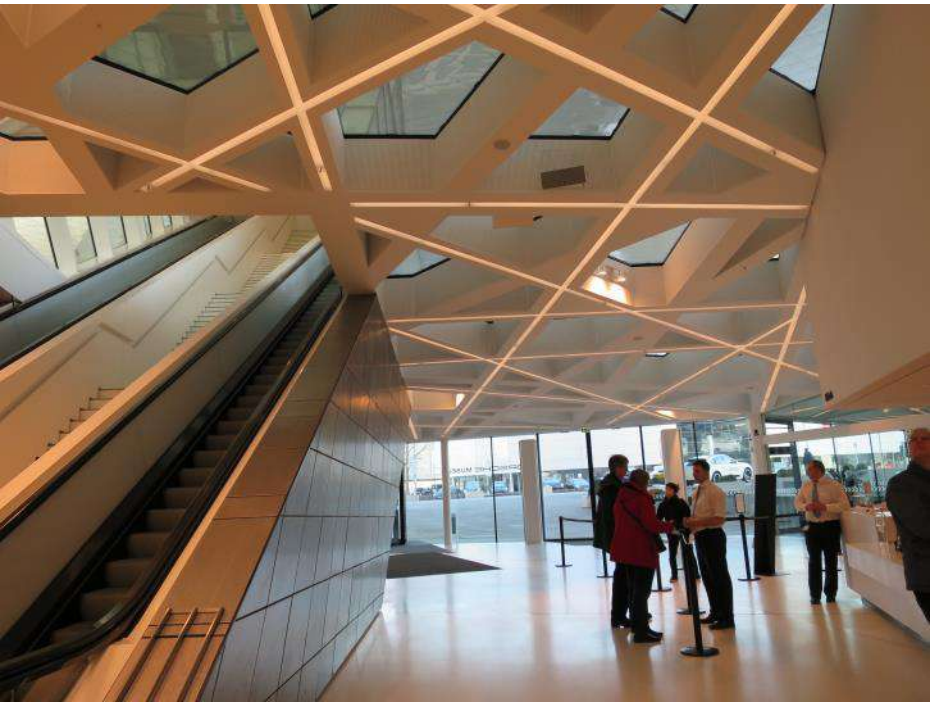
NATIONAL MUSEUM OF ART OF THE 21ST CENTURY "MAXXI" IN ROME, ZAHA HADID, 1999 - 2010

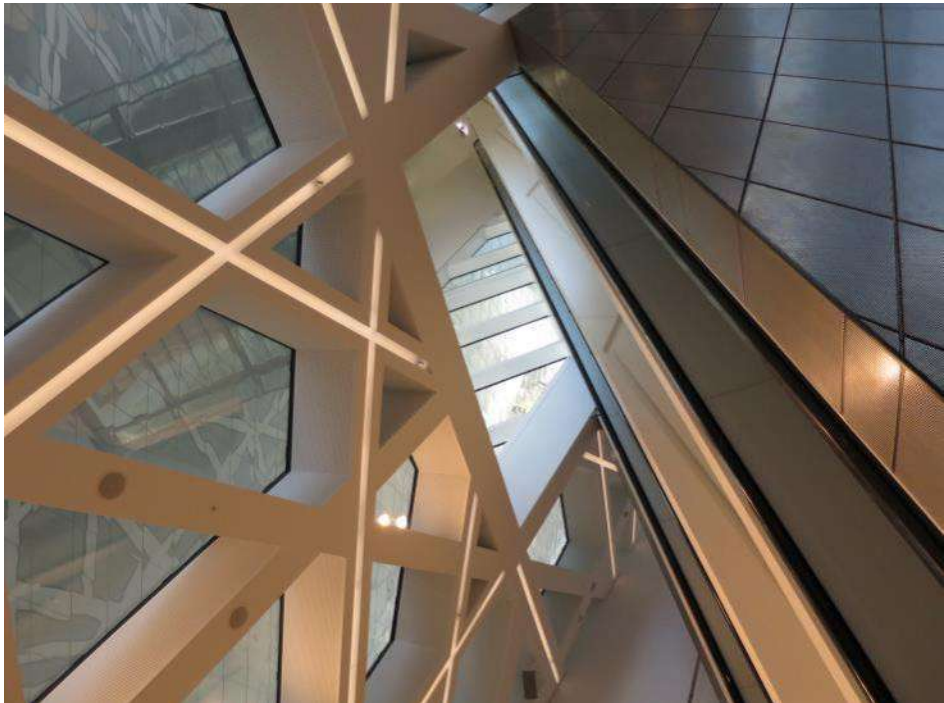
MUNICH, BMW MUSEUM, KARL SCHWANZER, 1968-1972



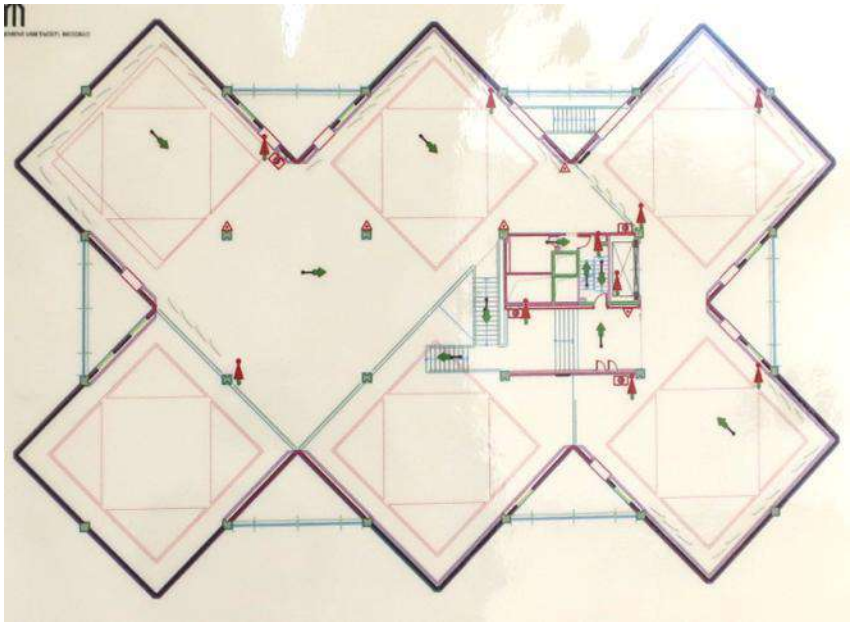
STUTTGART, MERCEDES BENZ MUSEUM,
UN STUDIO, VAN BERKEL AND BOS, 2003 - 2006

STUTTGART, PORSCHE MUSEUM, DELUGHAN MEISL, 2007



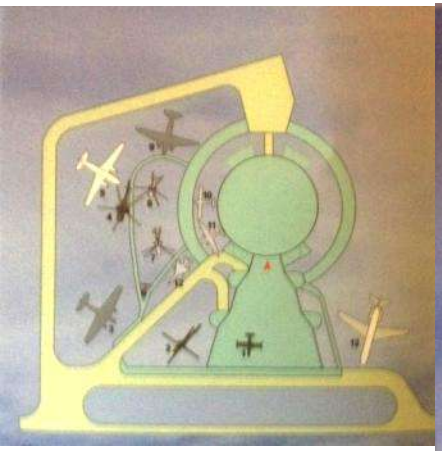


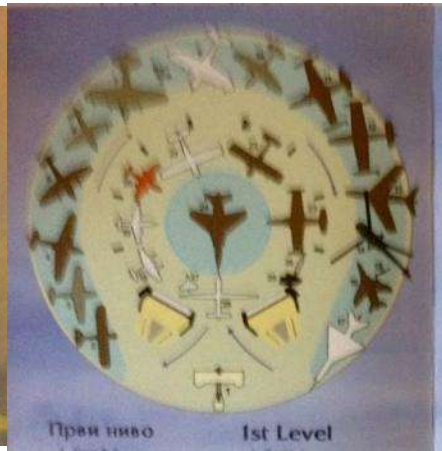
MUSEUM OF AZERBAIJANI CARPET IN BAKU,
HOFFMAN - JANZ (AUSTRIA), 2014

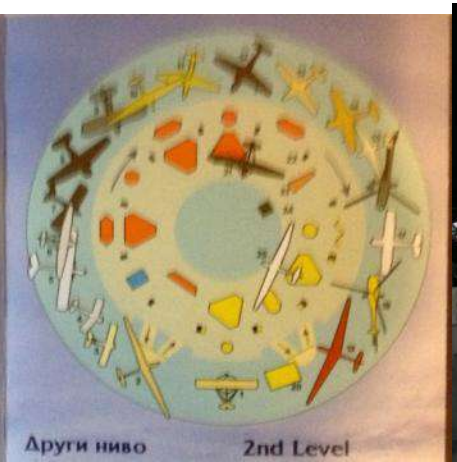


MUSEUM OF CONTEMPORARY ART IN BELGRADE,
IVAN ANTICH, IVANKA RAZPOKOVICH, 1965

AVIATION MUSEUM IN BELGRADE, ARCH. IVAN STRAUSS, 1989







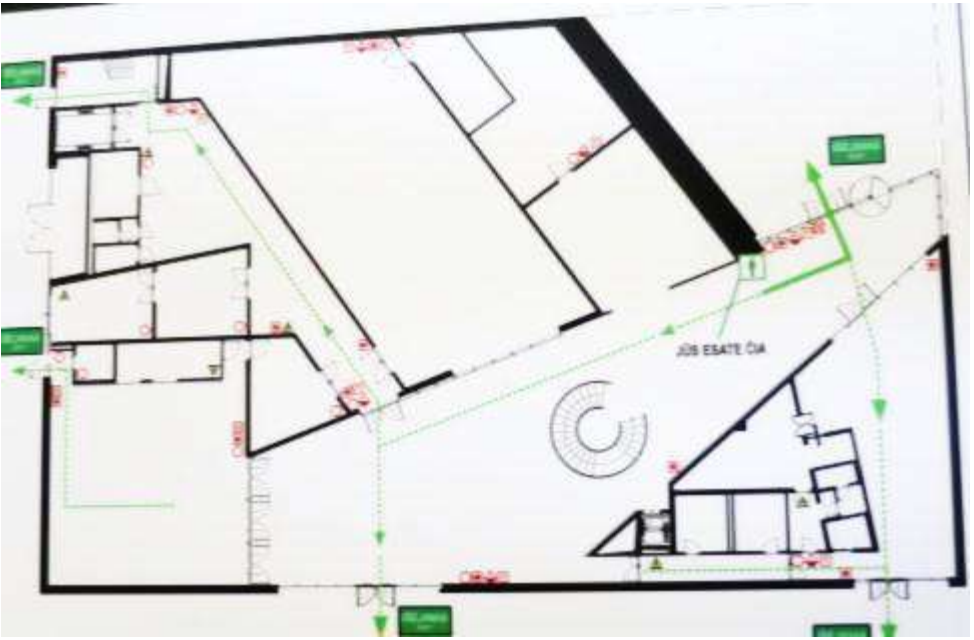
OLYMPIC MUSEUM IN LAUSANNE, PEDRO RAMÍREZ VÁZQUEZ, 1988

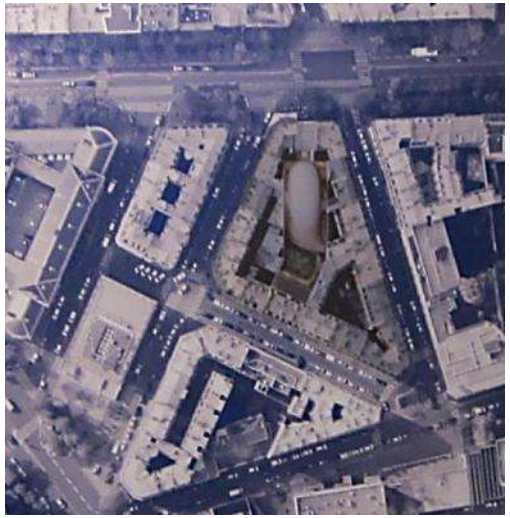
MUSEUM OF TRANSPORT IN LUCERNE, GIGON HOOVER, 2009

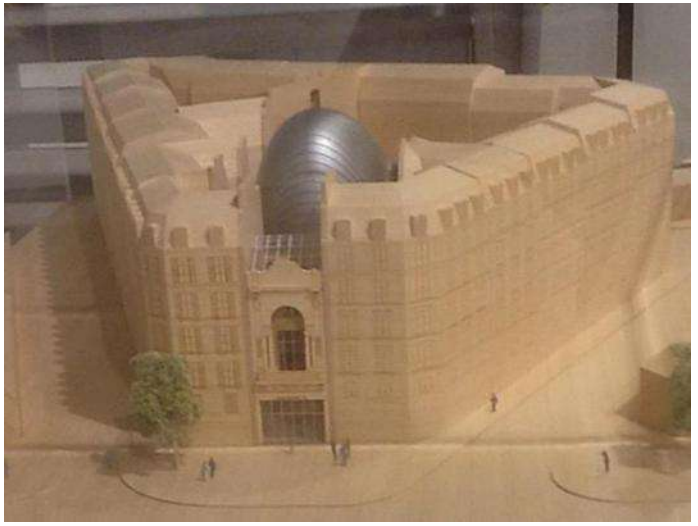
MUSEUM OF OCCUPATION AND FREEDOM OF VABAMU IN TALLINN, HEAD ARCHITECTS, 2001-2003

KUMU MUSEUM IN TALLINN, PEKKA VAPAVUORI, 2005

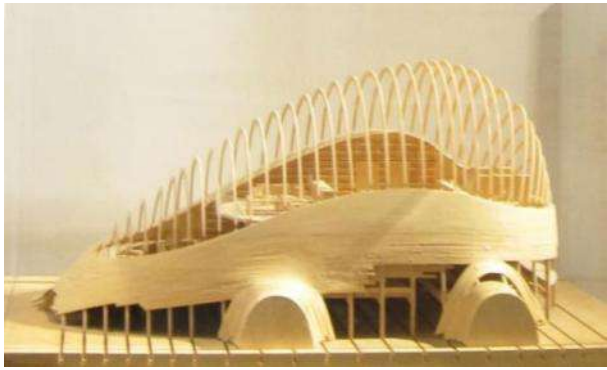
**CENTER OF CONTEMPORARY ART MO MUSEUM IN VILNIUS,
ARM. D. LIBESKIND WITH ARCHITECTS AND BALTIC ENGINEERS, 2018**

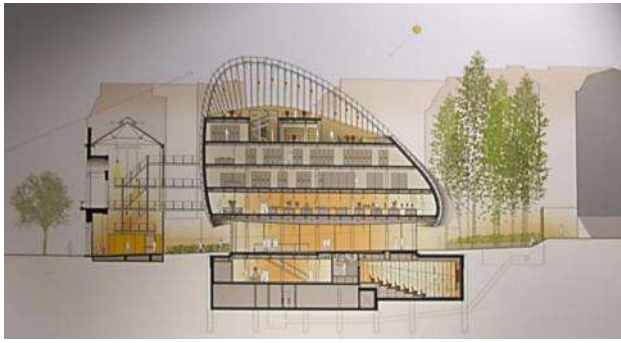


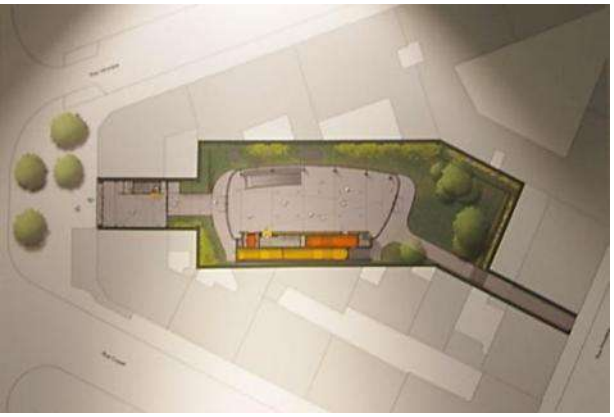


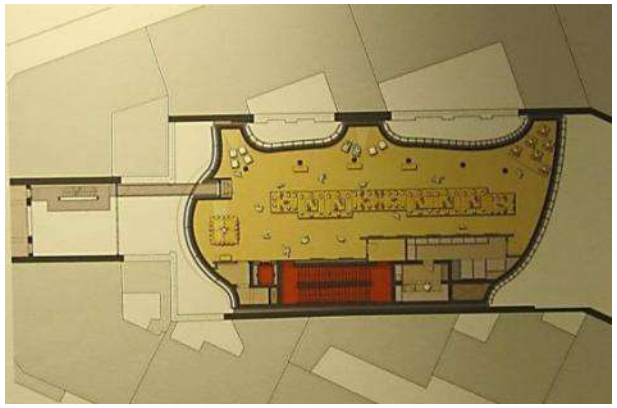


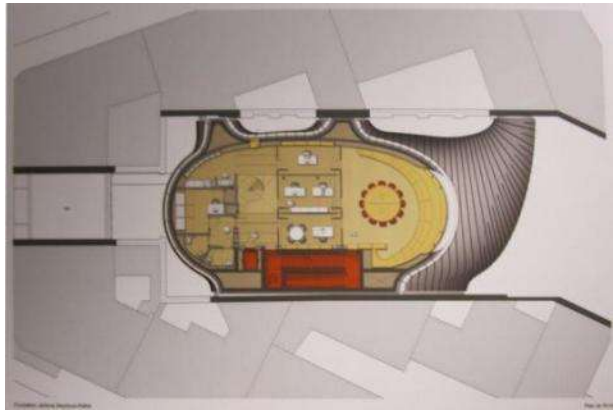
JEROME SEYDOUX-PATE FOUNDATION IN PARIS, R. PIANO, 2014





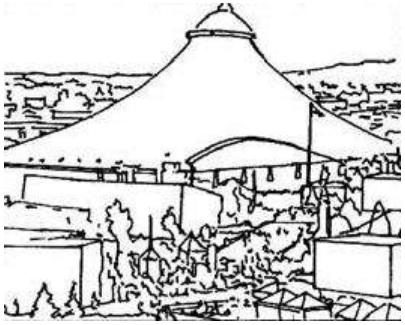
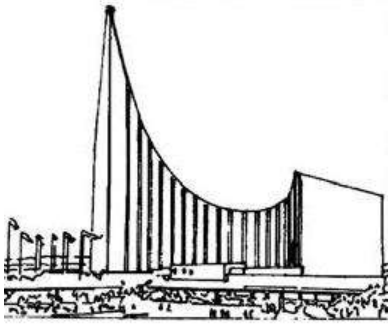
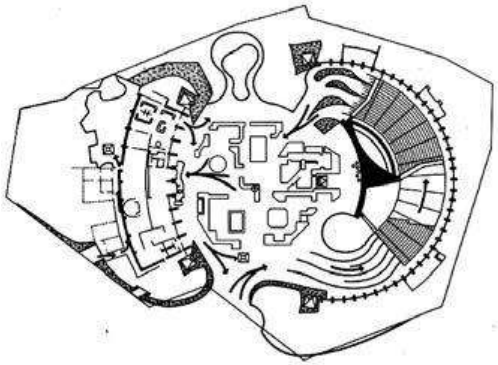
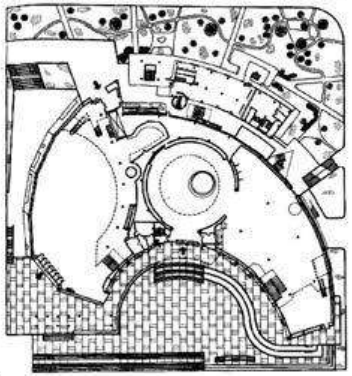
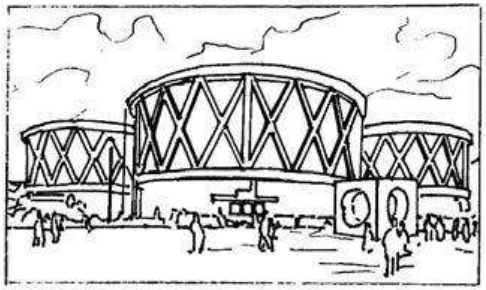
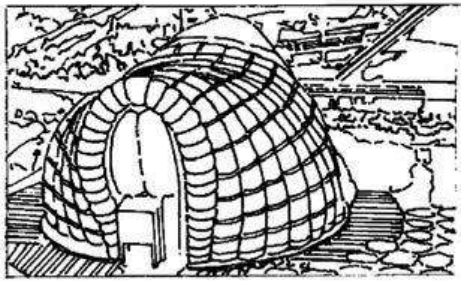
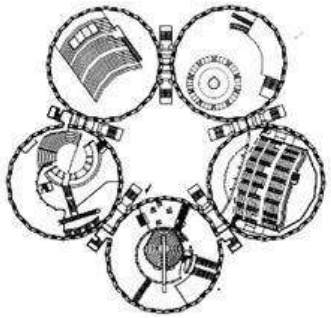
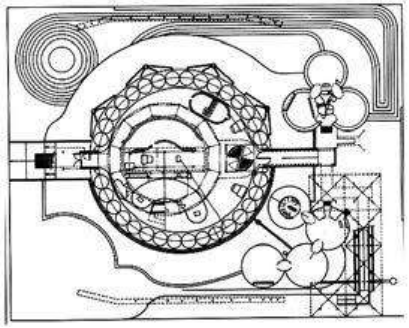






EXHIBITIONS

Exhibitions serve for communication, exchange of experience;
main specifics and aim of exhibitions - identification and dismantling stratification of new achievements in a given area. The following types can be identified from the planning structure of exhibition construction:
- regular axial;
- radial-annular;
- free-picturesque.
Exhibition pavilions, as a rule, are small. The storage area is determined depending on the nature of the exhibited objects. The constantly changing exposition is the main difference between exhibitions and museums. The requirements for visiting the exhibition are the same as for the exhibition halls of museums. The block of economic premises of exhibitions is more developed than the block of these premises in museums: it includes large workshops (carpentry, locksmith) for the installation of the exhibition.
By spatial structure, you can identify the following types of exhibition buildings:
- centralized - compact plan and a functionally free universal space;
- decentralized - consists of separate units, diffusive rendering thematic sections of the exhibition.

Exhibition pavilions at EXPO


ВЕТЕРА СОВЕТ


АРМЕНИЯ
ЗОЛОТО
СЕРЕБРО


ПАВИЛЬОН N 71


LAZAREV GALLERY
22.02 - 27.03.2013
ART IT
АЛЬБЕРТО МОРЕТТИ
АННА ЛОРЕНЦИНИ
ЛУКА ДЗАМПЕТТИ
МАРКО ЧИНГОЛАНИ
ПЬЕРО ПРИНЧИПИ
ХУДОЖЕСТВЕННАЯ ГАЛЕРЕЯ LAZAREV GALLERY
5/5

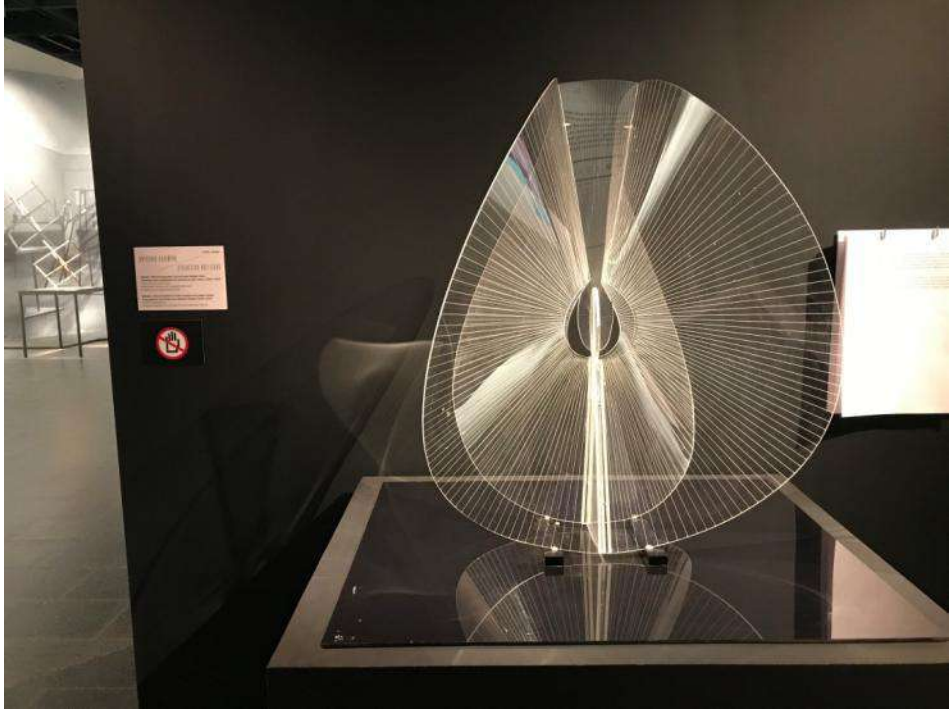
MULTIMEDIA PARKS "RUSSIA - MY HISTORY"

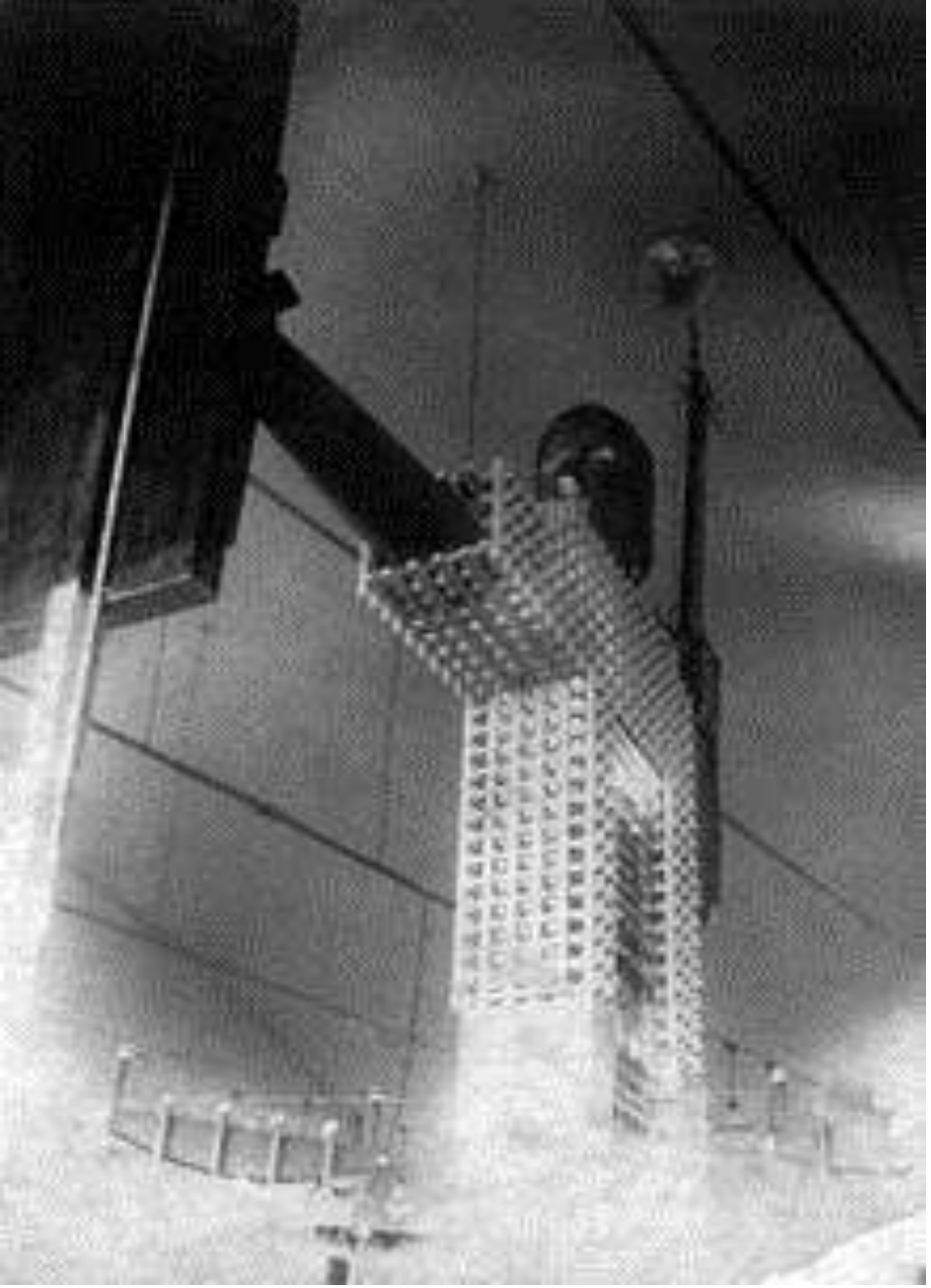
River station. Perm-1 railway station

River station

Nizhny Novgorod. Main Yarmorochny House Photo M.P. Dmitriev, beginning of XX century.

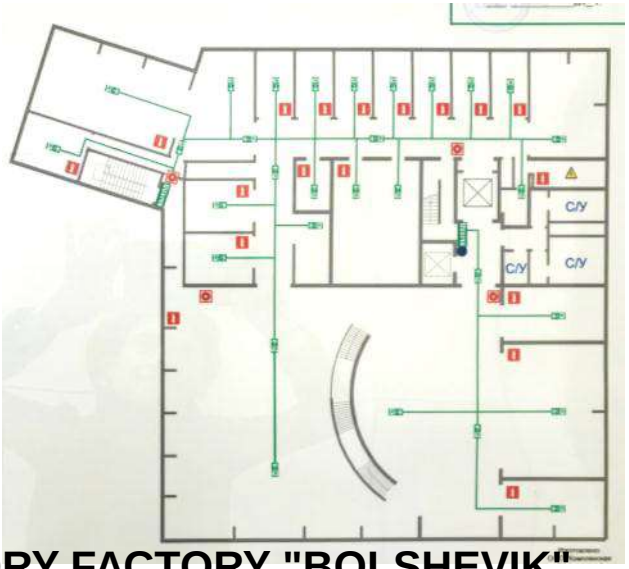
Manege Exhibition Hall in St. Petersburg.
Exhibition "Laboratory of the Future. Kinetic art in Russia"





Installation for the electrification pavilion at the All-Union Agricultural Exhibition in Minsk. 1930.

Electric Venus, Alexander Labas, Reconstruction of VKHUTEMAS-XXI century, man-made V.G. Yezhakov)

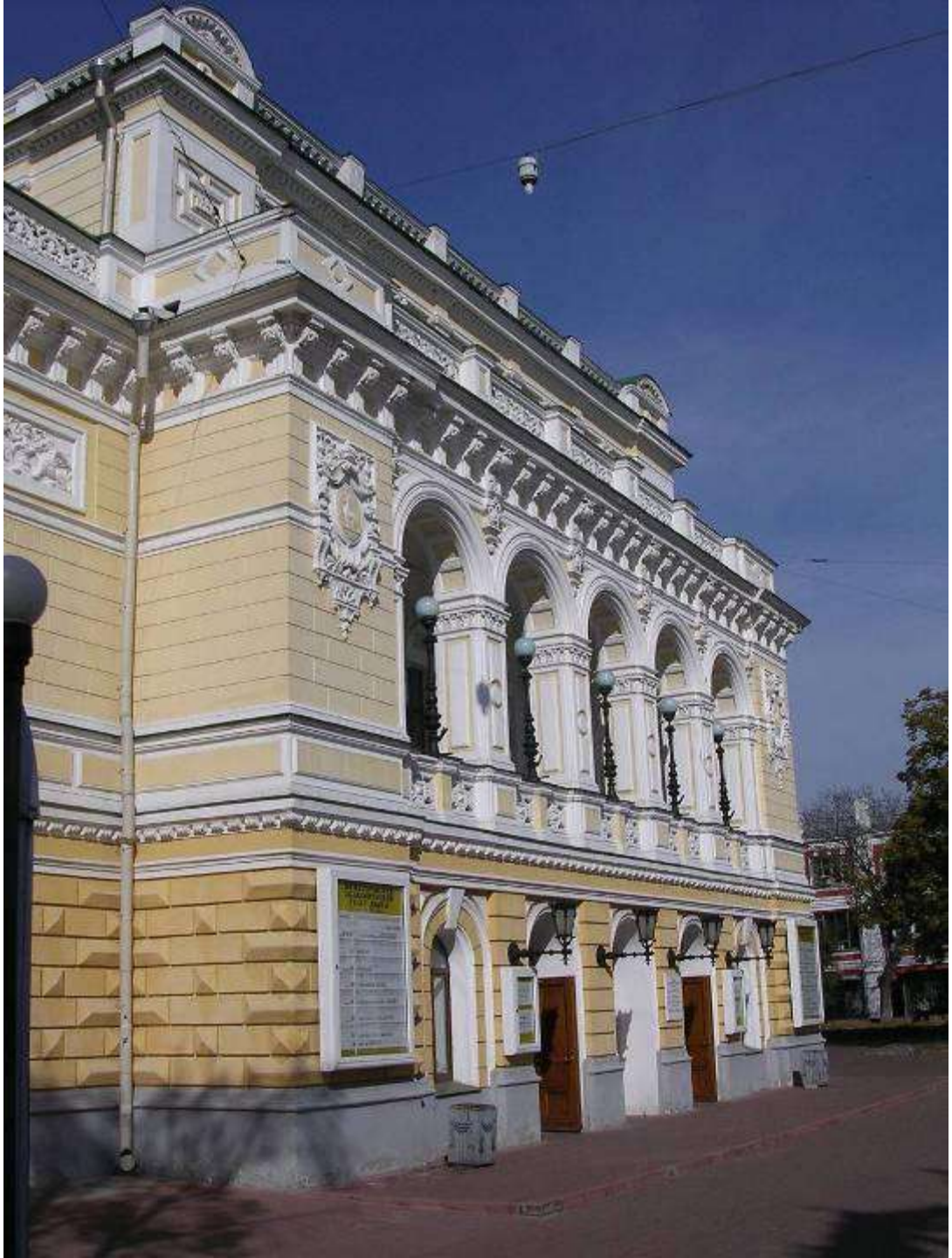


MUSEUM OF RUSSIAN IMPRESSIONISM, TERRITORY FACTORY "BOLSHEVIK" MOSCOW, ARH. BYURO JOHN MCASLAN + PARTNERS, ARX. EYDAN POTTER, 2012

UNIVERSITY SCIENCE CENTER IN BREMEN, THOMAS KLUMPP, 2000

LECTURE 8.

SPECTACULAR BUILDINGS




НАСТОЯЩИЙ СИТАЛЛОВЫЙ ДОМИК · ПАРАД ЧУДЕС
30%

STATE CONCERT HALL NAMED AFTER ARNOLD KATZ,
ARM. BUREAU LLC NOVOSIBIRSK GRADOSTROY-2002,
HANDS. VLADIMIR ERMISHKIN, 2013

LARGE NOVOSIBIRSK PLANETARIUM,
ARM. I. POPOVSKY, 2012


planétarium

Spectacular structures include cinemas, concert halls, clubs, theaters, circuses, museums, exhibitions.

With all the variety of architectural and planning solutions.

They are united by a single compositional basis - the presence of the main auditorium or several halls in the building.

The importance of buildings of this type leads to a thorough search for the architectural image of objects based on their accent urban planning role.

When selecting a site for spectacular buildings, avoid noisy areas and vibrations, which complicates the provision of the necessary acoustic conditions indoors.

Size of land plots for spectacular buildings are calculated in accordance with the norms: for **cinemas** - 5 m2 for 1 place in the hall; for concert halls and circuses - 0.7-1.5 hectares depending on capacity; for theaters - 1.2-1.7 ha. A distinctive feature of the planning organization of the site is the mandatory presence of an area in front of the main entrance to the building, unloading sites and an yard. Car parking for spectacular buildings is designed at a rate of 10-15 places for 100 places in the auditorium or for 100 one-time visitors.

CINEMAS

CINEMA "VICTORY" ("PROLETKINO") IN NOVOSIBIRSK, 1925, RECONSTRUCTION 2006

Cinemas are divided into year-round (multi-zone, single-hall) and seasonal (summer open and summer closed).

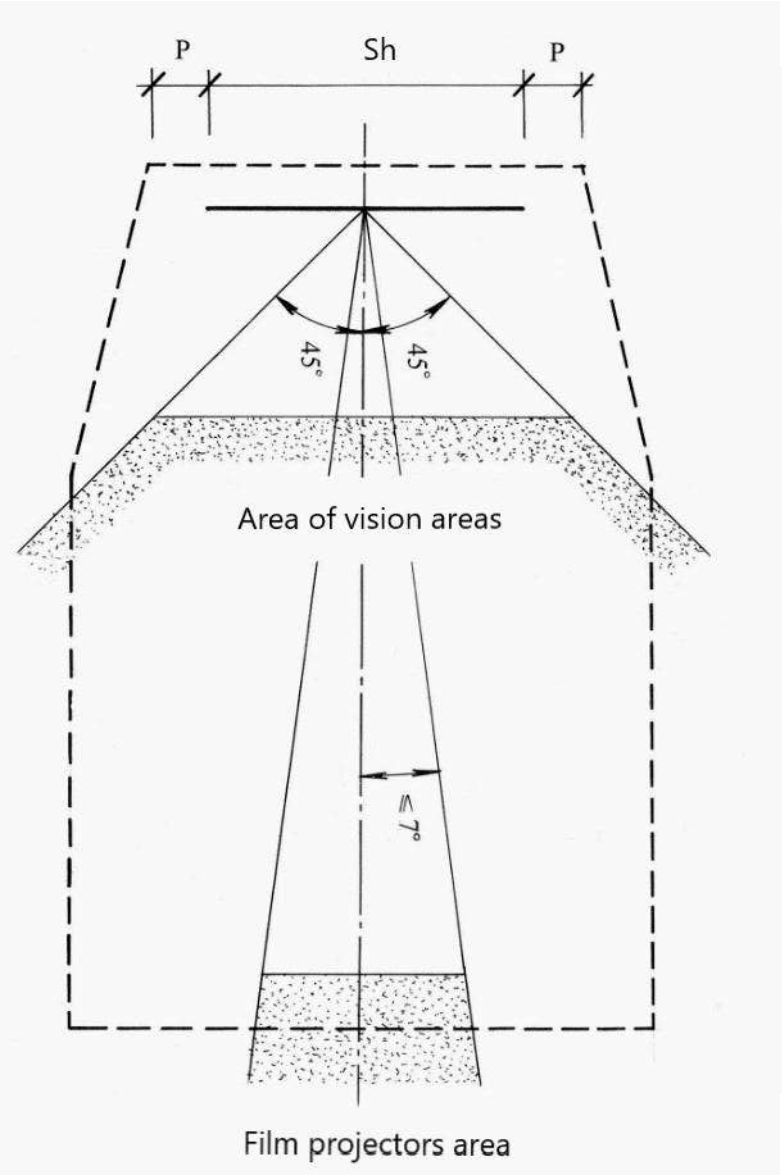
The main room of the **cinemas** is the auditorium, giving viewers the conditions for comfortable watching of the film. The Hall Form - rectangular, trapezoidal or semicircular. **Cinemas** can be designed with universal halls with rooms for cafes and club work, for working with children. Currently, it is the time when there is a surge in interest in cinema. The cinema building should have two characteristics: high technicality and universatility.

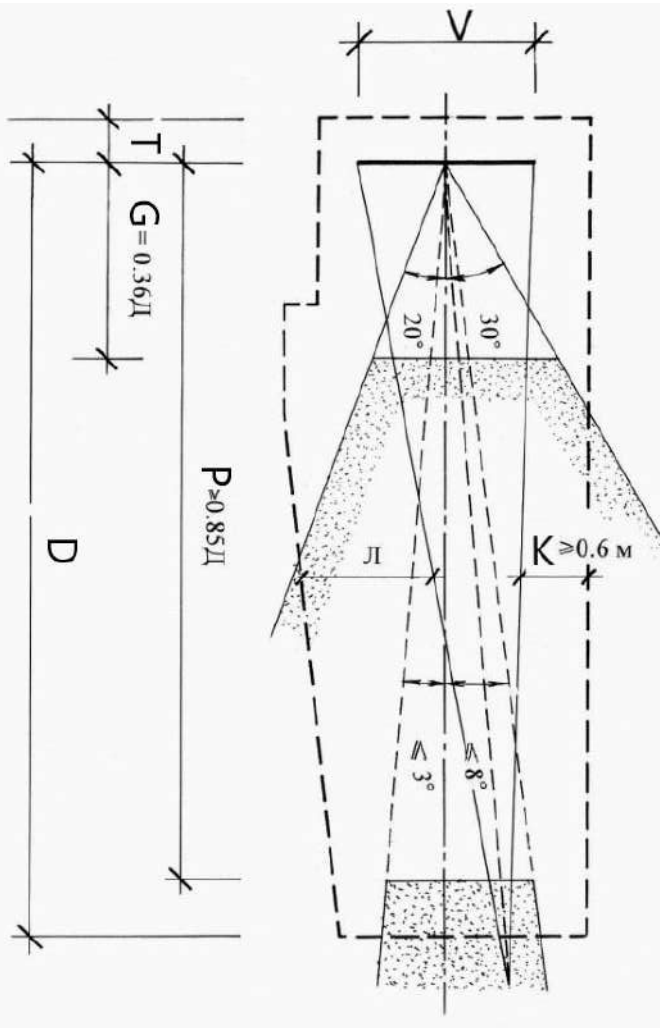
Cinema Rooms are divided into three groups:

- spectator complex;
- premises of the cinema equipment room;
- office and facilities.

Areas of the **cinema** audience complex for 1 place in the hall

Room name	Area, m^2
Auditorium (including stage and balcony)	0,9
Cash lobby	0,07
Foyer and buffet	0,55
Other rooms	0,05


P
Sh
P
45°
45°
Area of vision areas
≤ 7°
Film projectors area


V
T
G = 0.36Д
D
P≥0.85Д
20°
30°
Л
K ≥ 0.6 м
≤ 3°
≤ 8°

Requirements for auditorium and screen parameters

There are four types depending on the film projections that determine the proportions of the screen:

- ordinary screen (o) 1: 1.37 of height to length;
- widescreen (w) 1: 2.35;
- wide-format (f) 1: 2.2;
- cashette (k) 1: 1.66.

Seats for viewers in the auditoriums at the film demonstration.

It is recommended to design within the area shown in the drawing, where:

- D - the length of the auditorium along its axis from the screen to the back seats of the last row;
- G - distance along the axis of the auditorium from the screen to the back seats of the first row, equal to 0.36 D;
- W - width of screen working area (curvilinear chord);

- B is the height of the screen work area.

The width of the screen (Sh) is recommended:

- Shf = 0.6 D;
- Shsh = 0.43 D;
- Shk = 0.34 D;
- Sho = 0.25 D.

Distance from screen to back of first row (G) depending on
from screen width (Sh). It is recommended to take equal to:

- Gf not less than 0.6 Shf;
- Gsh not less than 0.84 Shsh;
- Go not less than 1.44 Sho.

Auditorium parameters when installing a film projection.

The equipment is shown in the drawing, where:

- P - projective distance, not less than 0.85 D;
- fg - not more than 7 ° (in clubs and theaters it is allowed not more than 9°);
- fv - not more than 8 °;
- fg - not more than 3 °;

- K - distance from the upper projection beam to the nearest ceiling surfaces must be not less than 0.6 m;

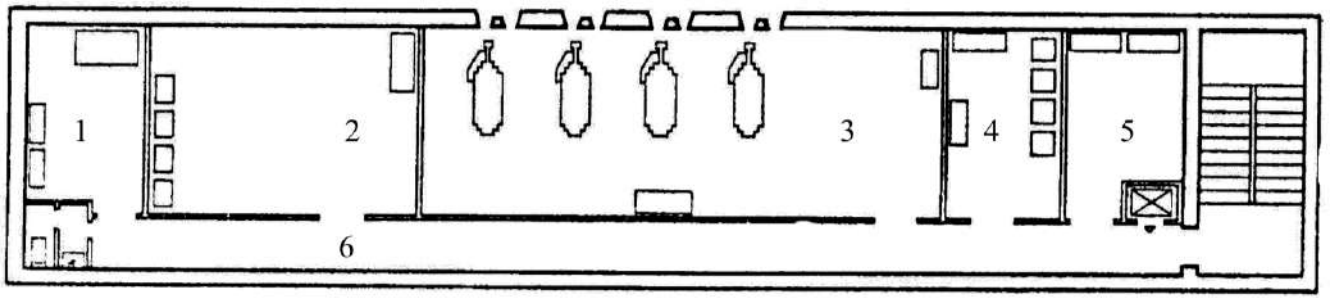
- L - distance from the lower projection beam to the floor in the area of spectator seats, not less than 1.9 m;

-T- depth of off-screen space: with wide screen - not less than 0.985 m; at curve linear screen – at least 0,1 Sw.

Building visibility on the calculated observation point, it is recommended to take 0.14 m above the level of the eye in front of the sitting viewer (0.12 m is possible during reconstruction). The height of the sitting viewer's eye level above the floor level is taken to be 1.2 m.
In recent years, 3D projection has become quite widespread, allowing you to get the effect of the development of a movie not on the screen, but directly in the visual
hall with the creation of a feeling of the presence of the viewer. This is achieved
using special equipment.

Required width of aisles in the cinemas

Distance between seats m	Number of continuously installed seats in the row		Width of passage between rows, m
	One-way evacuation	Two-way evacuation	
0,85	12	25	0,4
0,9	20	40	0,45
0,9	25	50	0,5
1,0	30	60	0,55



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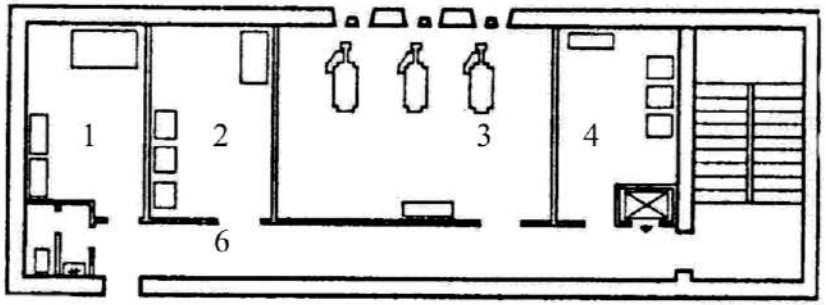
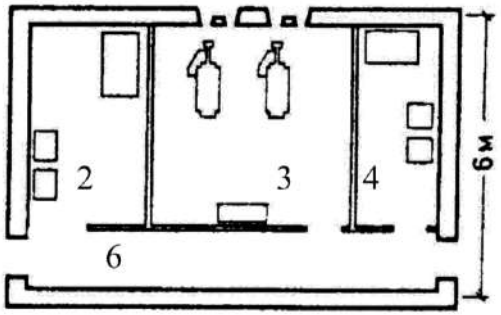


Б



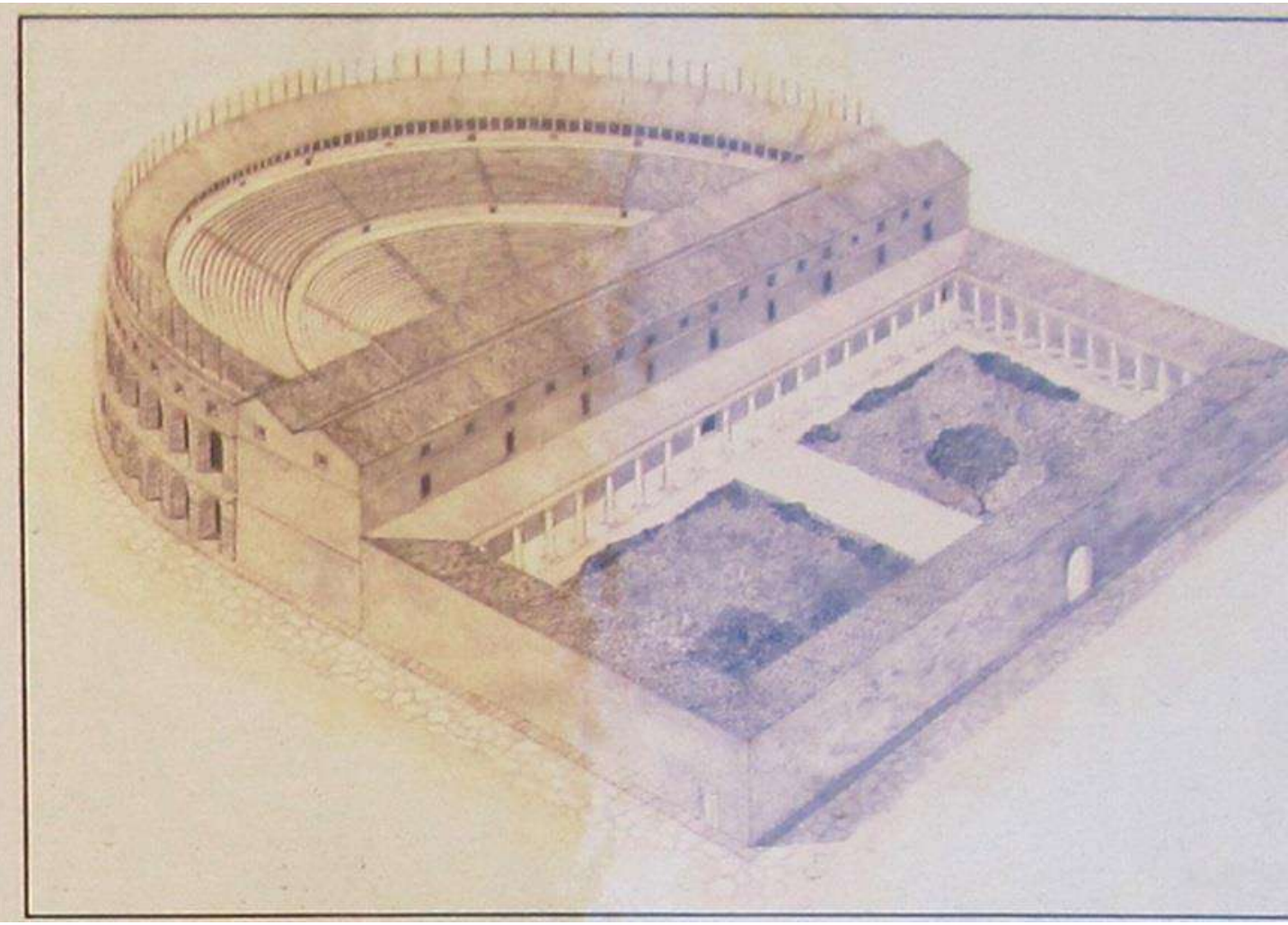
В

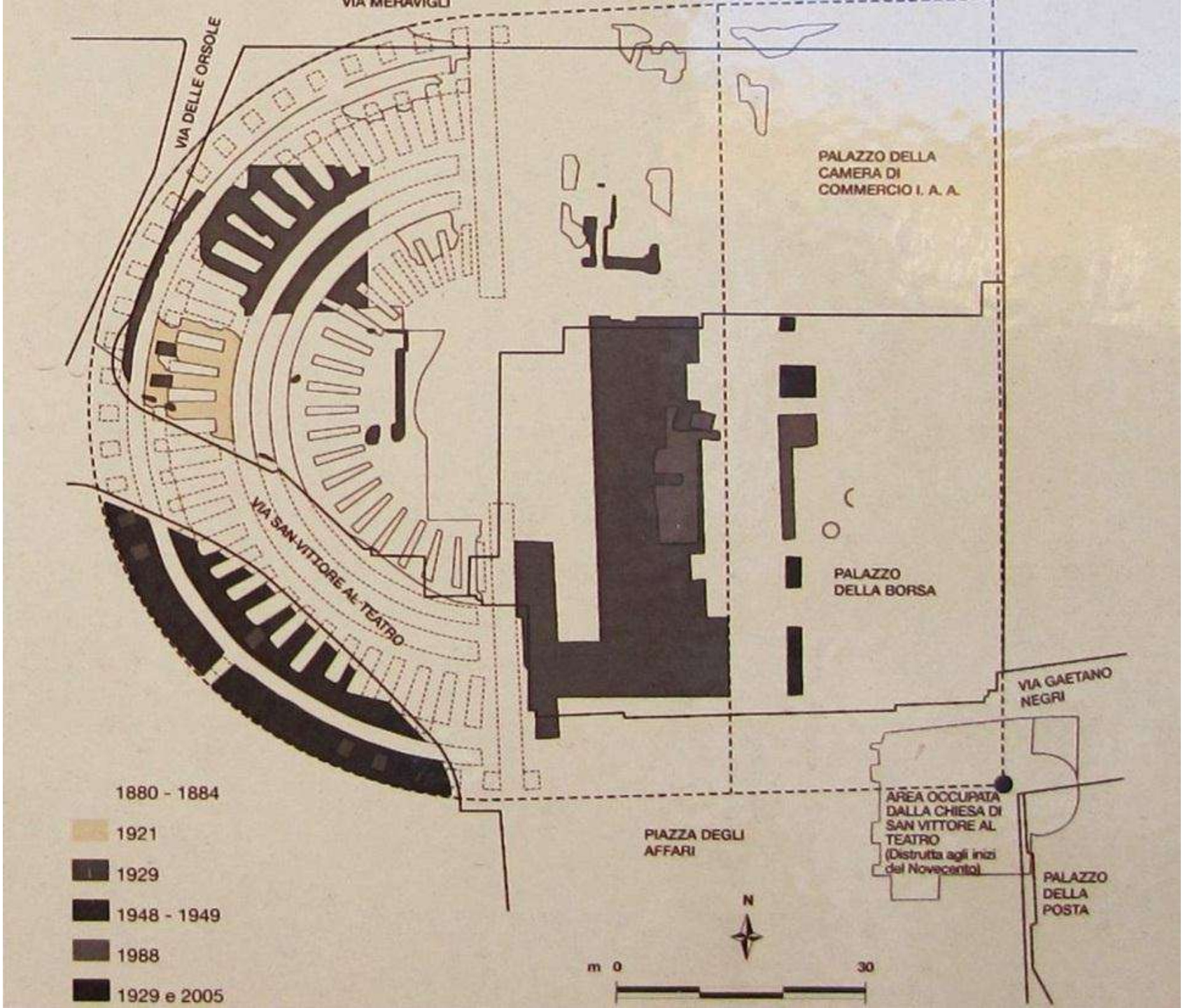
Cinema equipment complex - film projection and facility rooms:
- rewinding;
- aggregate cooling of film projectors;
- the room of the film mechanic.

It is necessary to provide a separate evacuation exit directly to the street from these rooms.

THEATERS

Ricostruzione ideale
del teatro romano
di Milano




VIA MERAVIGLI
VIA DELLE ORSOLE
PALAZZO DELLA CAMERA DI COMMERCIO I. A. A.
VIA SAN VITTORE AL TEATRO
PALAZZO DELLA BORSA
VIA GAETANO NEGRI
AREA OCCUPATA DALLA CHIESA DI SAN VITTORE AL TEATRO (Distrutta agli inizi del Novecento)
PIAZZA DEGLI AFFARI
PALAZZO DELLA POSTA
1880 - 1884
1921
1929
1948 - 1949
1988
1929 e 2005
N
m 0
30

The theater building is divided into two parts in structure: **stage and audience**. The first includes all premises and structures related to stage maintenance, the second - auditorium, lobby, distribution room

and cashier's lobby and service room complex. The stage part occupies 60-70% of the total volume of the theater building, the audience - 40-30%.

Structure of the theater building:

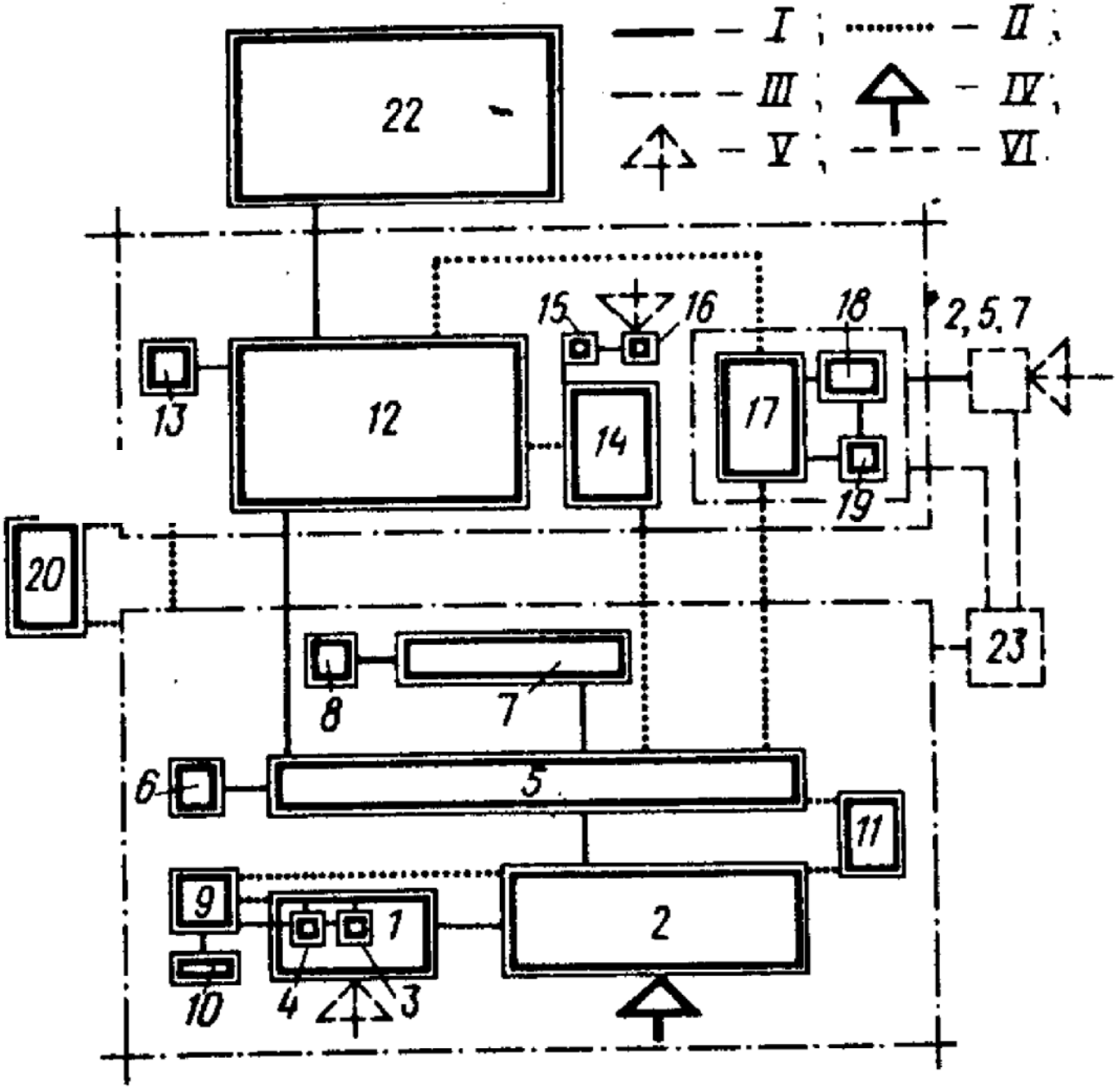
- premises of the spectator complex;

- premises of the demonstration complex (auditorium, stage itself, stage technological rooms);

- stage maintenance rooms (for creative and technical personnel; warehouses);

- administrative and economic premises;

- production premises.

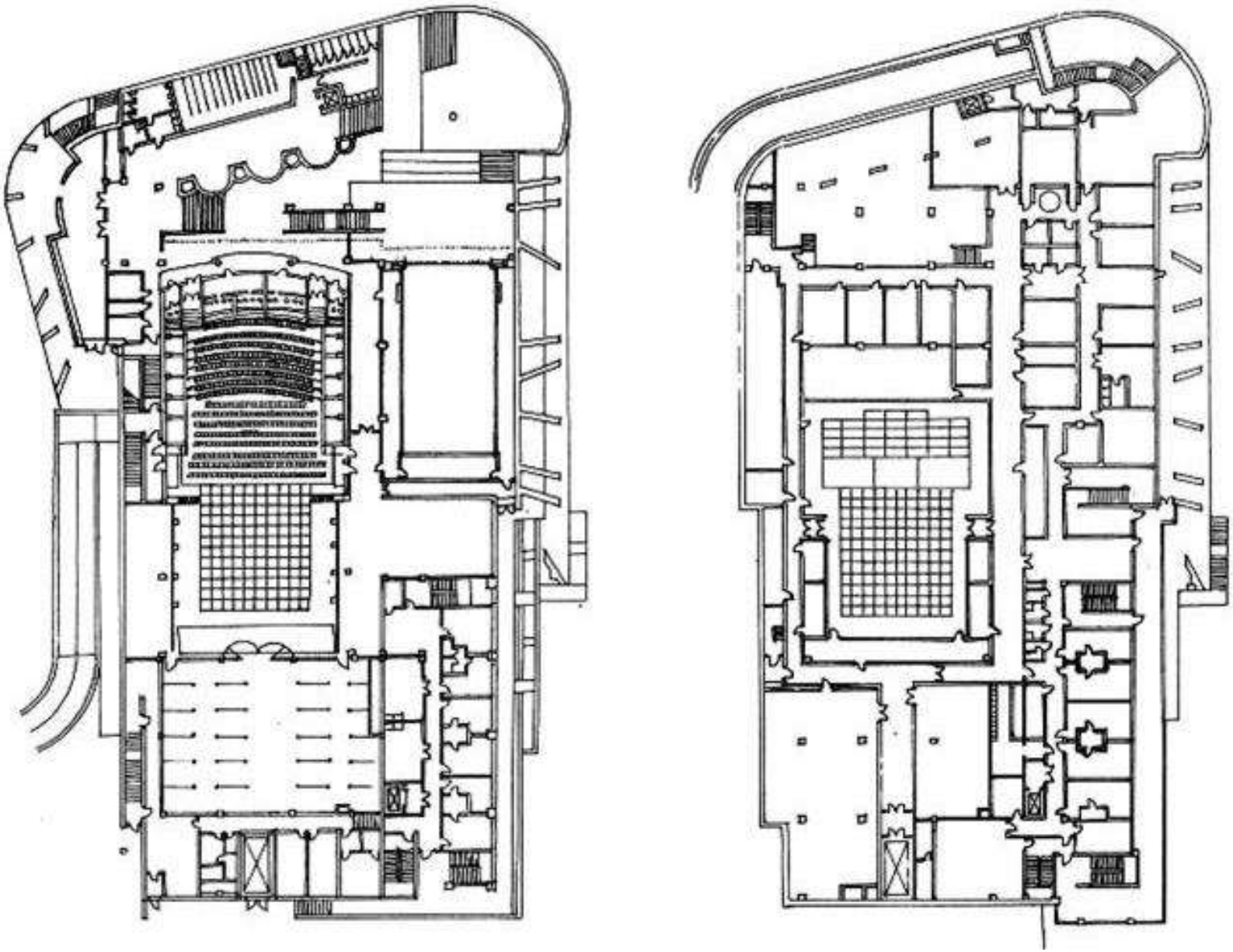

I
II
III
IV
V
VI
22
15
16
18
2, 5, 7
13
12
14
17
19
20
23
8
7
6
5
11
9
1
2
10
4
3

General Functional Planning Diagram of Space Links

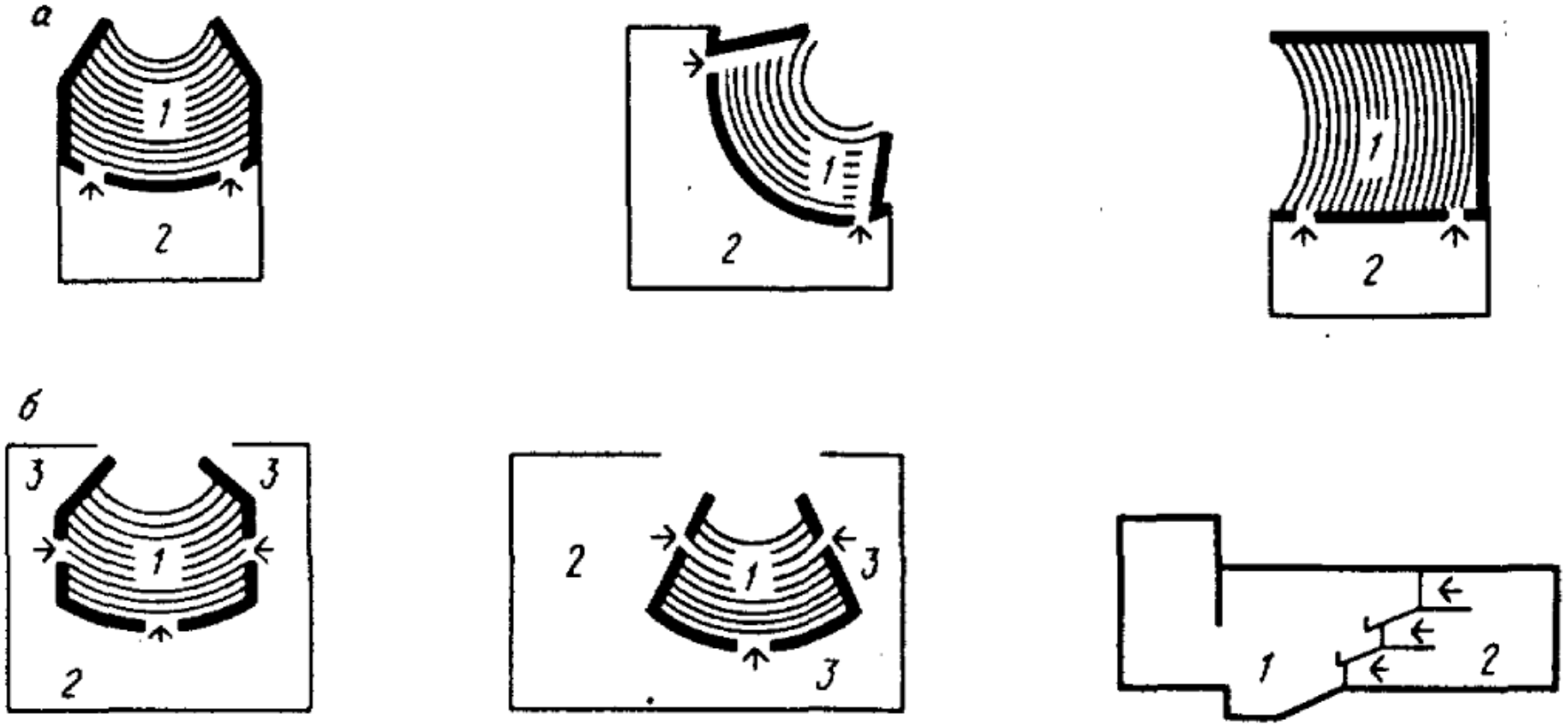
spectator complex:

1 - cash lobby; 2 - entrance lobby; 3, 4 – booth ticket offices and on-duty administrator; 5 - distribution lobby; 6, 7, 8 - dressing rooms; 9 - office of the chief administrator ; 10 - room of ticket distributors; 11 - children's room; 12 - foyer; 13 - pantry; 14 - buffet; 15 - washing, pre-cooking; 16 - warehouse; 17 - exposition room of the museum; 18 - storage facility; 19 - staff room; 20 - sanitary units; 21 - smoking; 22 - auditorium; 23 - club premises;

I - connections; II - linkage variants; III - units; IV - input; V - possible input; VI - possible room (communications)



PYOTR FOMENKO THEATER-WORKSHOP IN MOSCOW,
ARM. S.V. GNEDOVSKY, M.M. GAVRILOVA, M.YU. KRYLOV,
I. S. ZAKHAROV, O.B. BARSUKOVA, CONSTR. S.Y. GNEDOVSKY, 2004



Examples of schemes for building a spectator complex:
a - foyer without kuluars; b - foyer with kuluars and organization of entrance to the hall from them; 1 - auditorium; 2 - foyer; 3 - kuluars

Rooms of the demonstration complex

The main goal of the functional and planning solution of the theater can be defined as the creation of a complex of facilities for the perception of the performance by the audience and for the preparation and conduct of it by the creative team.

The capacity of the auditorium is recommended depending on the goal of the theater:

- in the drama theater - 500-800 seats;
- in musical and drama theater - 500-1000 seats;
- in the musical comedy theater - 800-1200 seats;
- in the opera and ballet theater - 1200-1500 seats.

The different capacity of theaters is determined by the design task.

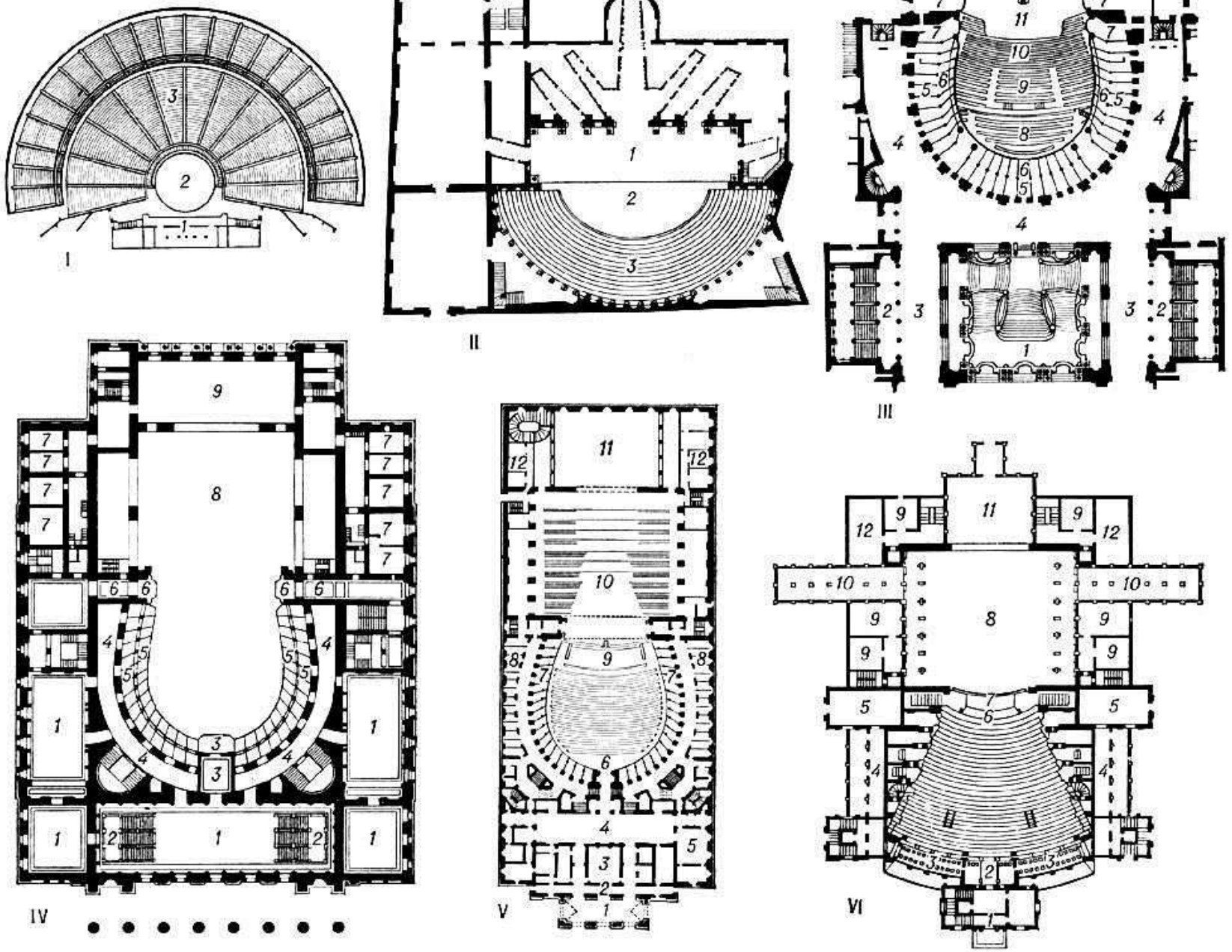
The area of the auditorium is accepted at a rate of 0.7 m2 per

place. Auditorium area (including balconies) defined within enclosing structures in front up to the stage, the advance stage or the barrier of the orchestra pit.

In the history of the theater, two main systems of organization have developed: **open and deep**. The first, coming from Antiquity, unites the audience and theatrical action in the scope of a single hall. At the same time, the audience is located on three sides of the stage. The other, coming from the Renaissance and the Baroque, separates the action on the deep stage from the auditorium with a portal frame. There are searches for various forms of stage display. The transformation technique reveals more possibilities in this direction.

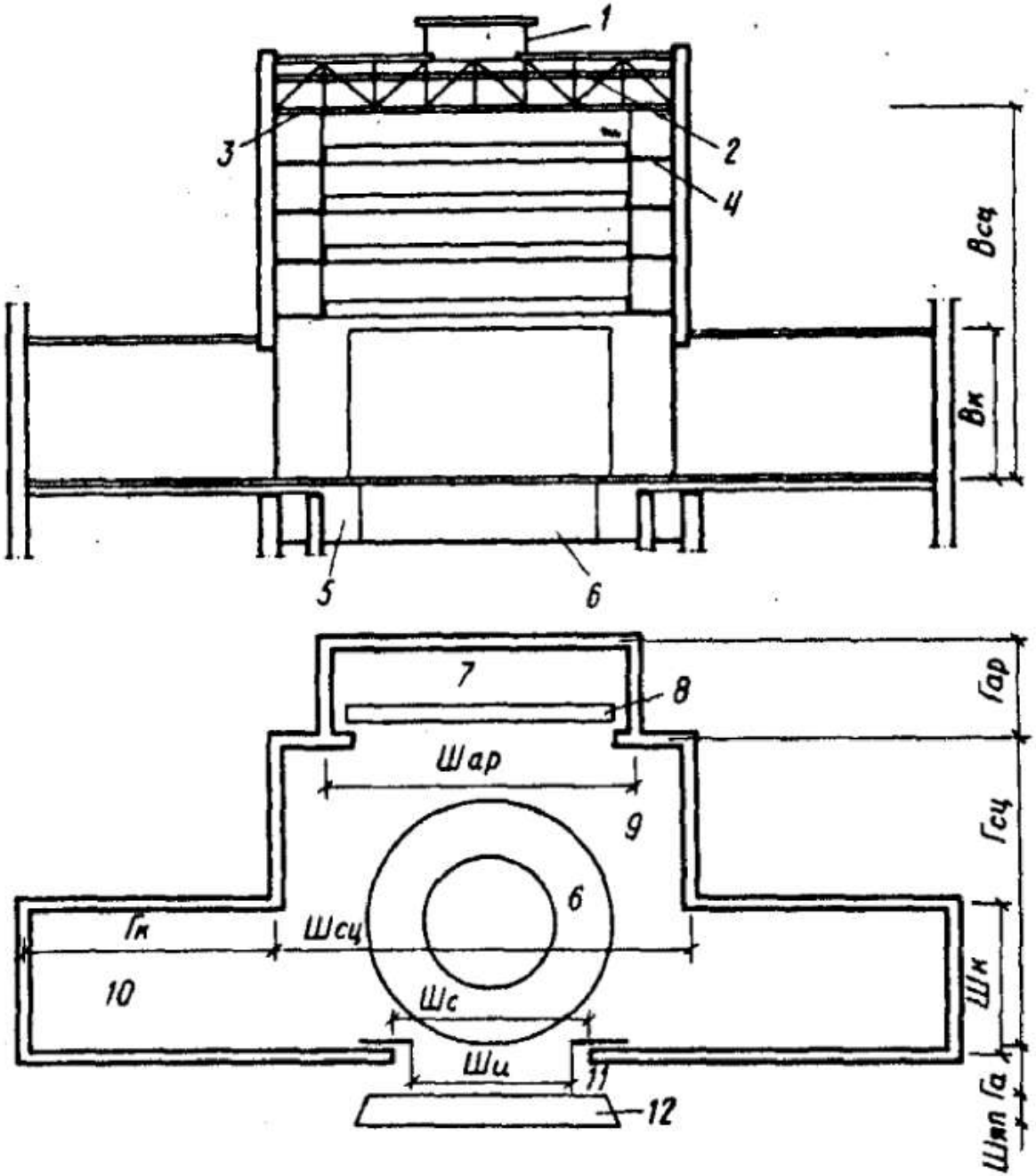
A portal or deep stage

With a deep stage, the performance is at first perceived by the viewer precisely as a performance, the action develops in another environment, in the "other world," separated from the hall.


I
II
III
IV
V
VI

The main parameter determining the dimensions and shape of the portal stage and the auditorium is the size of the playground. Practice has shown that the active action of dramatic performances takes place on a site from 8 to 14 m wide and from 5 to 10 m deep. For musical theaters with the participation of ballet, the playground should be at least 12 × 12 m. The width of the portal in the drama theater is 10-14 m, in the opera and ballet theater - from 14 to 16 m.

The width of the stage consists of the width of the playing space, or portal. There are side spaces sufficient to room special devices that decorate the sides of the curtains. There are also volume decorations, places for the actors and the placement of light equipment. Typically, the width of the stage should be at least 2 times the width of the portal hole. The depth of the stage is usually made 1.5 times the width of the portal. The deep stage is equipped with layers and lifts - devices for quick change of decorations. The height of the stage to the layers is three heights of the portal hole. In addition to the main stage, to speed decoration change of side stages, the lower stage and the rear stage are provided.


1
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5
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Всц
Вк
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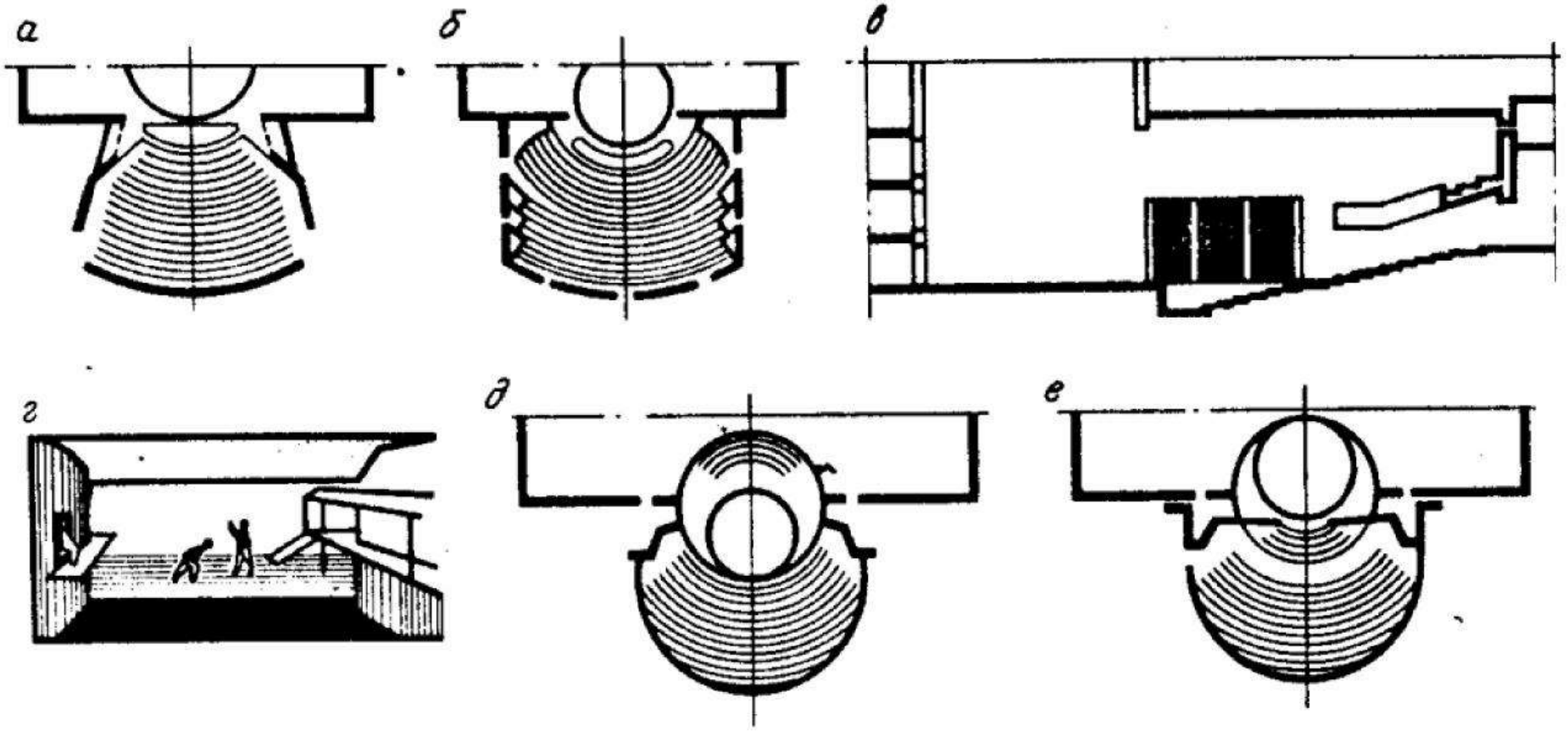
10
11
12
Гар
Гсц
Шк
Шап Га
Шар
Шсц
Шс
Ши
Гк

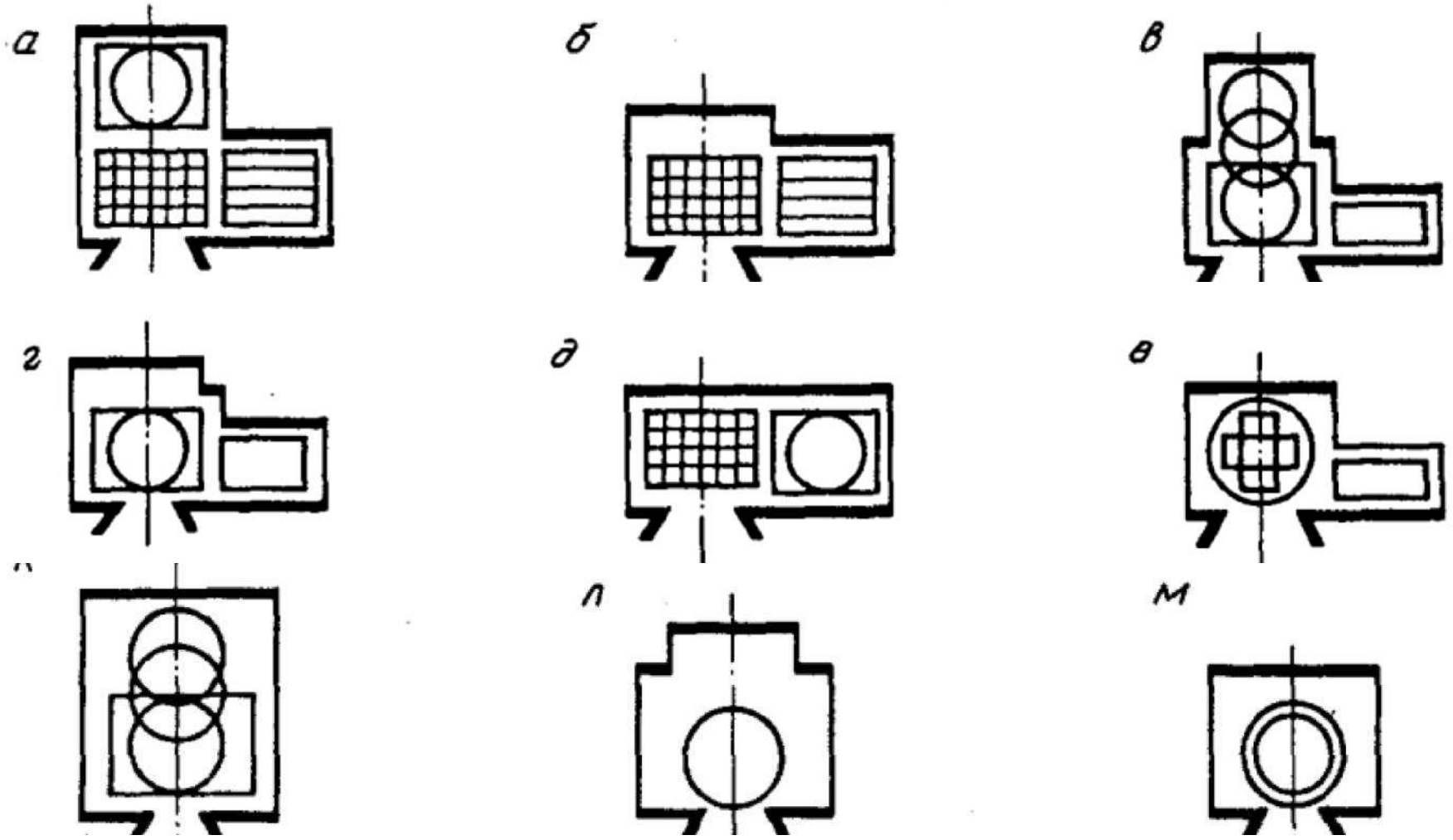
Diagram of construction of deep layers stage in plan and in lifts:

1 - smoke valves; 2 - blank platform; 3 - stage bars; 4 - working galleries; 5 - hold; 6 - rotating circle and ring of cutting-in type; 7 - rear stage; 8 - a safe cover for rolling decorations; 9 - stage; 10 – side stage; 11 - advance stage; 12 - opening of the orchestra pit;

Шсц - the width of the stage; Гсц - the depth of the stage; Всц - stage height; Шк - side stage width; Гк - side stage depth; Вк - side stage height; Шар - rear stage width; Гар - rear stage depth; Шс - construction portal width; Ши - performance portal width; Га – advance stage depth; Шяп - opening orchestra pit width



Deep layers stage schemes of varieties:
a - with side stage spaces;
b - with extended advance stage ;
c - with performance windows in the auditorium or stage walls;
d - with performance balconies or galleries in the hall;
d, e - with transformation into a center stage



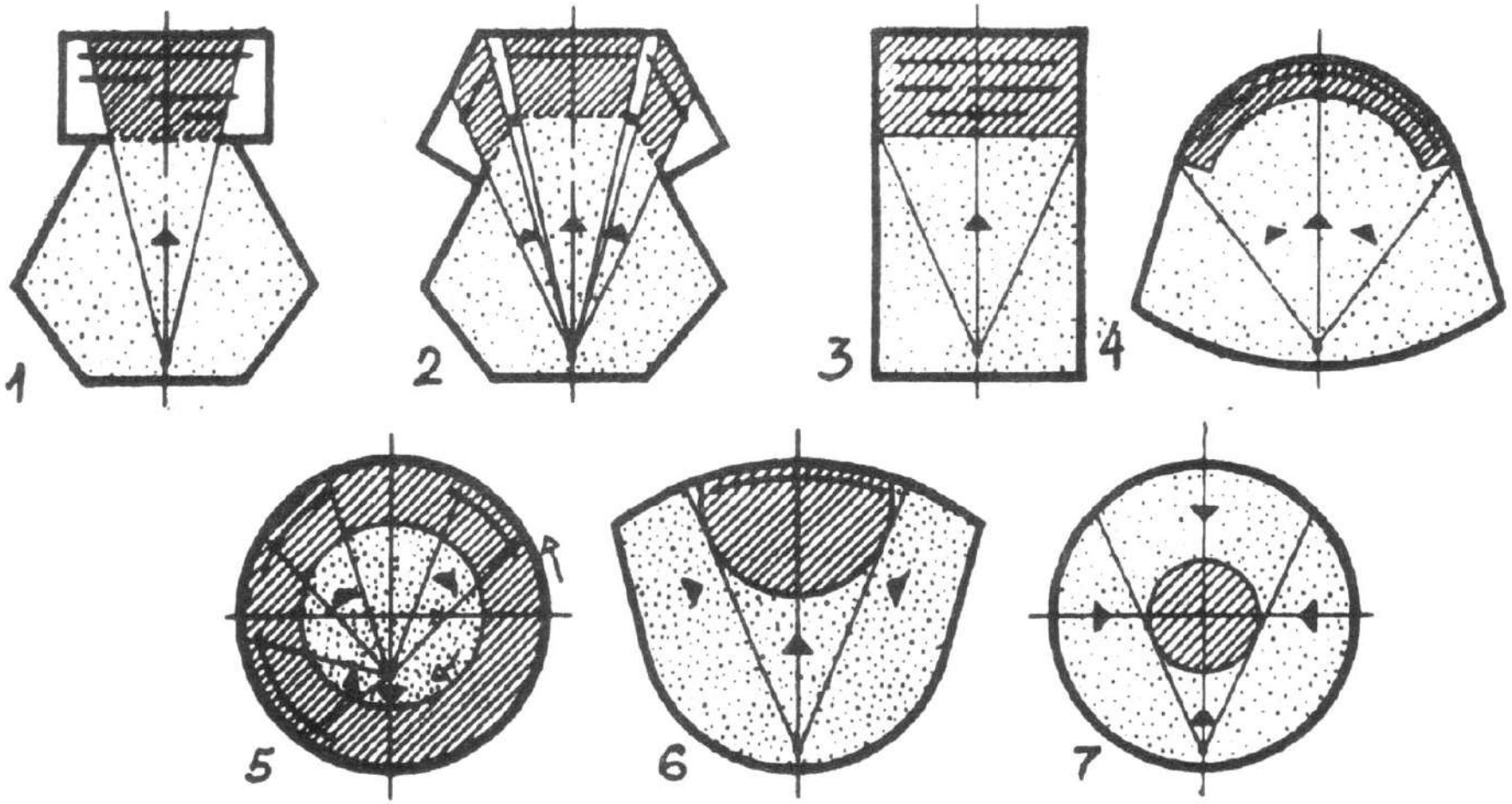
Examples of deep layers stage, side stage and rear stage schemes :
a-g - with one side stage and rear stage;
d-e - with one side stage without rear stage ;
k-l - with rear stage without side stage;
m - without side stage and rear stage

Main stage dimensions

stage	width	depth	height	construction portal		advance depth is not less than	rear stage			Side stage		
				width	height		width	depth	height	width	depth	height
C-1	18	12(15)	18	8(7)	5,5(5)	1,8	12	3	8,5	6	12	6,5
C-2	21	15	20	10(8)	6,5(5,5)	1,8	15	6	11	7,5	12	7,5
C-3	24	18	22	12(10)	7,5(6,5)	1,8	18	6	12	9	15	8,5
C-4	27	21	24	14(12)	8,5(7,5)	1,8	21	9	13,5	12	18	9,5
C-5	30	21	26	16(14)	9,5(8,5)	1,8	24	9	15	12	21	10,5

Orchestra pit dimensions

Theater	Width, m, minimum	
	orchestra pit	aperture
Drummatic and musical-drummatic	3	2
Musical camedia	4,5	3,5
Opera and Ballet	6	4,5



Stage Types:
1 – portal depth; 2 - three-portal depth; 3 - non-portal; 4 - panoramic;
5 - annular; 6 - tripartite; 7 - central

PARIS OPERA HOUSE, Archpriest S. GARNIER

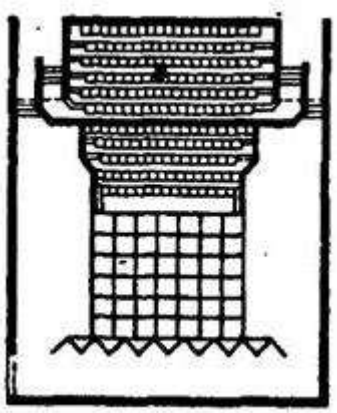

CHORECGRAPHIE
ACADEMIE NATIONALE DE MUSIQUE
POESIE LYRIQUE

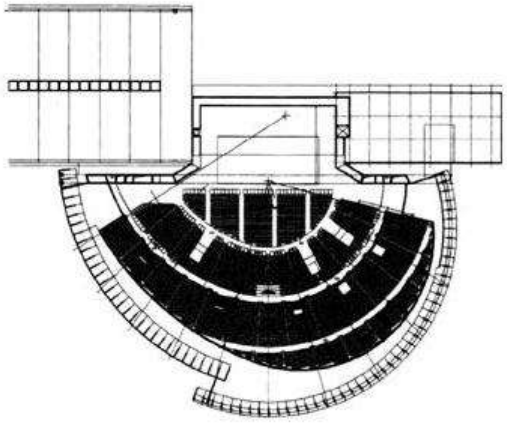
OPERA THEATER IN DRESDEN, G. ZEMPER


LES GRANDES MARCHES
LE BARBIER DE SEVILLE

OPERA THEATER ON THE SM. BASTILLES IN PARIS, CARLOS OTT, 1989

The construction of the **auditorium** is closely related to the stage. So, the perception of theatrical action freely comes from places limited by the width of the portal. The actor's facial expressions are considered read when the viewer moves away from the red line of the stage (projection of the portal onto the stage tablet) by 25 m in drama theater and 32 m - in the opera house. In addition, vertical and horizontal angles of the best perception are under norms.
There are two main types of auditorium: **tiered and amphitheatrical**.





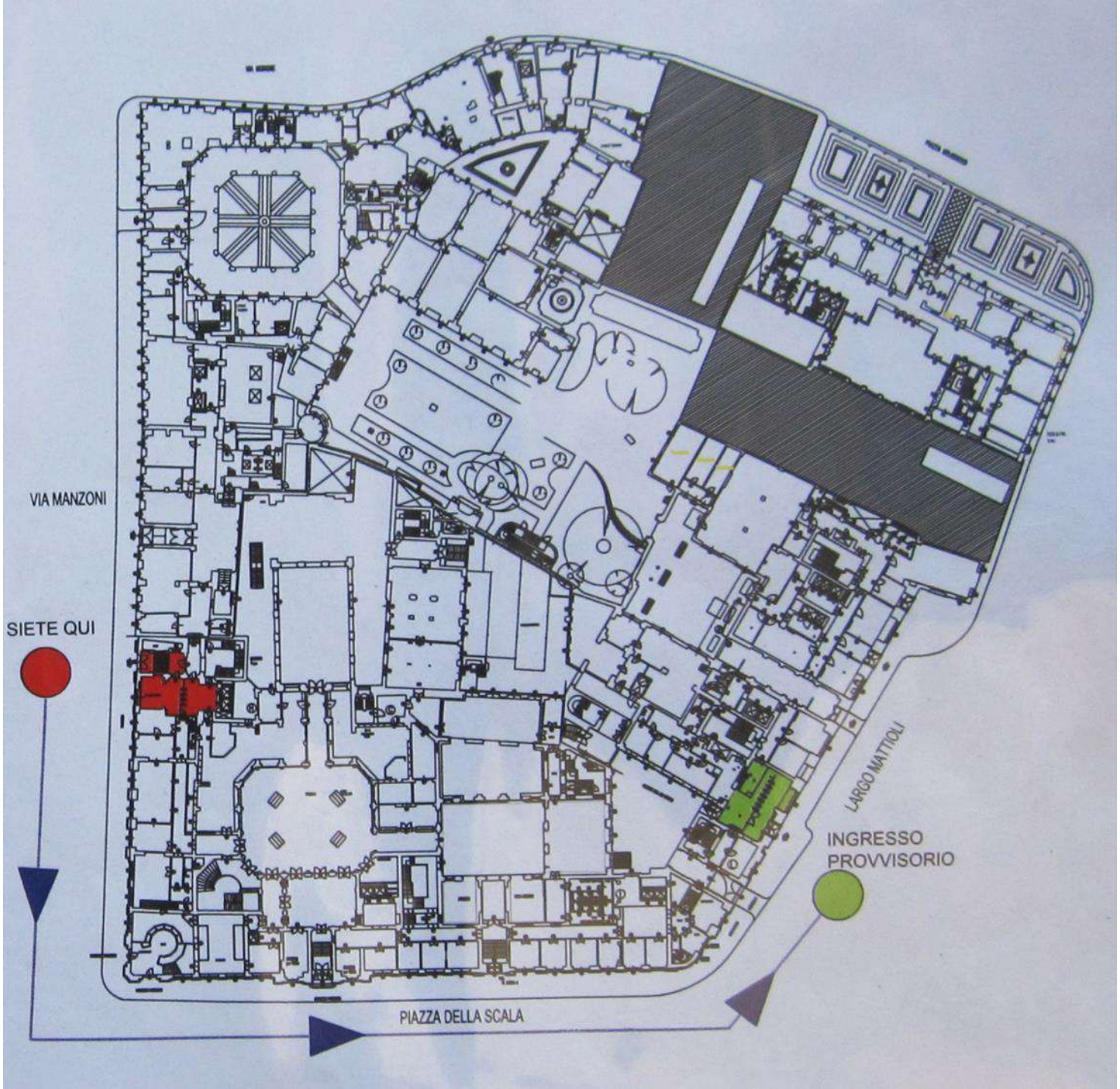
The volume of the auditorium is calculated based on the norm 4-6 m3 for one audience place in the drama theater and 6-8 m3 - in the opera house. Area of spectators' seats in the hall It can be taken from 0.7 to 0.8 m2.


231-ый сезон в Мариинском театре
The 231st season at the Mariinsky Theatre

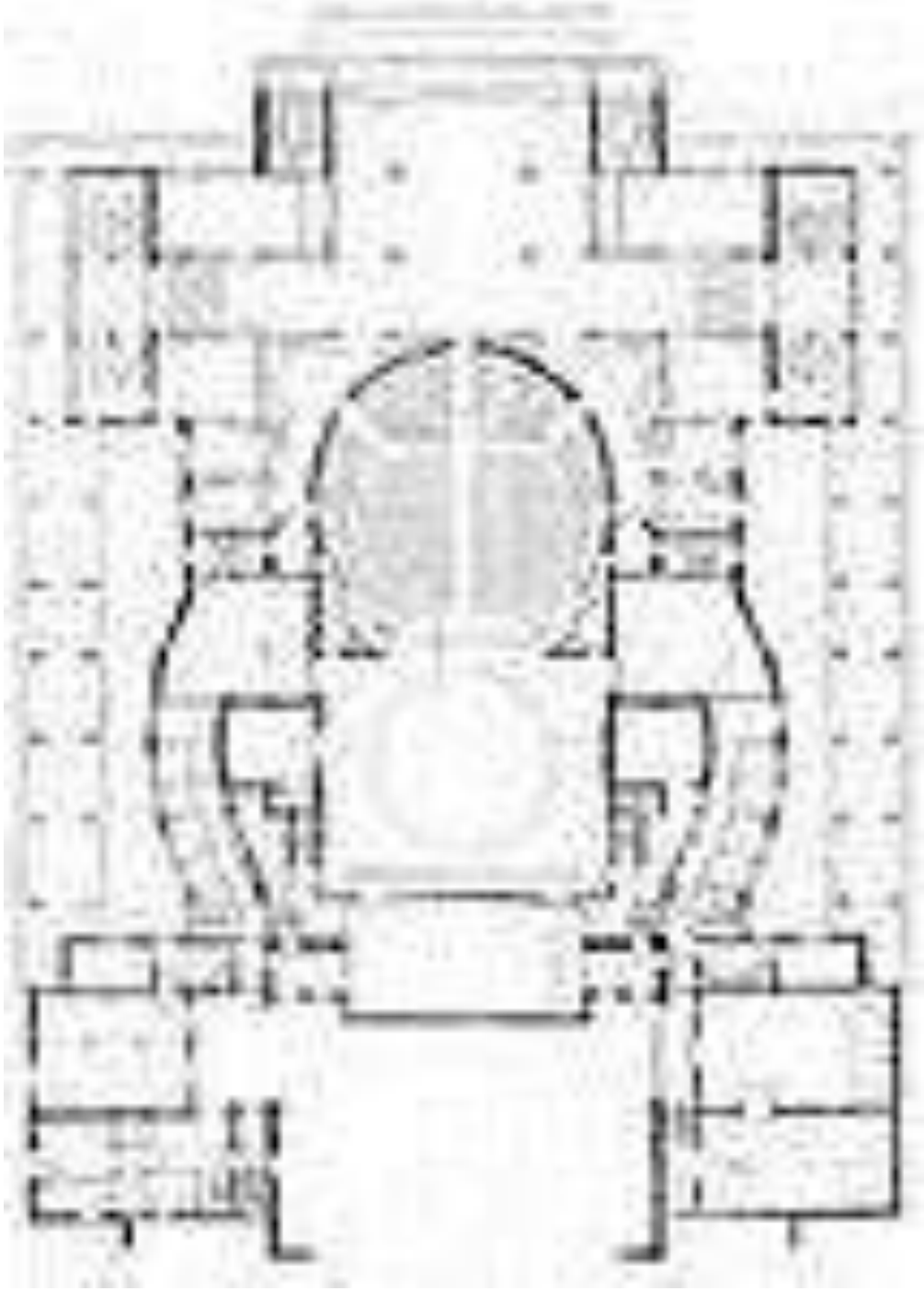
LA SCALA THEATER IN MILAN, GIUSEPPE PIERMARINI, 1778, RECONSTRUCTION OF MARIO BOT, 2002


BANCA COMMERCIALE ITALIANA
LEONARDO

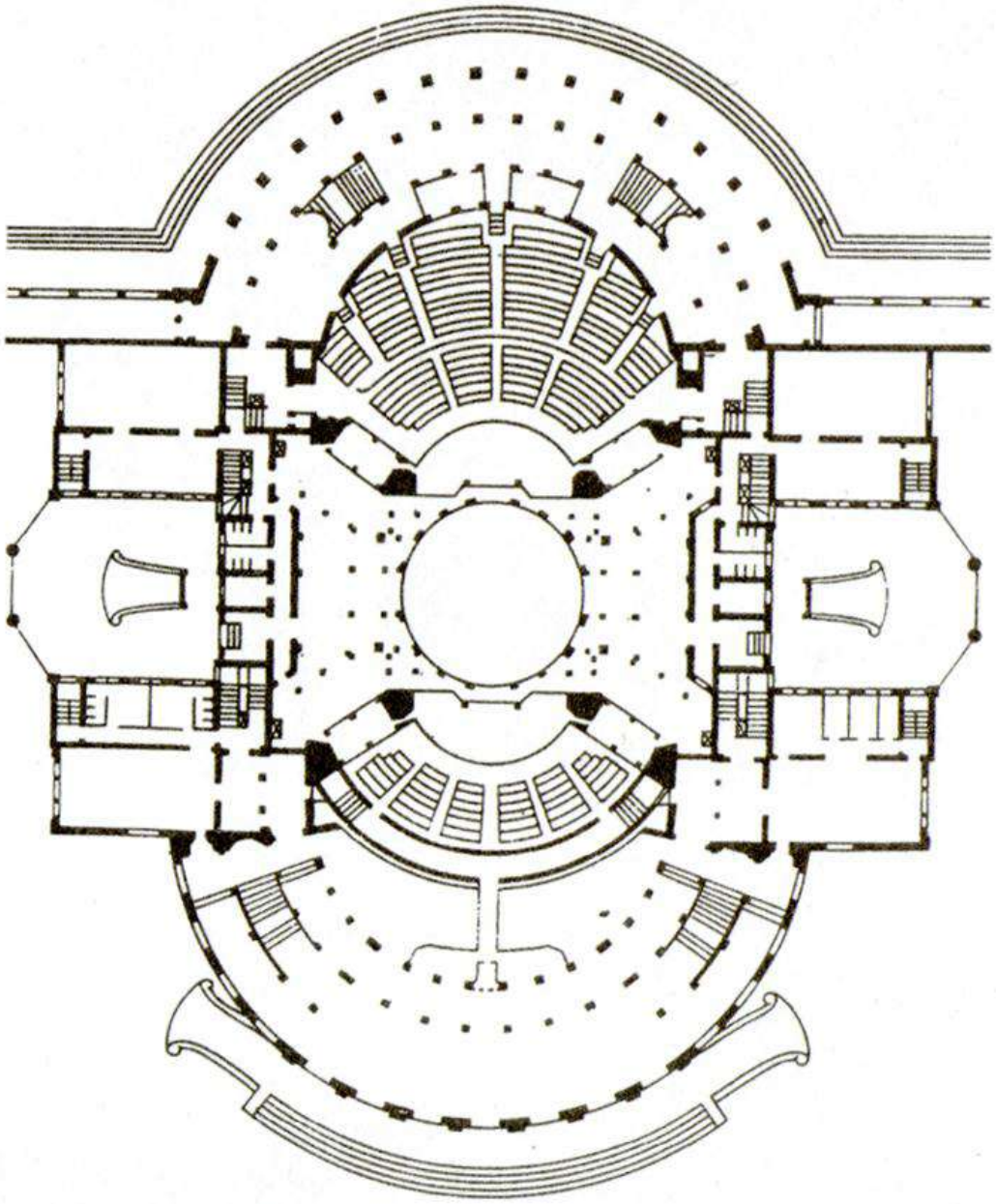

LA SCALA


VIA MANZONI
SIETE QUI
LARGO MATTIOLI
INGRESSO
PROVVISORIO
PIAZZA DELLA SCALA

DRAMA THEATER. GORKY IN ROSTOV-ON-DON, SCHUKO, GELFREICH, 1936, RECONSTRUCTION



OPERA THEATER IN YEREVAN, A. TAMANYAN, 1936



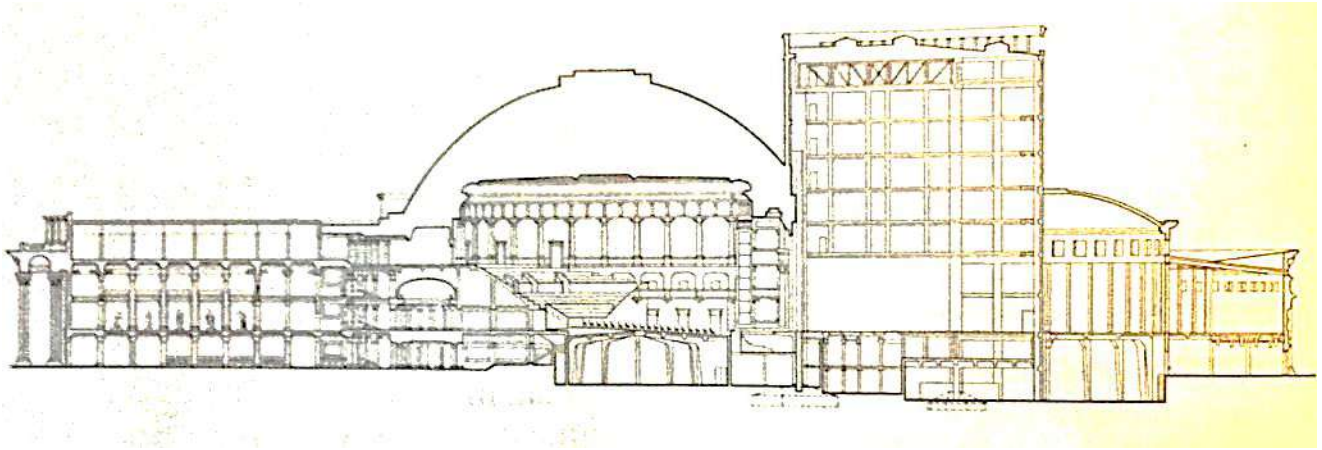
PLANETARY THEATER

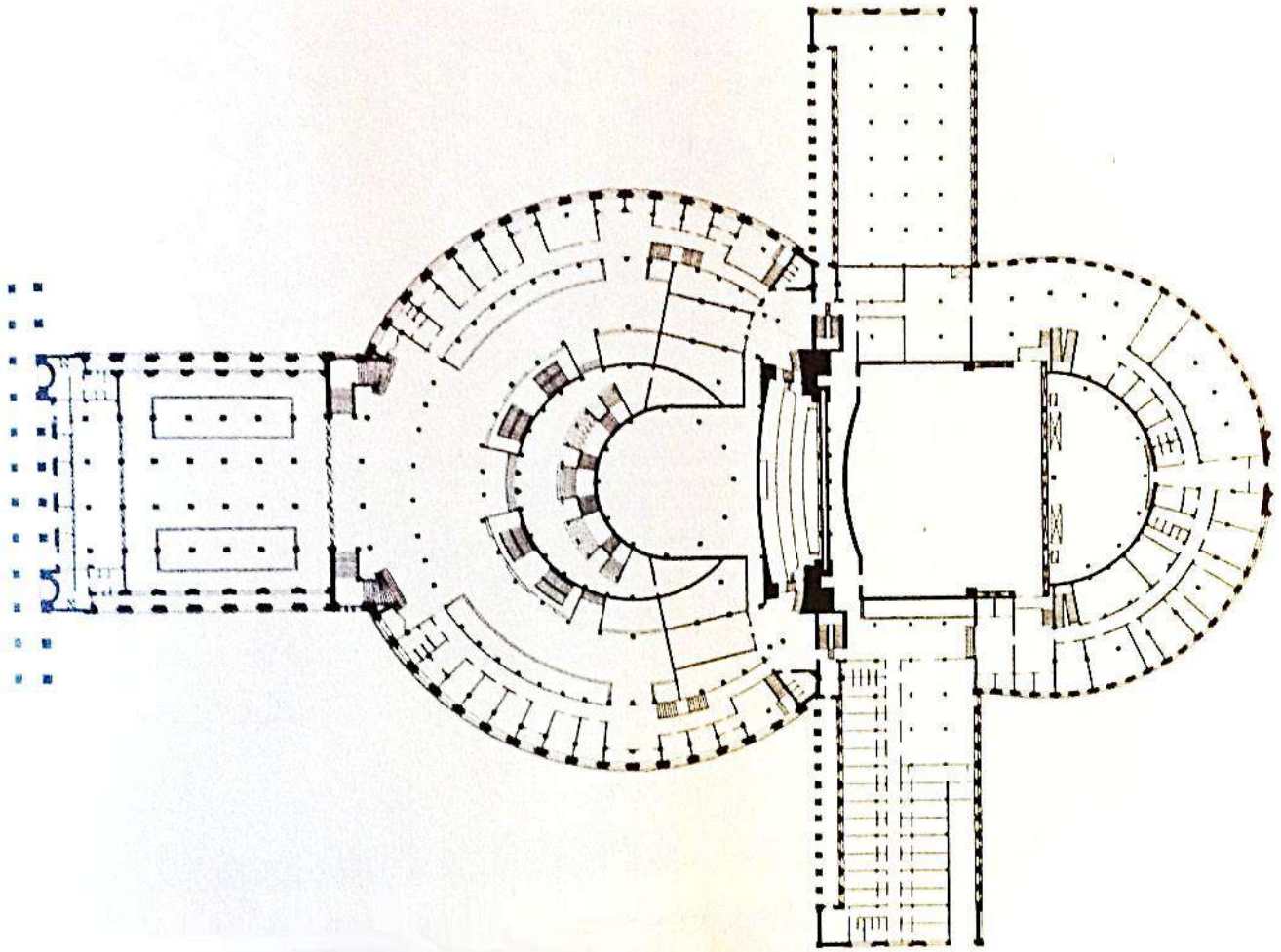
**OPERA AND BALLET THEATER IN NOVOSIBIRSK,
T. BART, A. GREENBERG, M. KURILKO,
SECOND PHASE A. SCHUSEV, V. BRICKENBERG,
CONSTR. P. PASTERNAK, 1931-1933**

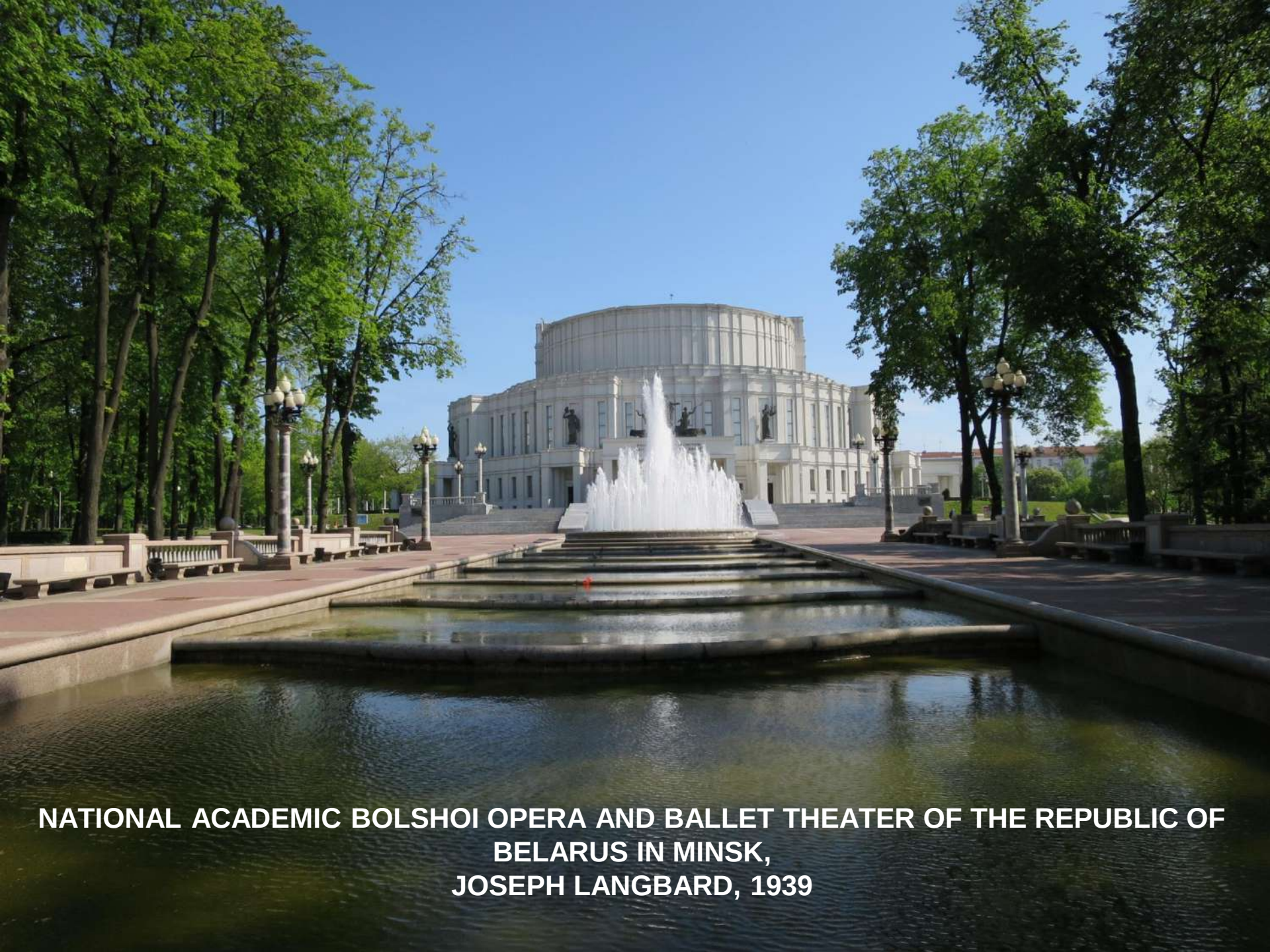

КОРСАР


НОВАТ
ОПЕРА І БАЛЕТ
novat.nsk.ru


13|15| ИЮЛЯ
20| СЕНТЯБРЯ
АИДА
fashion opera
В ИЮЛЕ С УЧАСТИЕМ
ВЕРОНИКИ ДЖИОЕВОЙ
ПРЕМЬЕРА
novat.nsk.ru
21| СЕНТЯБРЯ
22
НАЧАЛО В 19:00
КОРСАР
ПРЕМЬЕРА
novat.nsk.ru
12+
27|28|29
СЕНТЯБРЯ
БАЛЕТ
СПАРТАК
novat.nsk.ru



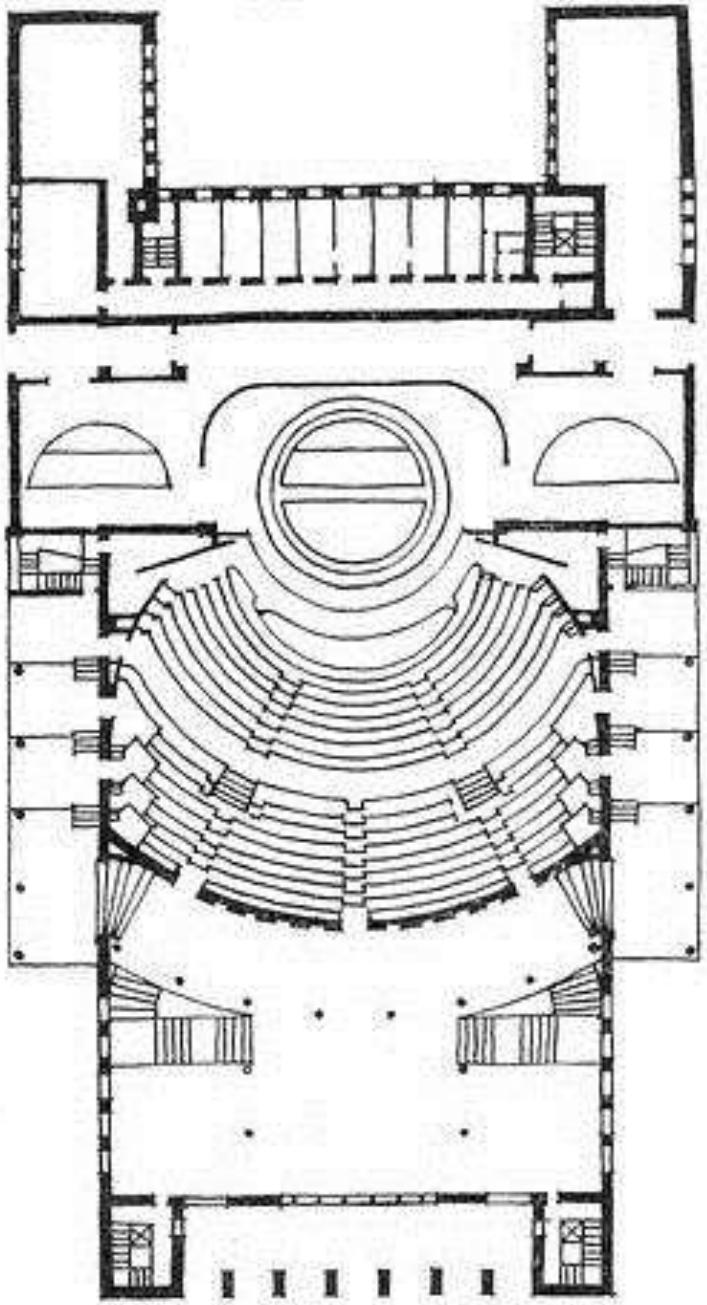




NATIONAL ACADEMIC BOLSHOI OPERA AND BALLET THEATER OF THE REPUBLIC OF BELARUS IN MINSK,
JOSEPH LANGBARD, 1939

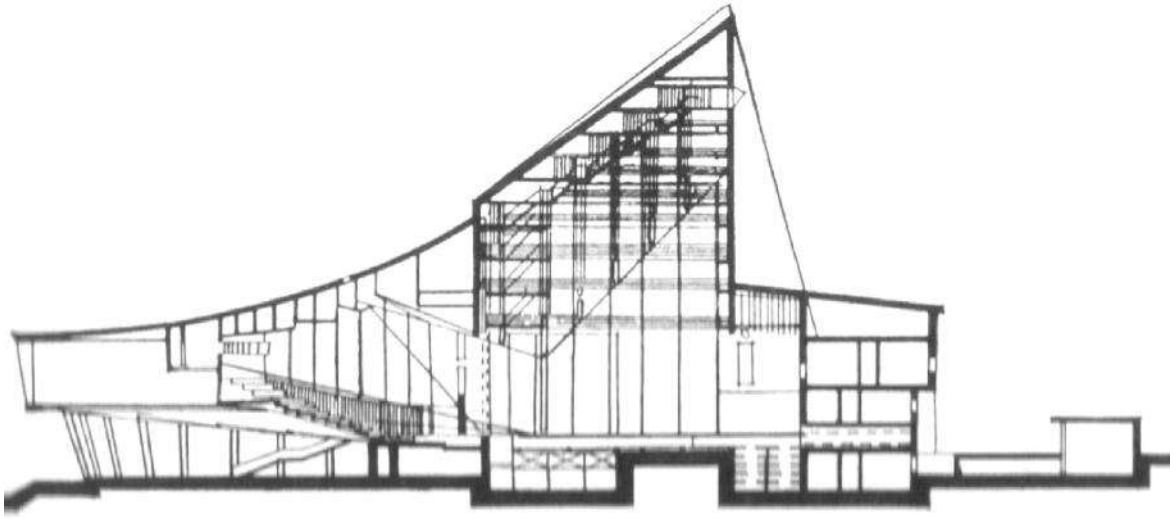

НАЦЫЯНАЛЬНЫ АКАДЭМІЧНЫ
ВЯЛІКІ ТЭАТР ОПЕРЫ І БАЛЕТА
КАСА
КАСА

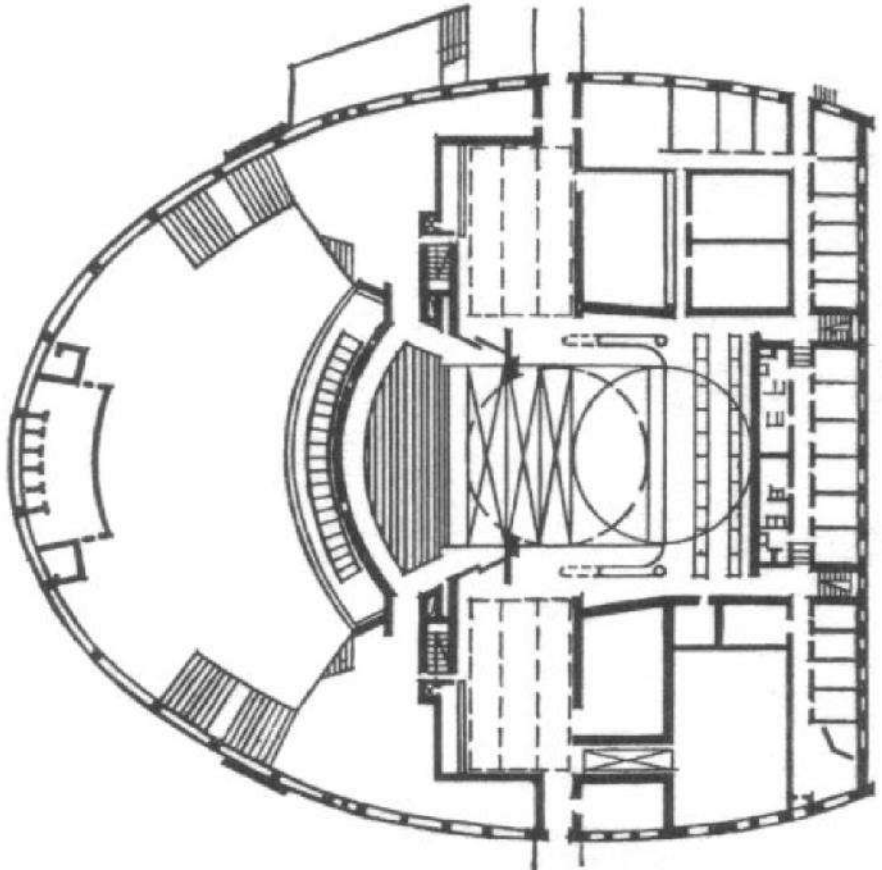
THEATER OF YOUNG SPECTATORS THEATER OF YOUNG SPECTATORS (TUZ) IM. A. A. BRYANTSEVA IN ST. PETERSBURG, A.V. ZHUK, T.P. KOROTKOVA, N.N. FEDOROVA, M.A. WILNER, INZH. L. Z. BABURINA, 1959-1960 GG




ДОХОДНОЕ МЕСТО
5D кино

THEATRE OF YOUNG SPECTATORS IN NOVOSIBIRSK
(ACADEMIC YOUTH THEATRE "GLOBE"),
A. SABIROV, M. STARODUBOV, 1966 -1971

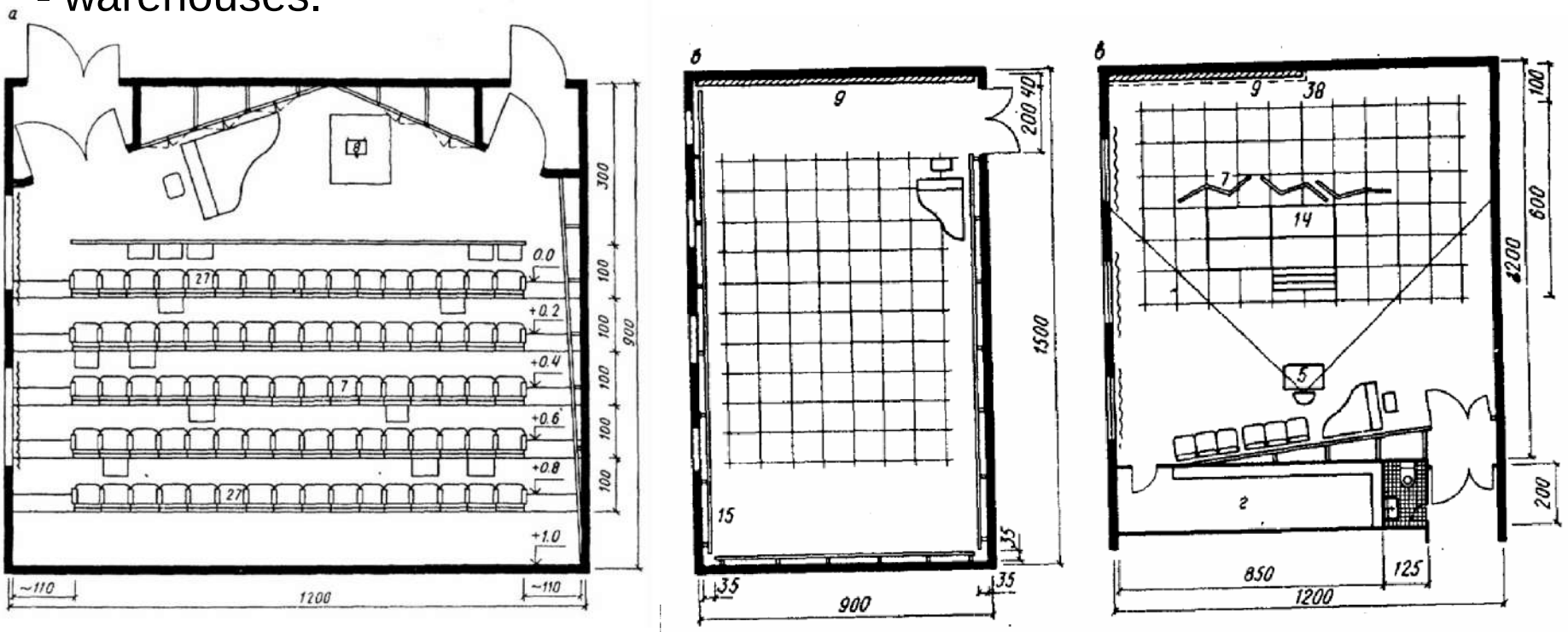




NATIONAL THEATER OF CATALONIA IN BARCELONA, RICARDO BOFILL, 1996

Stage Rooms:

- premises for waiting to enter the stage;
- artistic rooms;
- rehearsal rooms;
- warehouses.

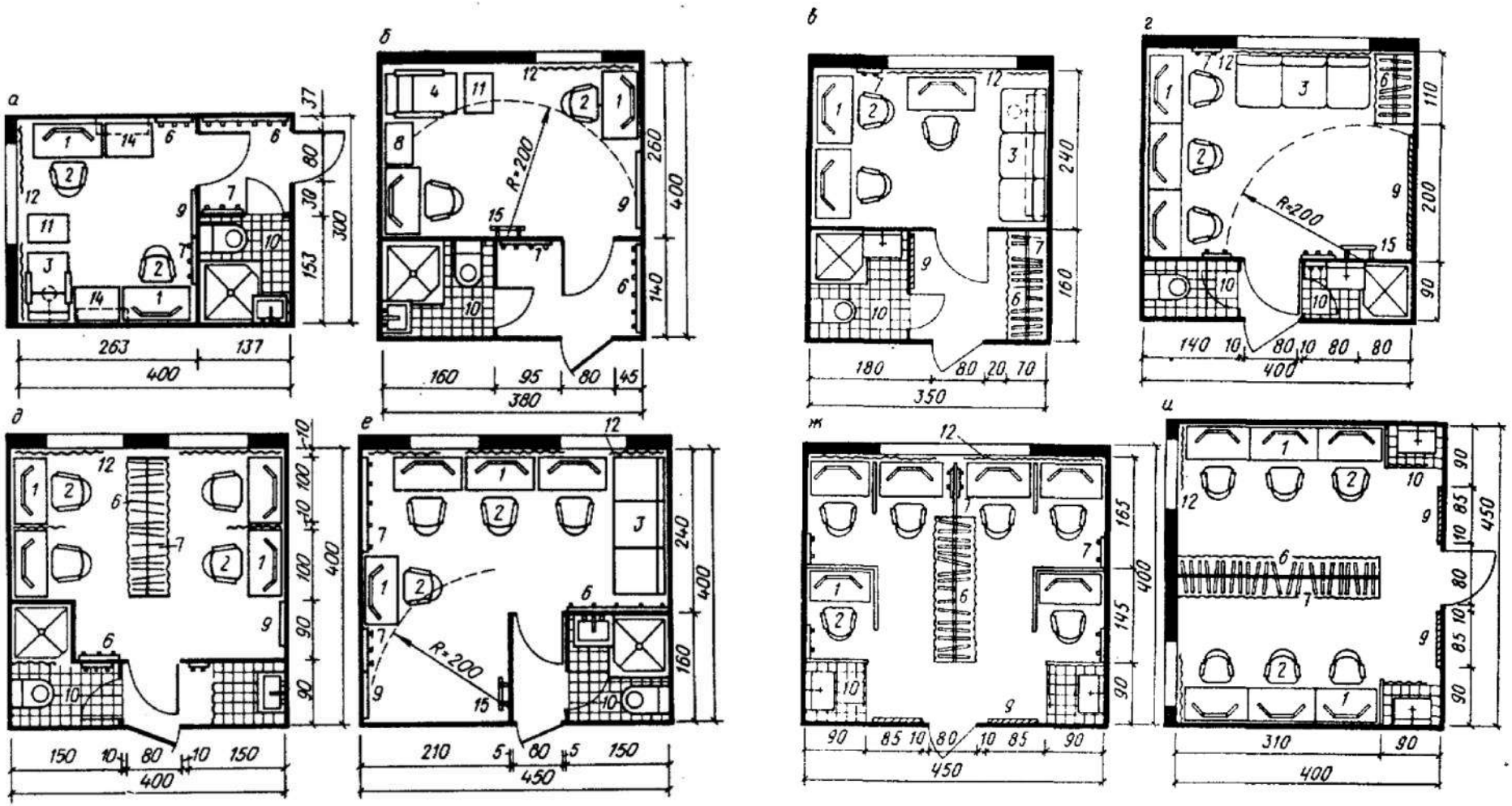


Examples of the layout of rehearsal halls:

а - a hall for rehearsals of the choir in the Opera and Ballet Theater;

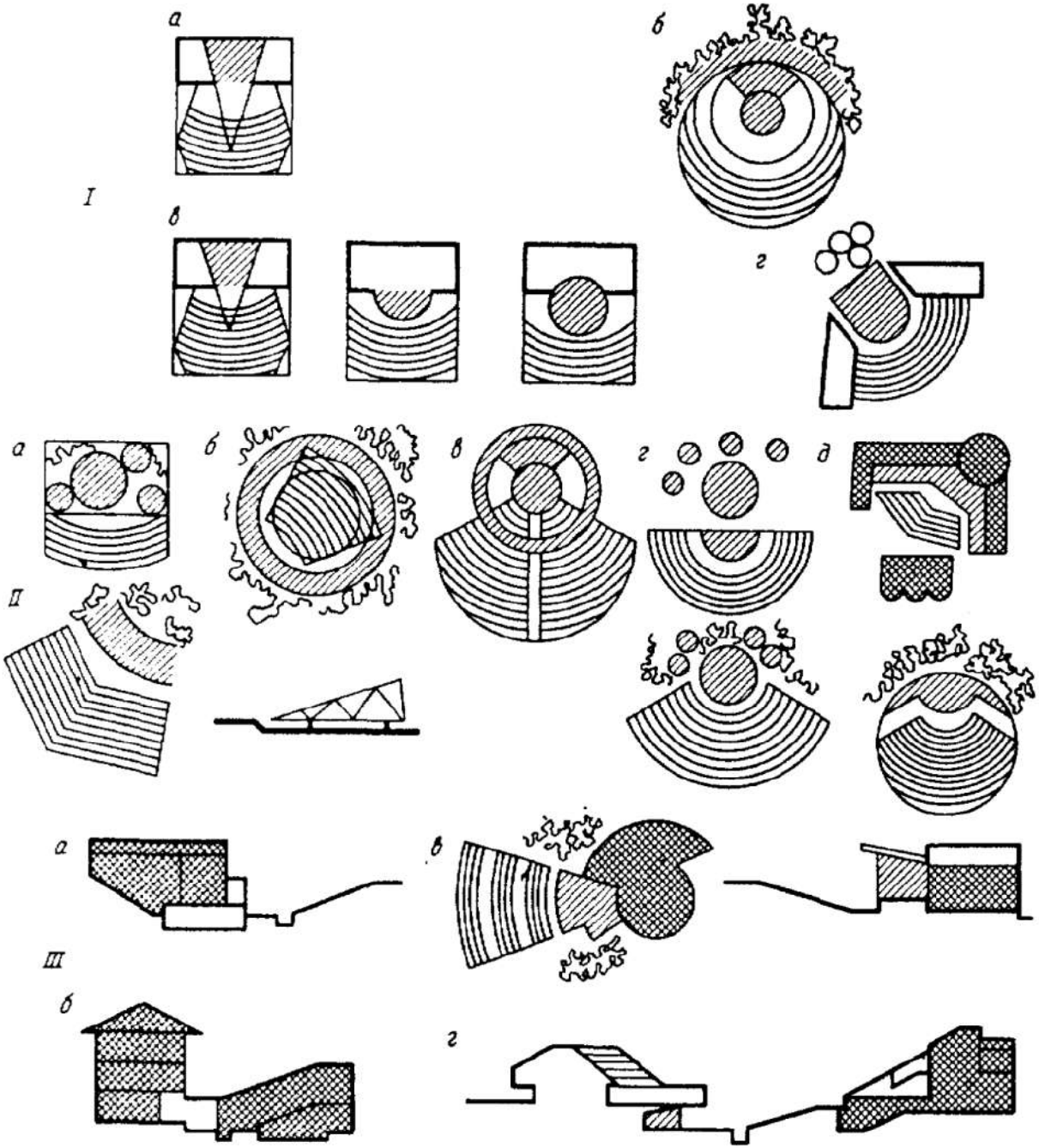
б - a hall for rehearsals of ballet and musical comedy theater with a width of the performance portal of 10 m;

в - a small rehearsal hall of the theater with a width of the performance portal of 10 m



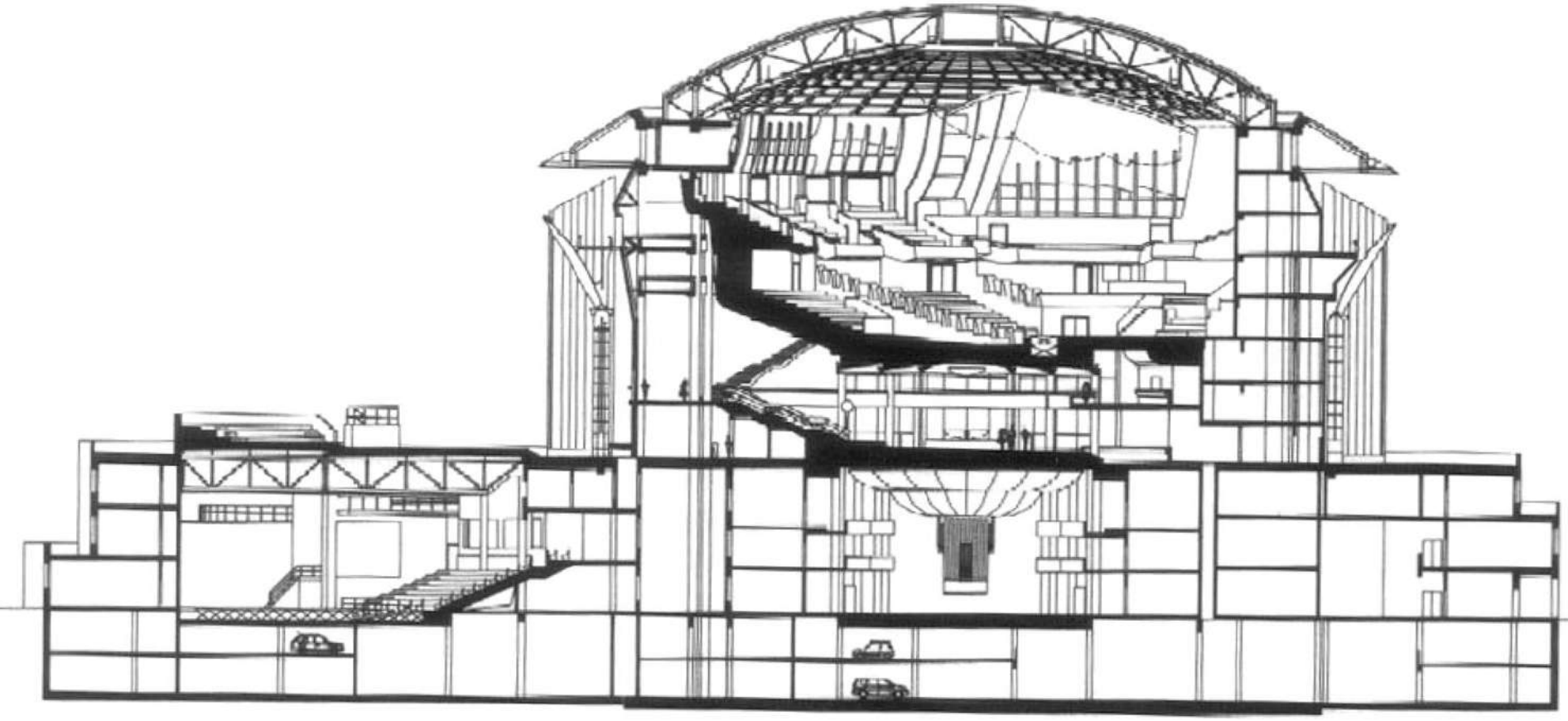
Examples of the layout of group artistic rooms:
a - for two actors of the drama theater; b - for two ballet soloists; in - for three actors of the drama theater; d - for three ballet dancers; d - for four actors of the drama theater; e - for four ballet dancers; g - for six actors of the drama theater; and - for six ballet dancers (dimensions are given in centimeters)

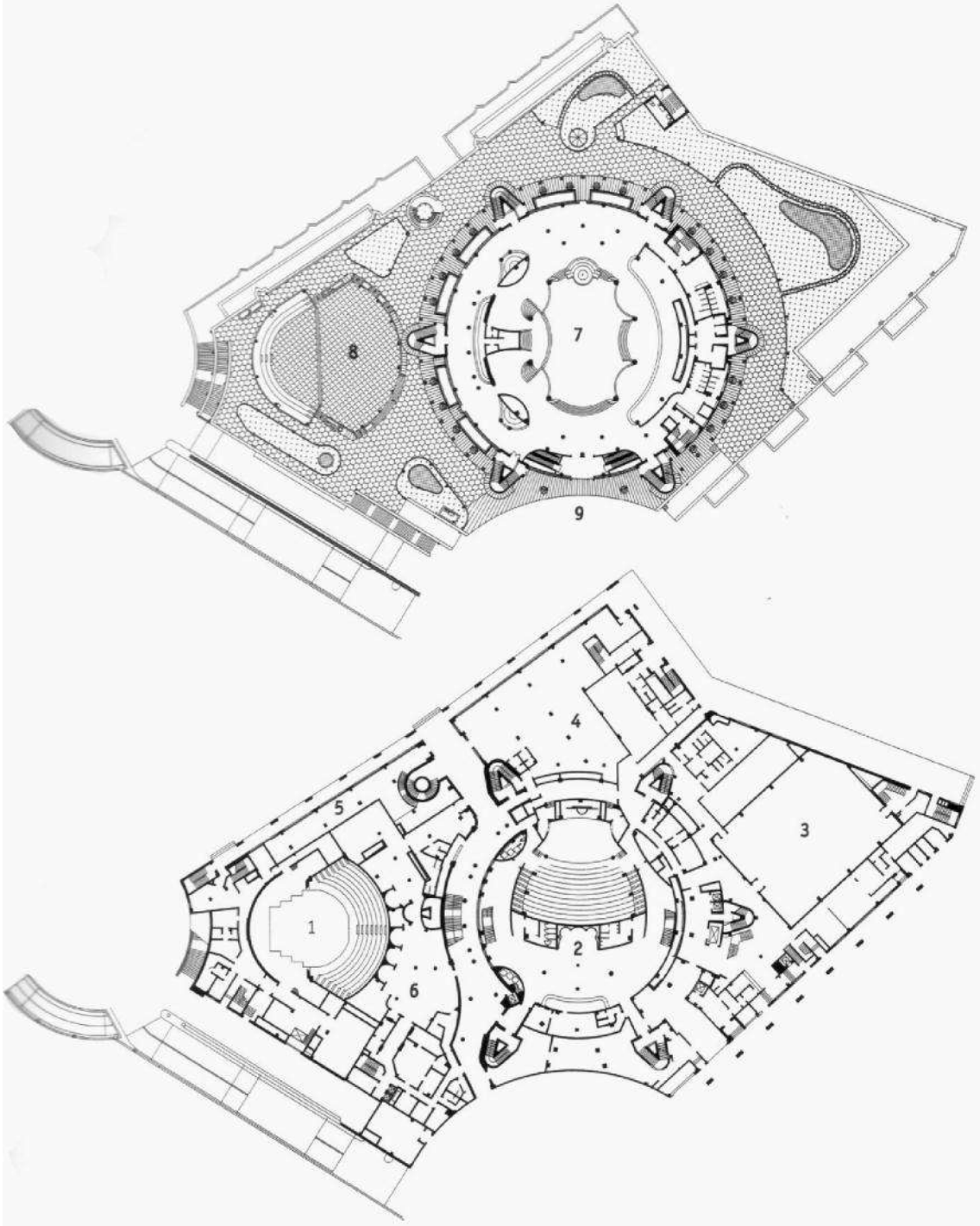
Rooms	Dimensions (length x width x height) of rehearsal halls, m, theaters						
	Drama theater		Musical comedy				opera and ballet
	Со сценами						
	С-1	С-2	С-3	С-3	С-4	С-4	С-5
Rehearsal rooms:							
Big	9x9x5	12x12 x6	15x15 x6	15x15x 6	18x18x7 ,5	18x18x7 ,5	21x21x7 ,5
Small	9x6x3, 6	9x9x3, 6	12x12 x5	12x12x 5	15x12x6	15x12x6	15x15x6
Rehearsal rooms:							
Ballet	—	—	—	15x9x4 ,5	18x12x4 ,5	18x12x4 ,5	18x15x4 ,5;
							18x15x4 ,5
Orchestra	—	—	—	9x6x4, 2	12x9x5, 1	15x9x5, 7	15x12x6
Chorus	—	—	—	6x6x4, 2	9x6x4,2	9x9x4,2	12x9x4, 2; 9x9x4,2
Rehearsal rooms	18x9x 6	18x9x 6	24x12 x6	—	—	—	—
Universal rehearsal room	5x6	5x6	5x6	5x6	6x6	6x6	6x6



Summer Theater Schemes

HOUSE OF MUSIC IN MOSCOW, LLC "PARTNERSHIP OF THEATER ARCHITECTS“ (YU. GNEDOVSKY, V. KRASILNIKOV , D . SOLOPOV, M. GAVRILOV, C. GNEDOVSKY), 2002




8
7
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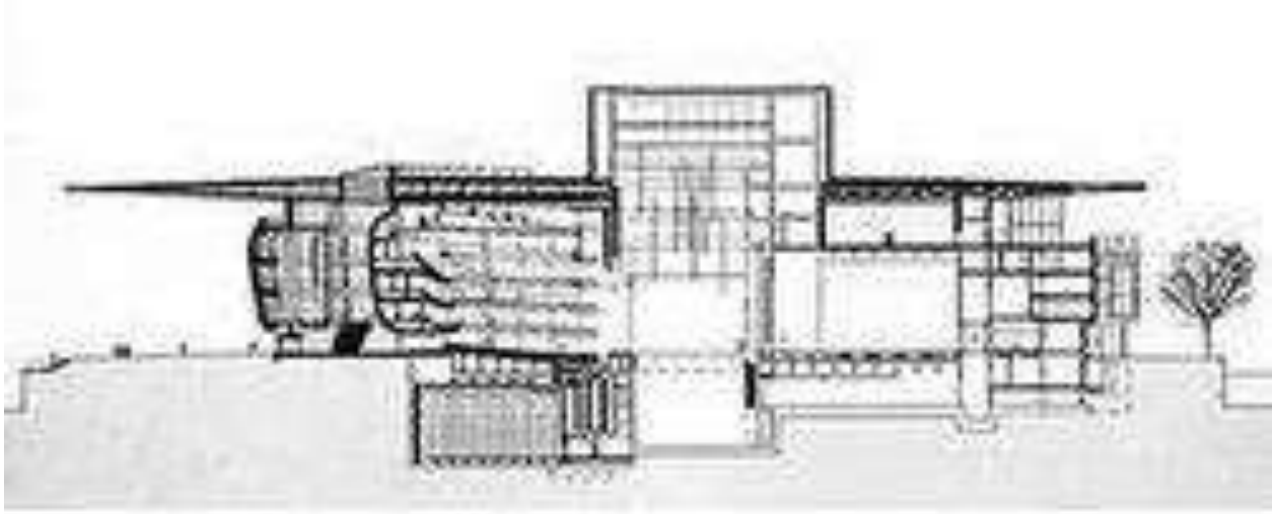
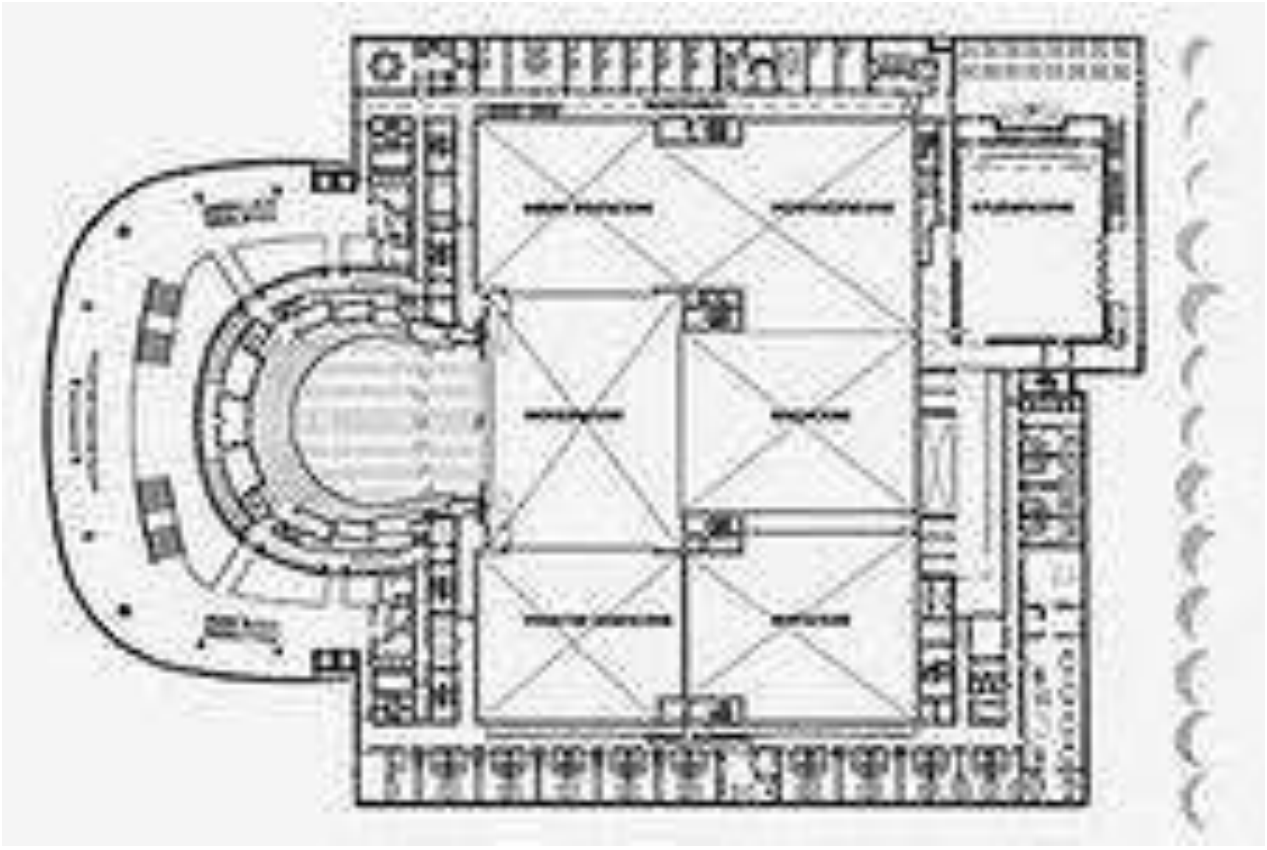
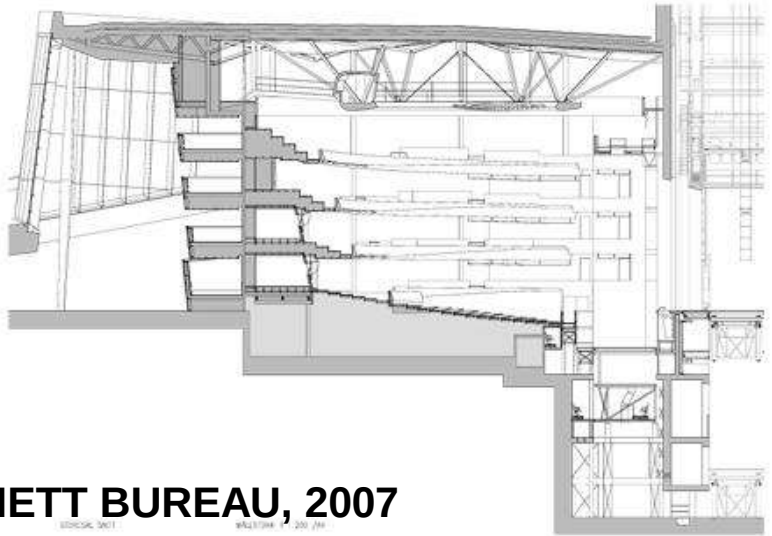
6

OPERA HOUSE IN COPENHAGEN, HENNIG LARSEN, INZH. REMBOLL

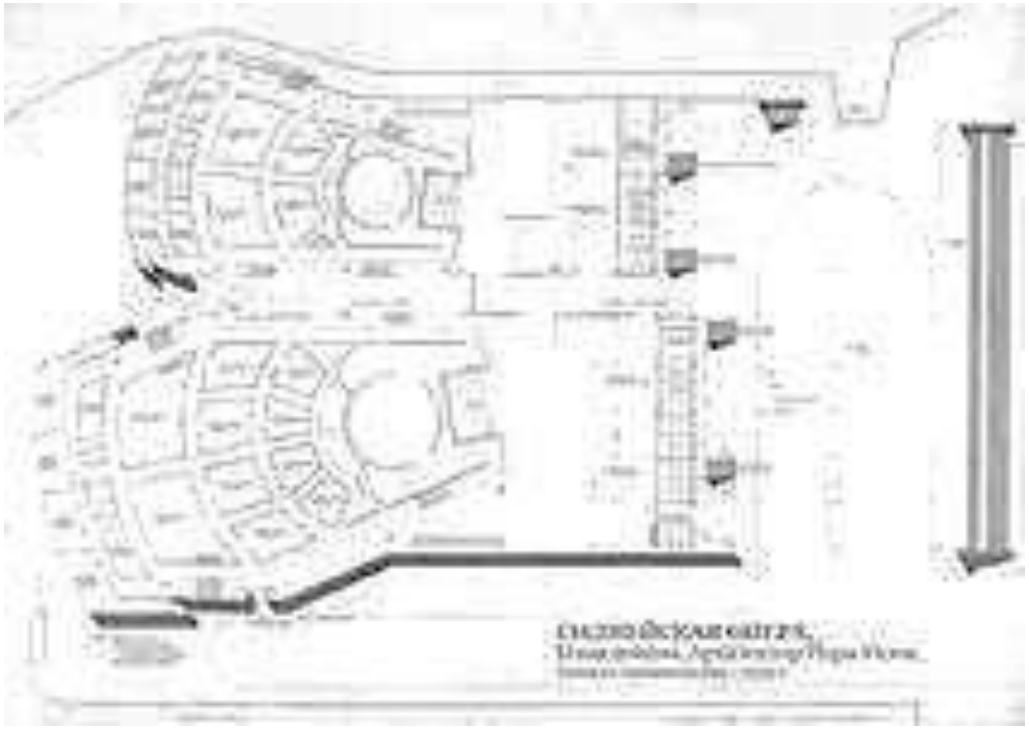


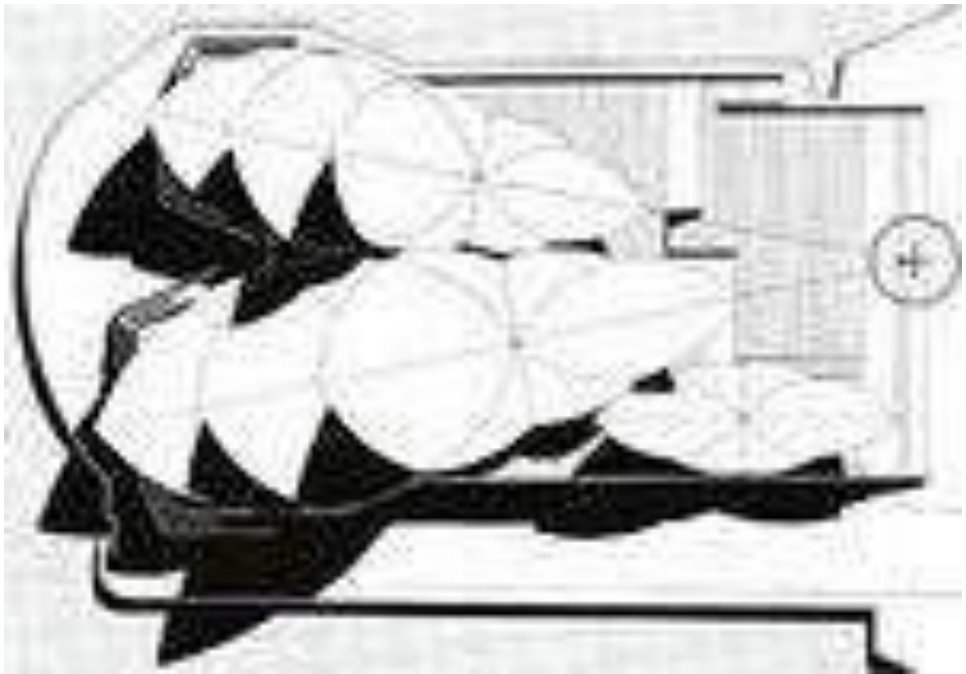


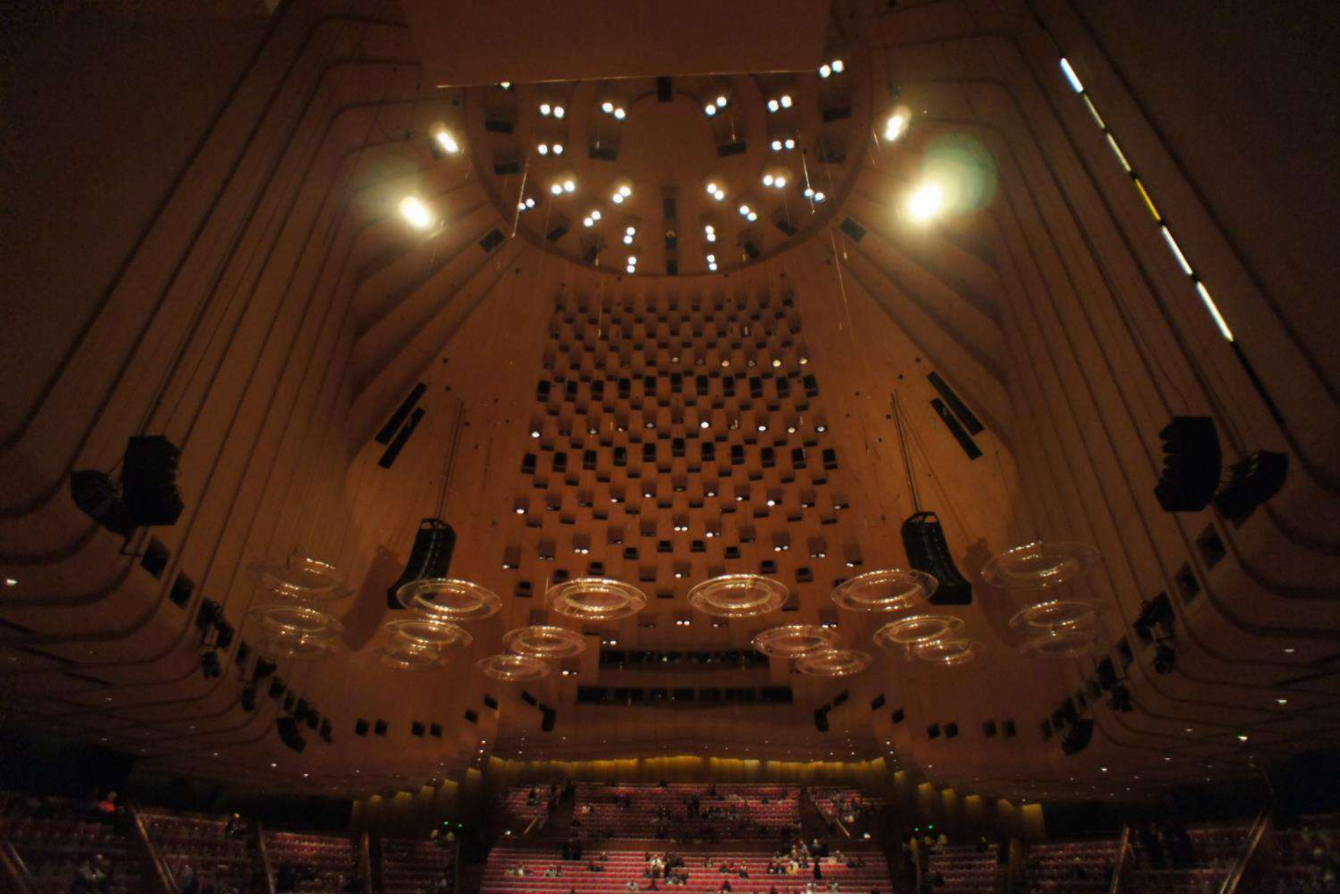


OPERA HOUSE IN OSLO, SNOHETT BUREAU, 2007

OPERA HOUSE IN SYDNEY, JORN UTTSON, 1957







JORN UTZON

CIRCUS BUILDINGS

The circus auditorium consists of an arena with a diameter of 13 m, an amphitheater, a dome, a stage, a room for an orchestra, lighting, boxes and bridges. In the center of the dome, exactly above the arena at a height of 20 m, a ring is arranged, in which a layer is mounted for suspension and fastening of gymnastic equipment. An amphitheater with rows of seats for spectators is around the arena solid ring. The slope of the amphitheater is determined by the conditions of the accessibility of the entire arena from each seat and is one of the most steep among the spectacular structures. Arena floor level and the level of the first row of the amphitheater are at the same level. The room for the orchestra is designed in the form of a stage above the main axial passage on the side opposite to the artistic aisle. Above the room for the orchestra is a lighting sky lodge. This is dictated by the orientation to the exit of the artists. The circular lighting bridge is used to place on it floodlights providing illumination of the arena and dome space.

The peculiarities of the technology of circus performances dictate a number of requirements for the location of production facilities. Room-animal shelters are designed with natural light and can only be located at the level of the arena floor mark.


ЦИРК
ЛЕГЕНДАРНЫЙ
ЦИРК ЗВЕРЕЙ ФИЛАТОВА

CLUB BUILDINGS

Premises of clubs are divided into entertainment and club parts.
The entertainment part of the clubs includes:

- multipurpose auditorium (at the rate of 0.65 m2 per one viewer) with a stage or stage and premises serving stage;
- foyer - at the rate of 0.4 m2 per viewer with halls for dancing and 0.6 m2 - without dance halls;
- performance ground;
- cinema room;
- warehouses of volumetric decorations;
- artistic rooms.

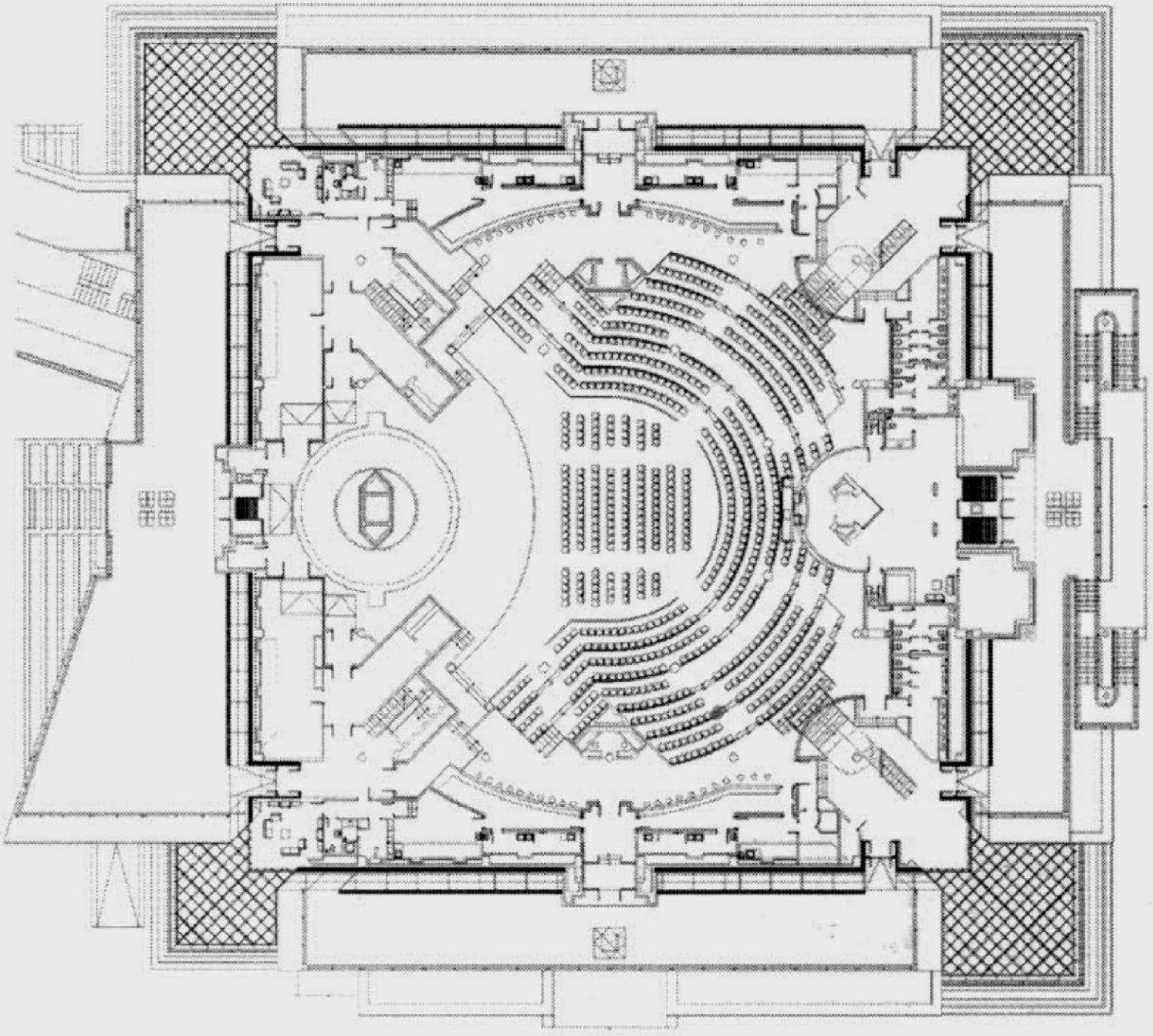
The main space-planning features of the visual halls of clubs:

- versatility, the possibility of transformation;
- the club hall with a small capacity should have a natural lighting for lectures and meetings (in the absence a special lecture hall within the premises of the club), with it should be easy to darken the hall;
- a club hall with a small capacity must have a horizontal floor and a mounted stage.

Club part of the club:

- lecture hall or auditorium;
- library;
- circle;
- living rooms;
- Cafe;
- gym;
- dance hall;
- recreation rooms.

CULTURAL AND ENTERTAINMENT CENTER "PYRAMID" IN KAZAN, TOKAREV'S ARCHITECTURAL WORKSHOP, 2002



AUDIENCE IN ROME, RENZO PIANO, 2002


Luglio suona bene

LECTURE 9.

HOTELS

There are several bases for the classification of hotel buildings.
By capacity:
- small capacity - up to 100 guests;
- average capacity - from 100 to 500 guests;
- large capacity - from 500 to 2000 guests.

In terms of number of floors in domestic design practice, there are various hotels like:
- low-rise - 1–2 floors;
- mid-rise - 3-5 floors;
- multi-storey - 6-10 floors;
- increased number of floors - 11-24 floors;
- high-rise - 25 and more floors, more than 75 m high.

By purpose (the main typological feature for hotel buildings):
- general type hotel;
- apartment hotel;
- conference hotel, congress hotel;
- tourist hotel;
- resort hotel;
- motel;
- camping;
- hostel;
- capsule hotel.

By the level of comfort categories of hotels,
adopted in Russia correspond to the number of stars according to international standards:

higher A *****
higher B ****
I ***
II **
III *
There are also six-star hotels - fully self-contained and self-sufficient.

There are two main approaches to determining the comfort level of a hotel. The first is based on static signs - a firmly established ratio of rooms of a certain type with a certain set of sanitary equipment, the functional composition of public premises (presence or absence of a pool, sauna, etc.). Another direction is focused not on the quality of the material base, but on dynamic factors, the quality of service.

Apartment hotel is a hotel created on the principle of flats. This is a complex of apartment-type rooms with the possibility of renting and a full range of hotel services.

Congress hotel, conference hotel, business hotel are special hotels for business people, designed for congress, conferences, summits, symposia, meetings. They are hotels with a developed block of representative premises:
conference rooms of various capacities, meeting rooms, universal spaces. Rooms include category rooms suite that fully meets all the requirements of the comfort of the high class for business people.

Tourist hotel is an enterprise, offering accommodation as well as opportunities and appropriate equipment for sports and entertainment, restaurants and shops.

The resort hotel is an accommodation facility located in natural environment and providing additional services on its own basis, having health improving character using natural factors (for example, sea or mineral water), including health procedures.

Motel is a hotel with a car park providing services
to accommodate motorists.

Camping is a limited area with sanitary facilities,
which houses chalets, bungalows, tents, caravans,
trailers, mobile caravans, as well as equipped platforms for placing tents, caravans, etc. There are restaurants, shops, sports and entertainment facilities in the campsite at guests' service. However, the above services are optional.

Hostel is an enterprise providing
accommodation and catering services. Accommodation in hostels usually located in multi-bed rooms. It is assumed
the presence of a kitchen for self-cooking,
fishing, laundry, leisure facilities.

Capsule hotels include rooms, or capsules, for short
long-term good rest, usually from several hours up to 2-3 days. Capsule is living space 2.0 m long, 1.0 m wide and a height of 1.25 m, designed for one person. On every floor sanitary blocks and showers are provided.


BRASSERIE
BAR
BRASSERIE
BAR
Lemonidis


MARINA AMBASSADOR TOWER

501


HOTEL


Hotel Shnelli
wagwan.ee
JILLIONAIRE
09.08
Tallinna Lauluväljak


CAPSULE HOTEL
aerosleep
CAPSULE
HOTEL

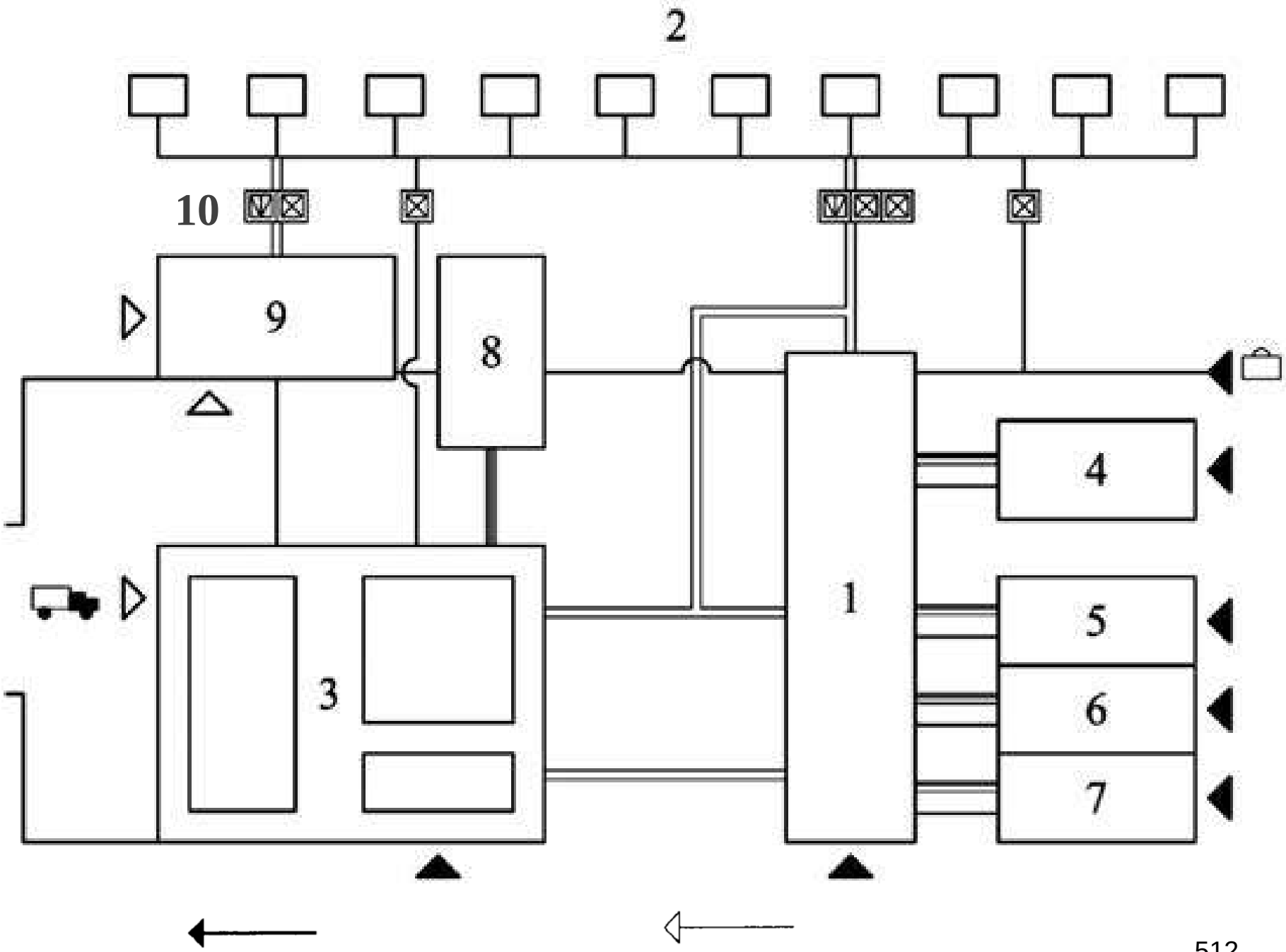
URBAN CONSTRUCTION SOLUTION

The hotel site should include:

- landscaped areas in front of the entrances to the premises for social and residential purposes (at the rate of at least 0.2 m2 per guest);
- parking areas;
- areas for temporary parking of cars and buses;
- internal through passages, entrances to the main and other hotel entrances, entrances to underground garages or parking lots (7.0 m wide in two-way traffic);
- a utility area, isolated from the guests' area, with a passage house for freight transport with a width of at least 4.5 m and with a company platform at least 12.0 × 12.0 m in size, with entrances vehicles to unloading platforms and landing stages.

The need for placement on the site of sports and children grounds, as well as winter gardens, green spaces and other recreation and leisure areas is determined by the design task.

Car parks at hotels are designed from a couple of 10–15 cars per 100 places for hotels of the highest category, 6–8 cars per 100 places for other hotels. The number of parking spaces should be taken at the levels of motorization determined for the estimated period.


2
10
9
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guest path
employee path

Hotel functional zoning scheme:

1 - reception and lobby group of premises;

2 - residential group of premises;

3 - group of catering rooms;

4 - a group of premises for trade and consumer services;

5 - a group of premises for sports and recreation purposes;

6 - a group of cultural and leisure facilities;

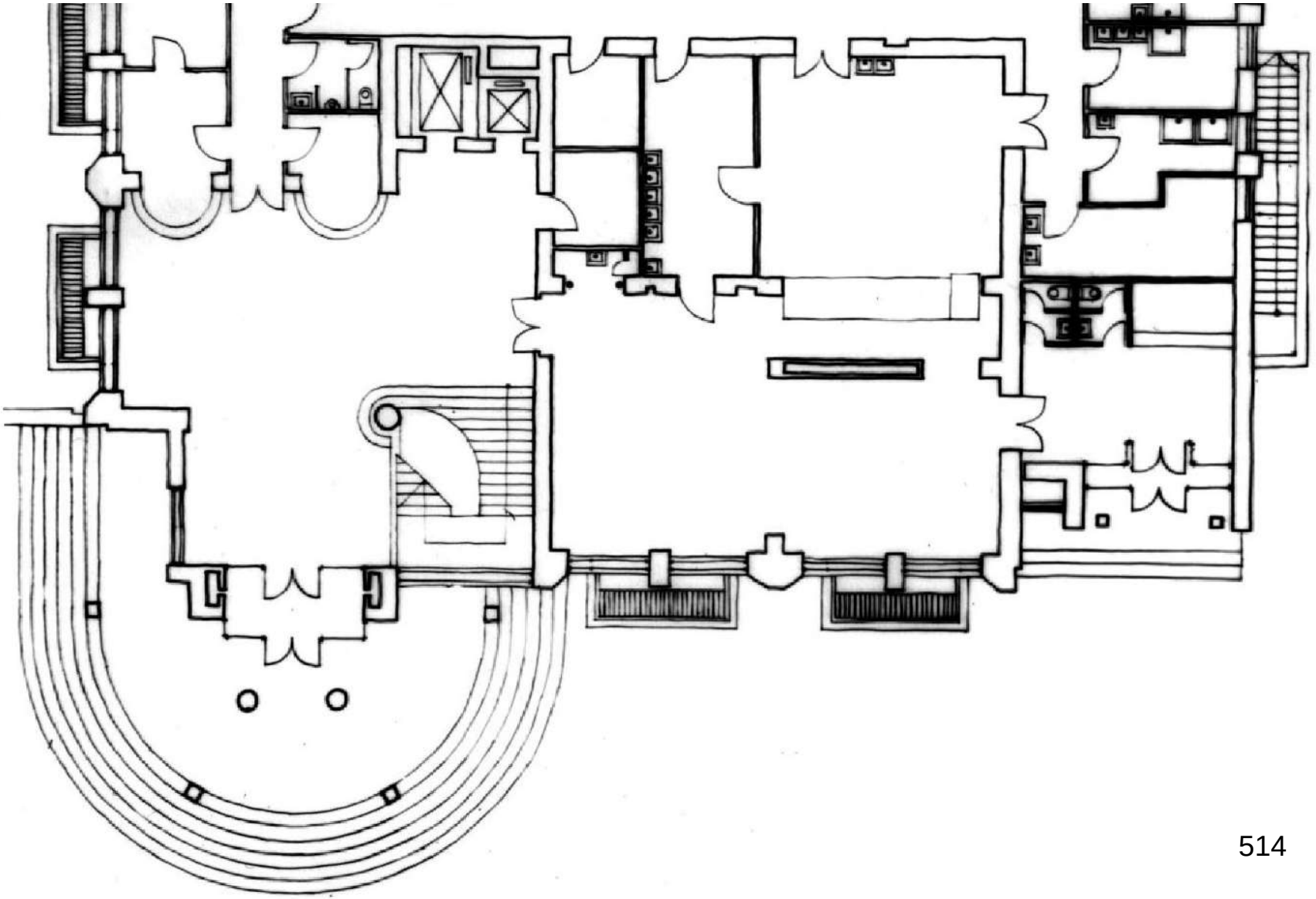
7 - a group of premises for business activities and meetings;

8 - a group of premises for administration and maintenance services;

9 - a group of utility rooms

10 - a group of premises for public facilities and vertical transport

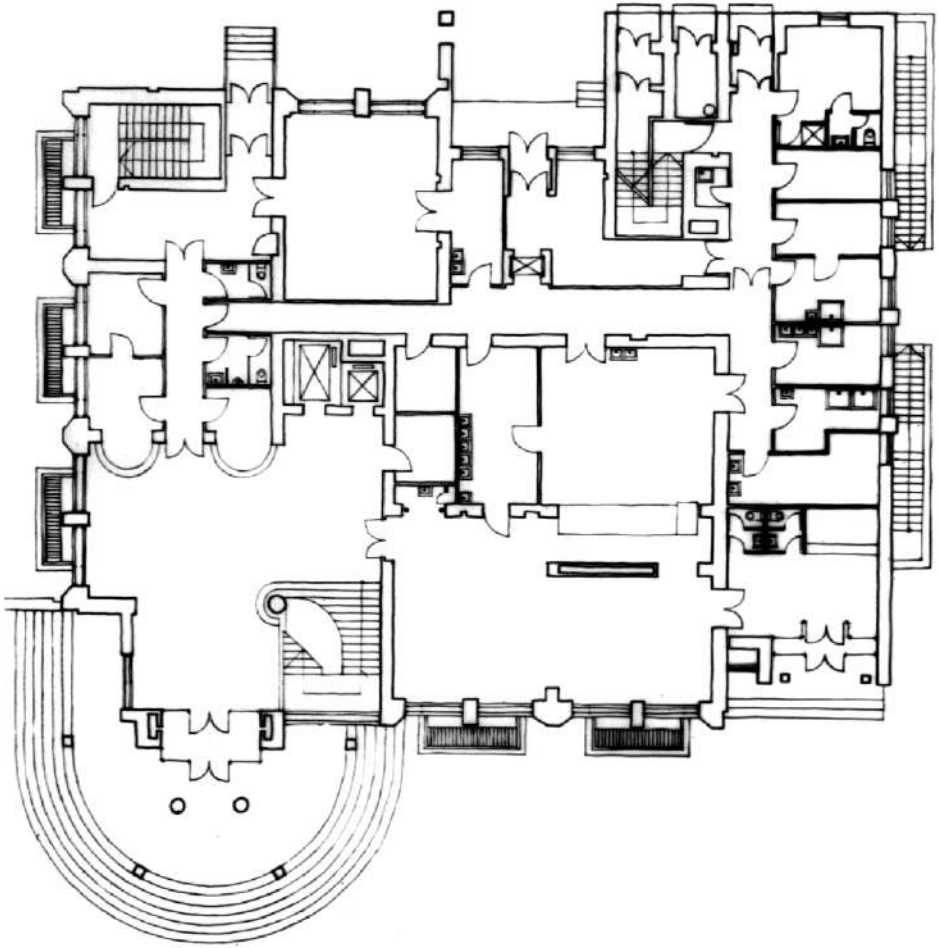
1 RECEPTION AND LOBBY GROUP OF ROOMS

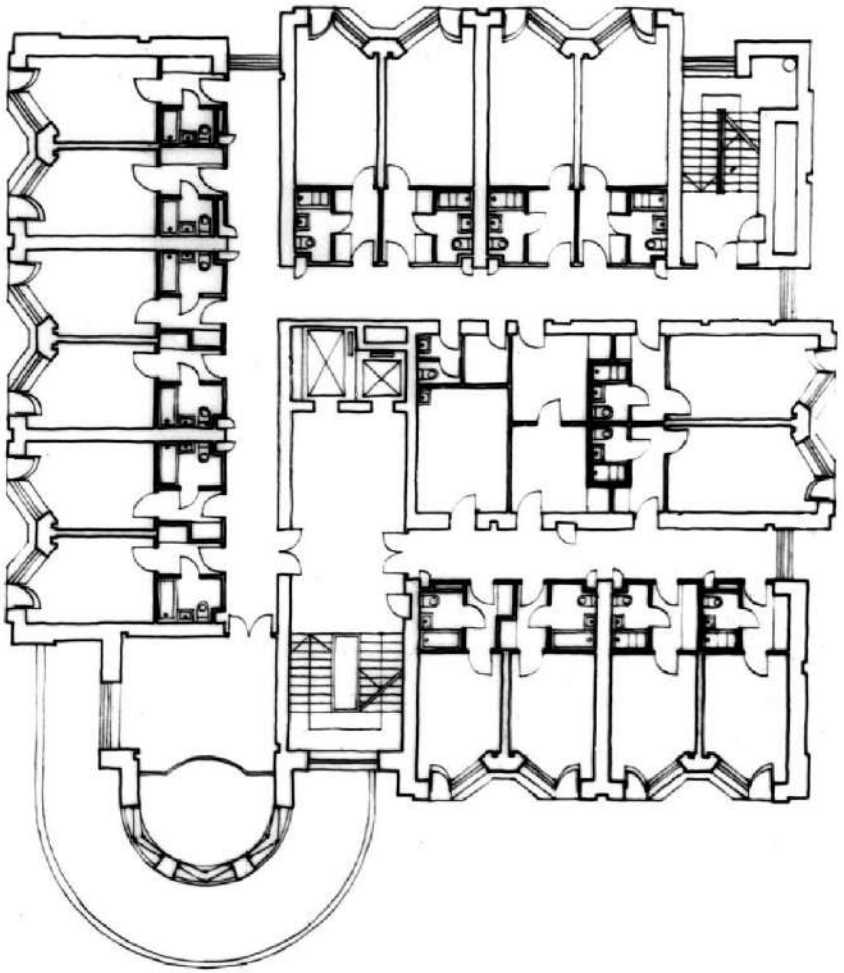


The reception and lobby group includes:

- a lobby with a reception service and seating areas;
- rooms for the receptionist and administrator;
- storage room for documents;
- cloak rooms;
- storage room;
- room for unloading and sorting baggage;
- a recreation room for the personnel on duty;
- a bank branch with a currency exchange office;
- post office, ATMs;
- bar counter;
- kiosks for various purposes;
- the shops.

2 RESIDENTIAL ROOMS (HOTEL ROOMS)





The residential group of premises includes hotel rooms and facility rooms.

Hotel room areas general type, depending on the category of the hotel, m2

Number of rooms/places	the highest A	the highest B	I	II	III
1 / 1	14	12 – 14	12 – 14	12	10
1 / 2	18	14 – 18	14 – 18	14	14
2 / 2	24	24	24	24	-
3 / 2	40	40	40	-	-
1 / 3 (family)	-	20 – 24	20 – 24	18	18

Depending on the level of comfort (category) of the hotel, different types of rooms are used: rooms can be designed for one or two people, for three people - a family room for parents with a child; one-, two- and three-room suites are designed.

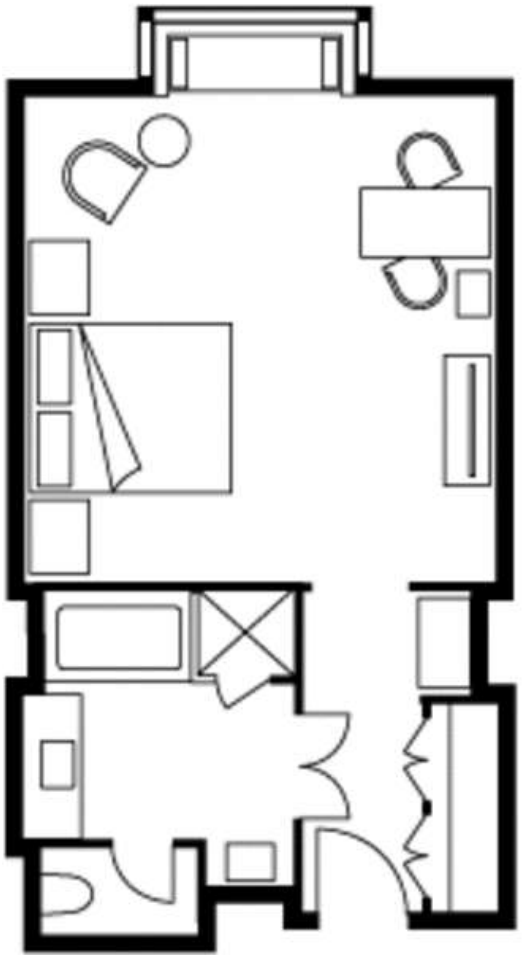
Suite is a room of increased comfort for hotels of the highest and I categories, as well as conference, congress and business hotels, consisting of several adjoining separate residential rooms with a sleeping place (places) and a separate room (rooms) for rest and (or) work. These are rooms, usually consisting of three or more residential rooms: living room, dining room, study and bedroom. This room provides two toilets: a guest sanitary block in the front (toilet, washbasin) and a sanitary block in the bedroom with a full set of equipment (bath / shower, washbasin, toilet, bidet).

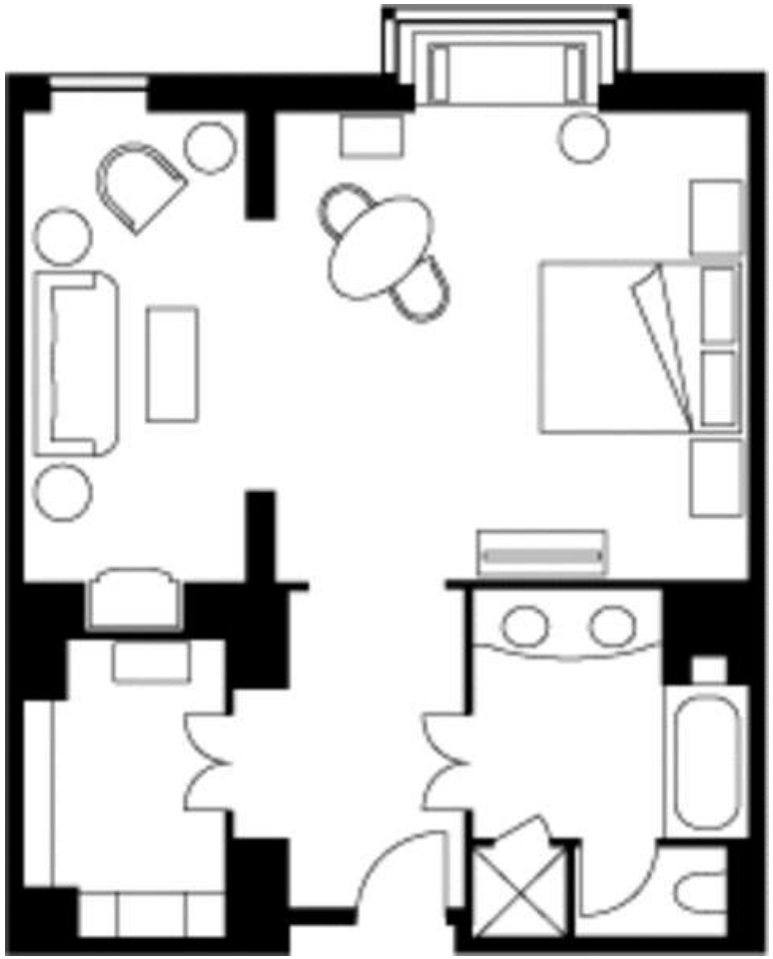
Apartment is a room consisting of several living rooms with sleeping place (s) and a separate room for rest with a kitchenette. This category includes rooms consisting of from two or more residential rooms (living / dining room and bedroom), having kitchen equipment.

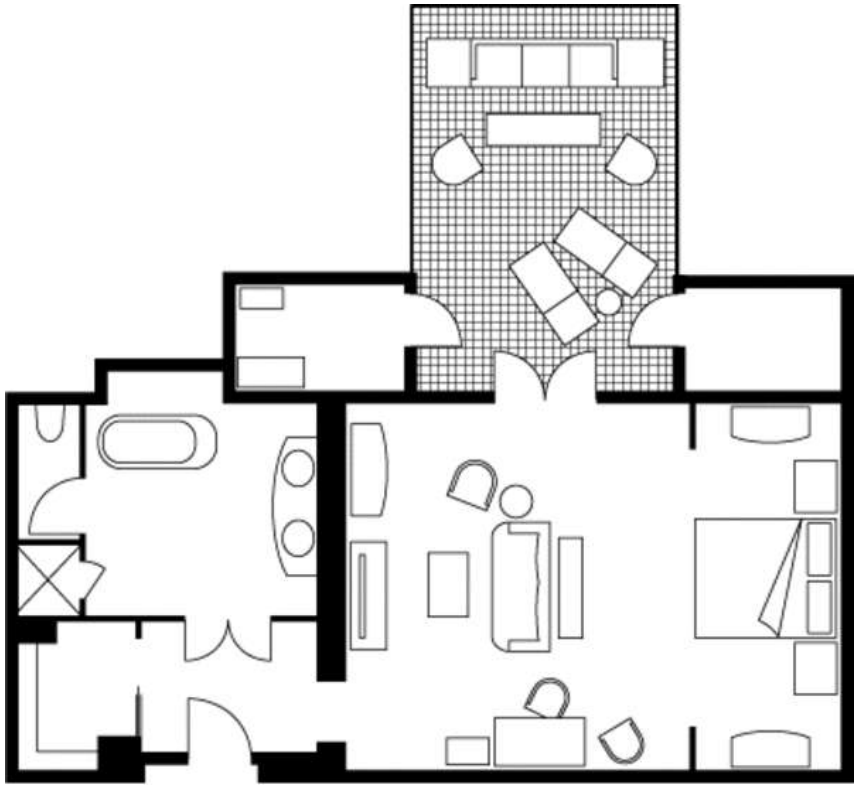
Studio is a room consisting of one room with a kitchenette.

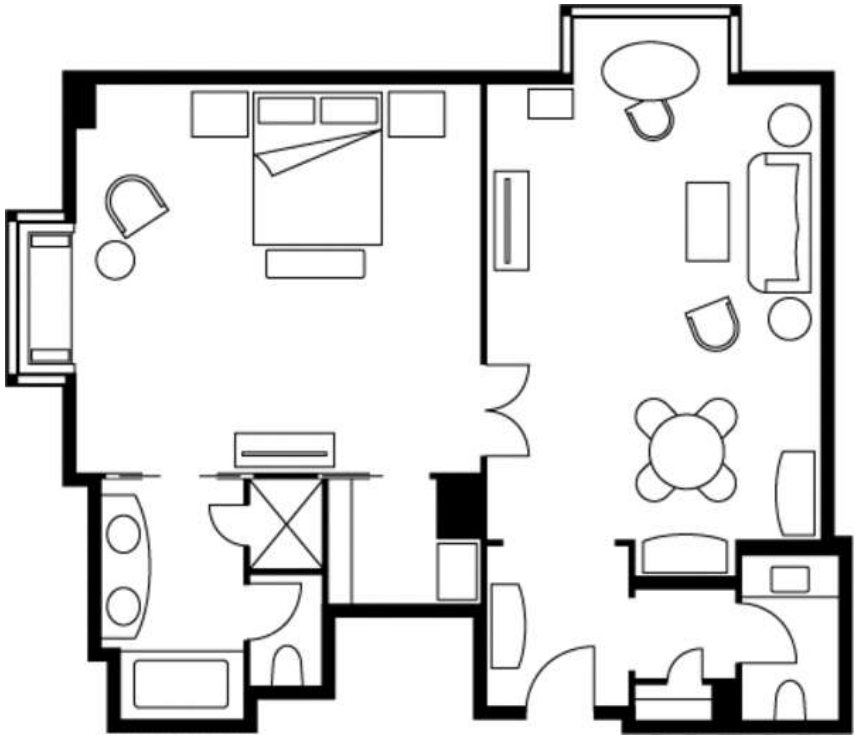
It is possible to provide numbers connecting internal doors with each other. This allows for more flexible guest size.
One residential room of a hotel consists of a sleeping area, hall width of at least 1.4 m with a built-in wardrobe, sanitary facilities and summer premises - balconies, loggias, verandas.
In a two-room suite, in addition to the bedroom, a living room is designed. There is a living room and an office in a three-room suite; while the entrance from the front is carried out into the living room.
Two-room and three-room apartments mean for two people in hotels of the highest and first categories. Two sanitary units are designed: a toilet with a washbasin at the entrance and a combined sanitary unit with a full set of equipment (bath, washbasin, toilet, bidet) in the bedroom.
Facility rooms: linen storage, rooms for personnel on duty, ironing rooms, floor-by-floor halls.

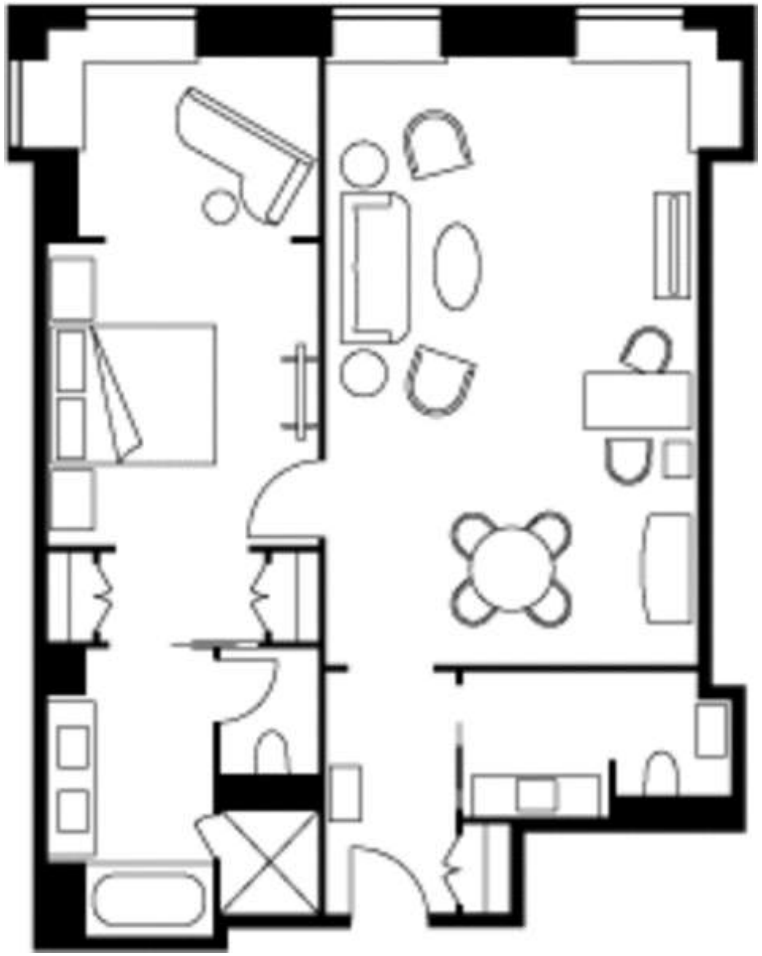
TYPES OF HOTEL ROOMS

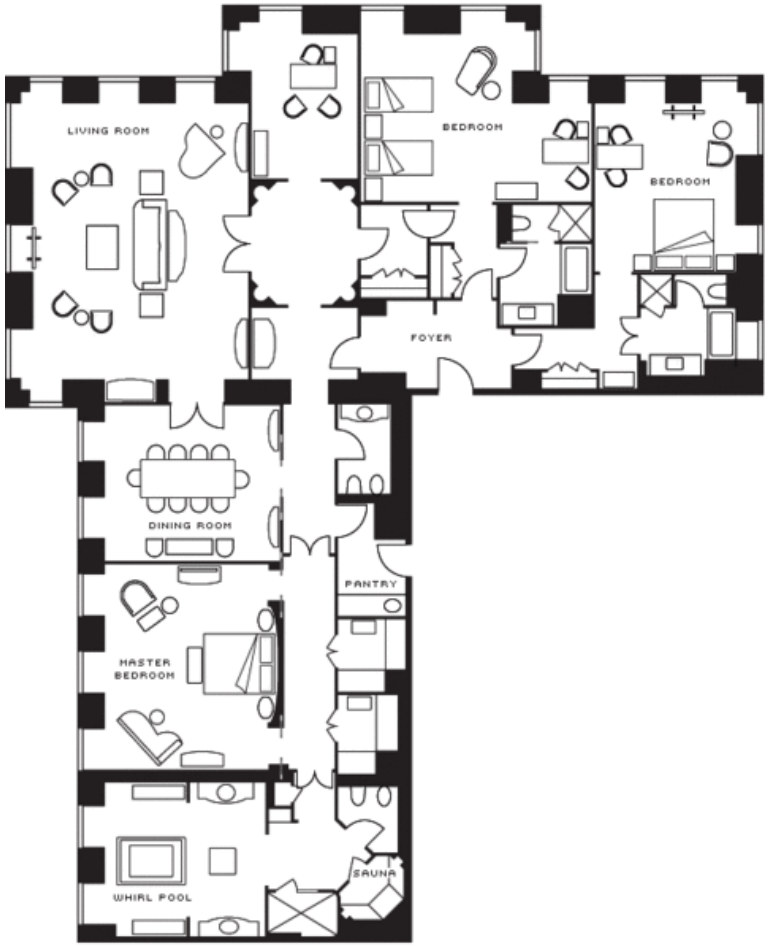


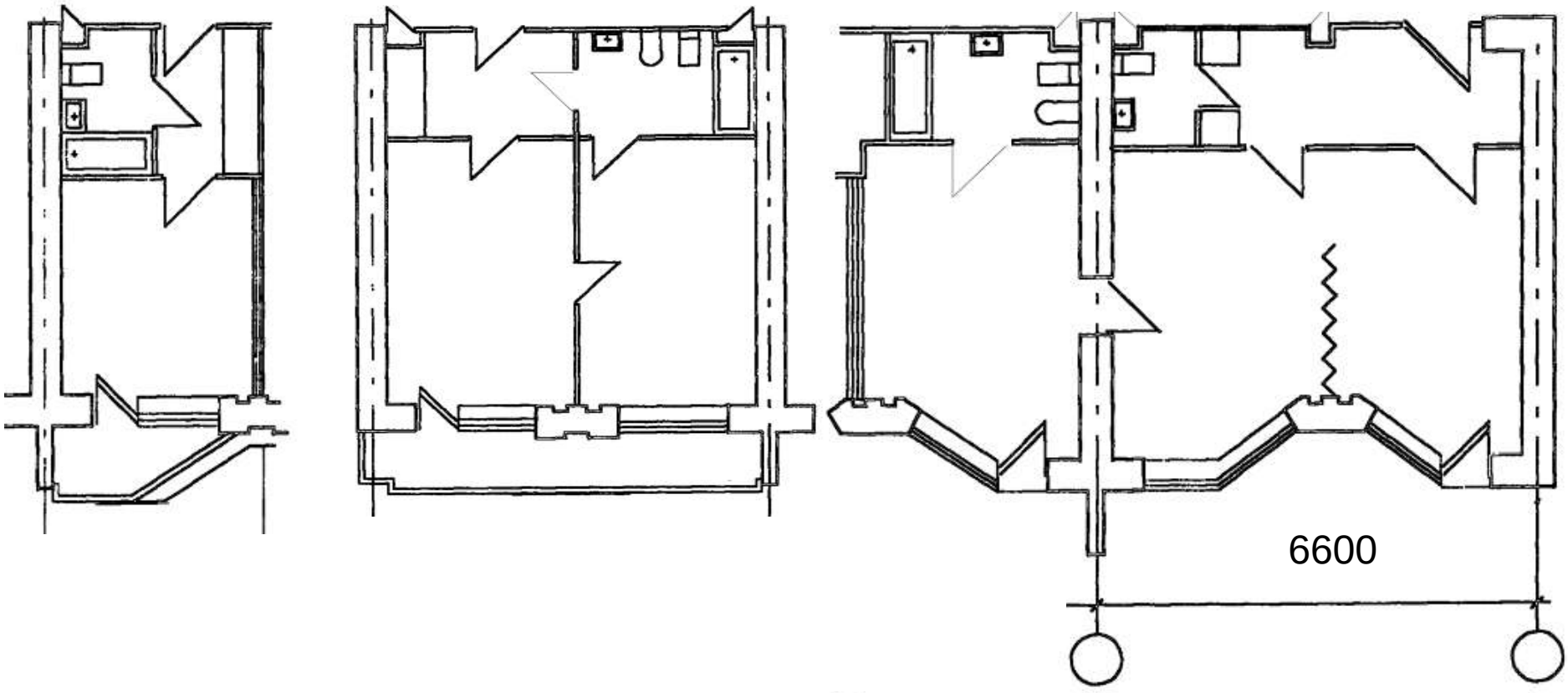









LIVING ROOM
BEDROOM
BEDROOM
FOYER
DINING ROOM
PANTRY
MASTER BEDROOM
SAUNA
WHIRL POOL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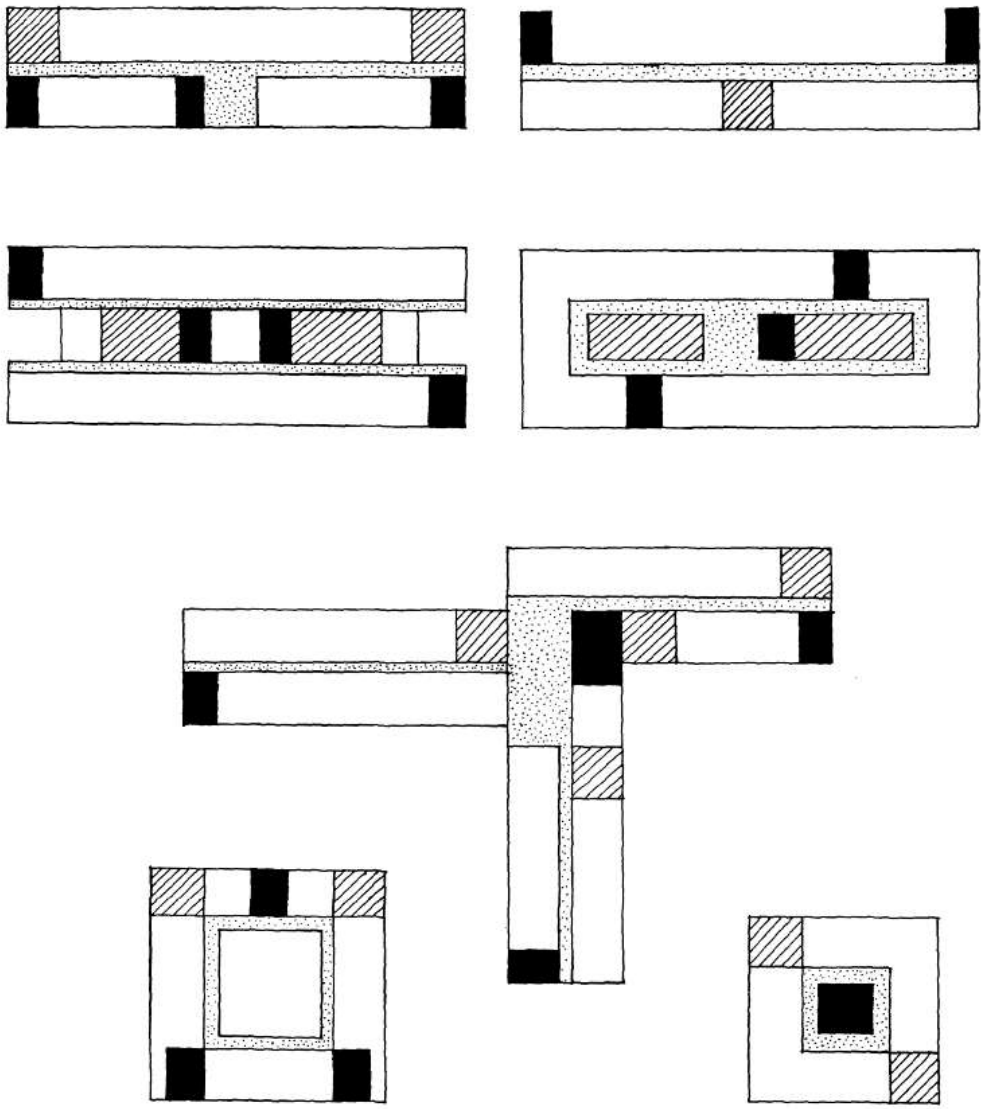
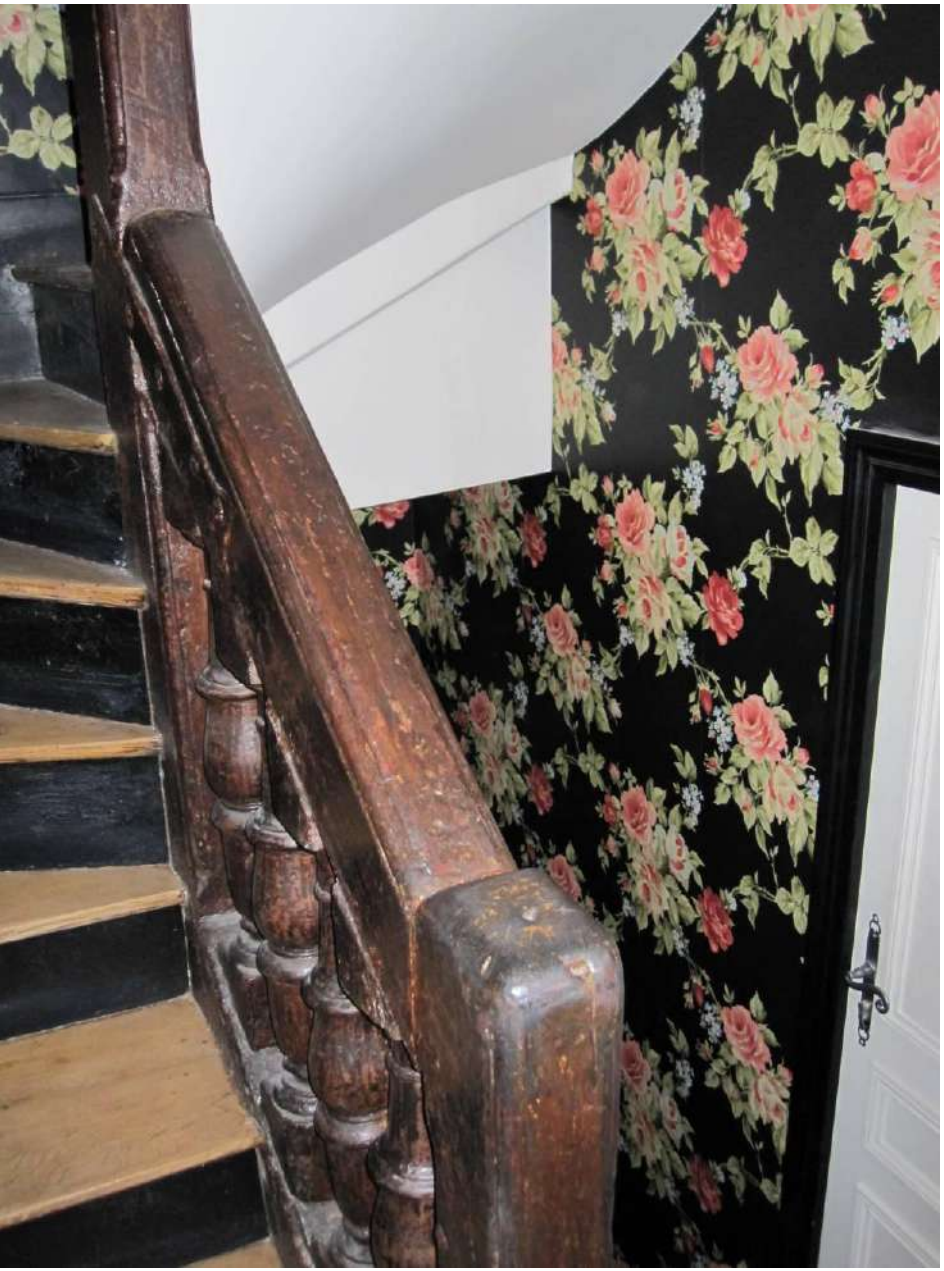


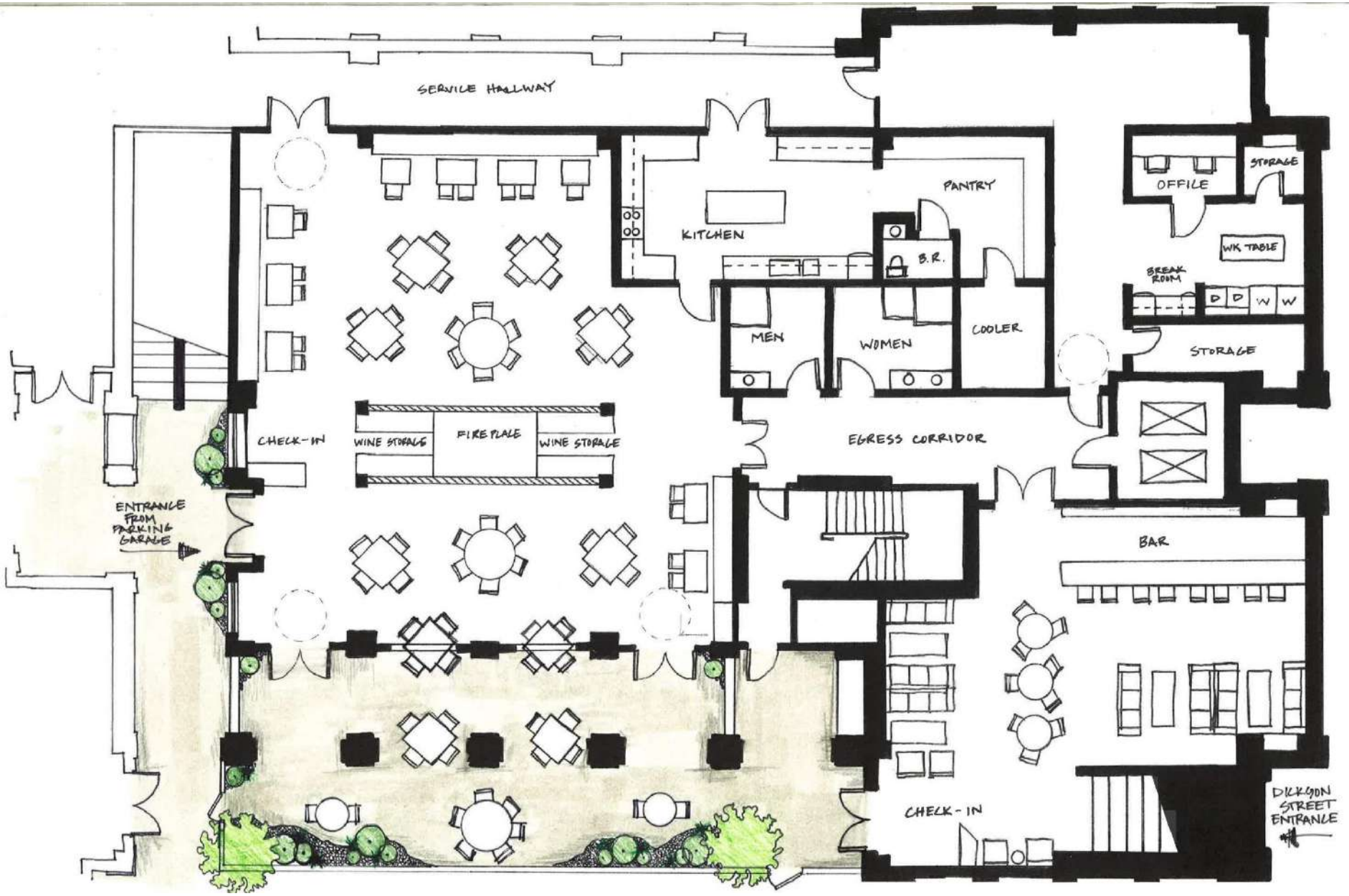
Planning solution for the residential part of the hotel



3 FOOD ROOM GROUP

The group of catering facilities includes:

- a restaurant;
- European cuisine restaurant - for hotels of the highest category;
- restaurant of national cuisine - for hotels of the highest category;
- Cafe;
- express cafe, cafeteria;
- buffet on the floor;
- breakfast room, buffet.


SERVICE HALLWAY
KITCHEN
PANTRY
B.R.
OFFICE
STORAGE
WK TABLE
BREAK ROOM
D D W W
MEN
WOMEN
COOLER
STORAGE
CHECK-IN
WINE STORAGE
FIREPLACE
WINE STORAGE
EGRESS CORRIDOR
ENTRANCE FROM PARKING GARAGE
BAR
CHECK-IN
DICKSON STREET ENTRANCE

4 GROUP OF COMMERCIAL AND HOUSEHOLD SERVICES

The group of retail and consumer services premises includes the following retail premises: shops or kiosks selling newspapers and magazines, souvenirs, perfumes, flowers, pharmaceuticals, confectionery.

The premises for consumer services include:
- hairdressing salons;
- a room for the repair of sports equipment;
- ironing room on each floor;
- shoe repair workshop;
- rental points;
- first-aid post.

5 GROUP OF SPACES FOR SPORT AND RECREATION PURPOSE

Group of premises for sports and recreation purposes:

- methodical office;
- instructor's room;
- office for medical personnel;
- offices for rental and storage of sports equipment;
- rehabilitation centers;
- simulator room;
- gym;
- room for relaxation;
- swimming pool.

6 GROUP OF CULTURAL AND LEISURE PREMISES

Group of cultural and leisure facilities:

- cinema hall;
- working rooms at the hall;
- a library with a reading room;
- lobby with cloak room, toilet, cash desk;
- billiard room;
- video salons;
- living rooms, lounges for relaxation;
- dressing rooms.


HISS

7 GROUP OF BUSINESS AND MEETING ROOMS

Group of premises for business activities and meetings:

- business center;
- representative offices of firms;
- business meeting rooms;
- meeting rooms;
- exhibition and showrooms;
- premises for communication, translating, work on computers

ROOMS FOR BANQUETS AND CONFERENCES OF THE "AZIMUT" HOTEL CHAIN

	m^2							
Assembly	90	100	-	-	80	50	50	

8 GROUP OF ADMINISTRATION AND OPERATING SERVICES

Group of premises for administration and maintenance services:

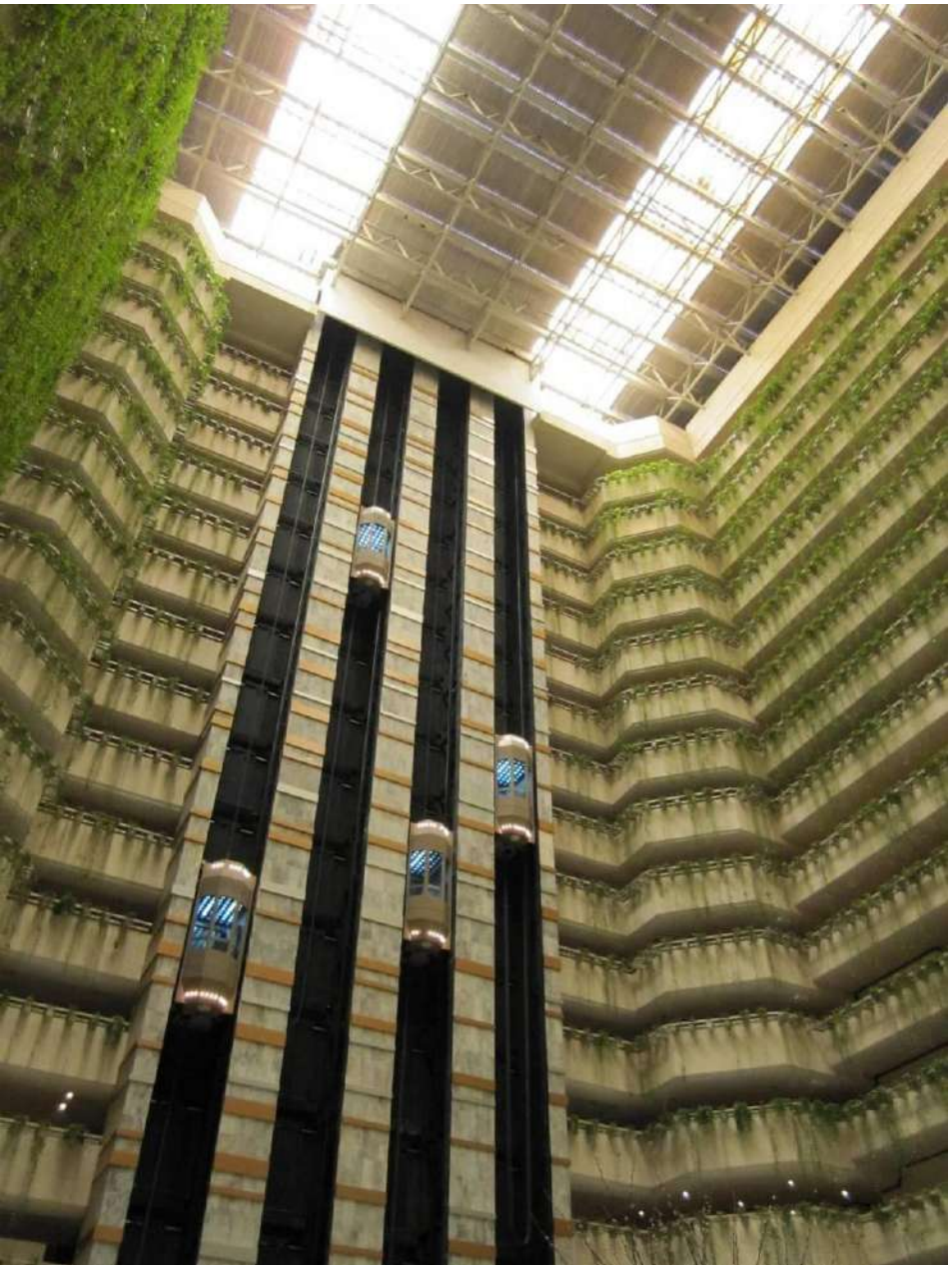
- reception;
- offices of the director, deputy director, lawyer;
- accounting department with cash desk and chief accountant's office;
- archive;
- Human Resources Department;
- a room for computer technology.

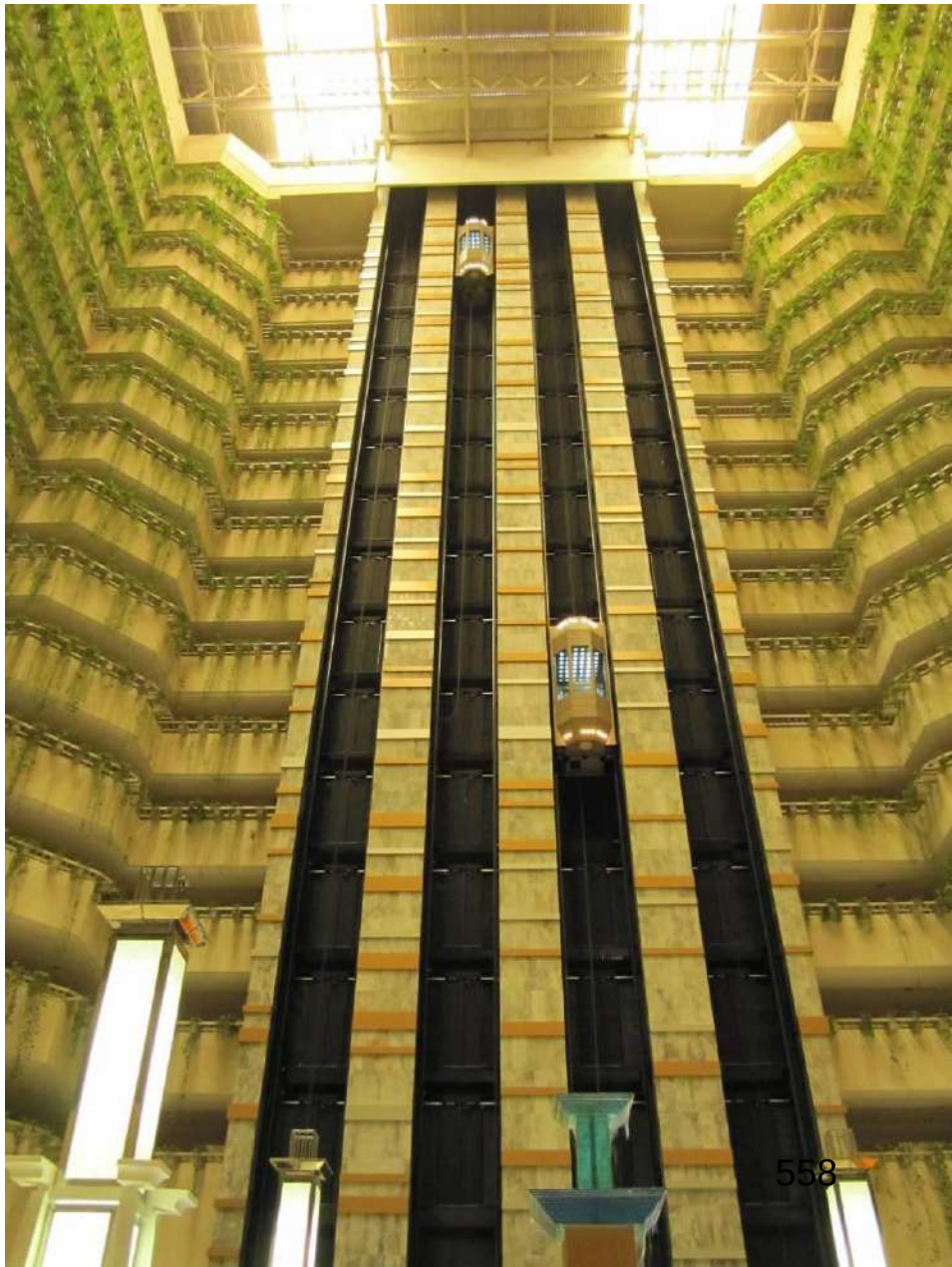
9 GROUP OF AUXILIARY AND SERVICE SPACES

Group of utility rooms:

- communication center;
- room of the senior maid;
- central linen;
- warehouses;
- workshops

10 GROUP OF PREMISES FOR UTILITIES AND VERTICAL TRANSPORT

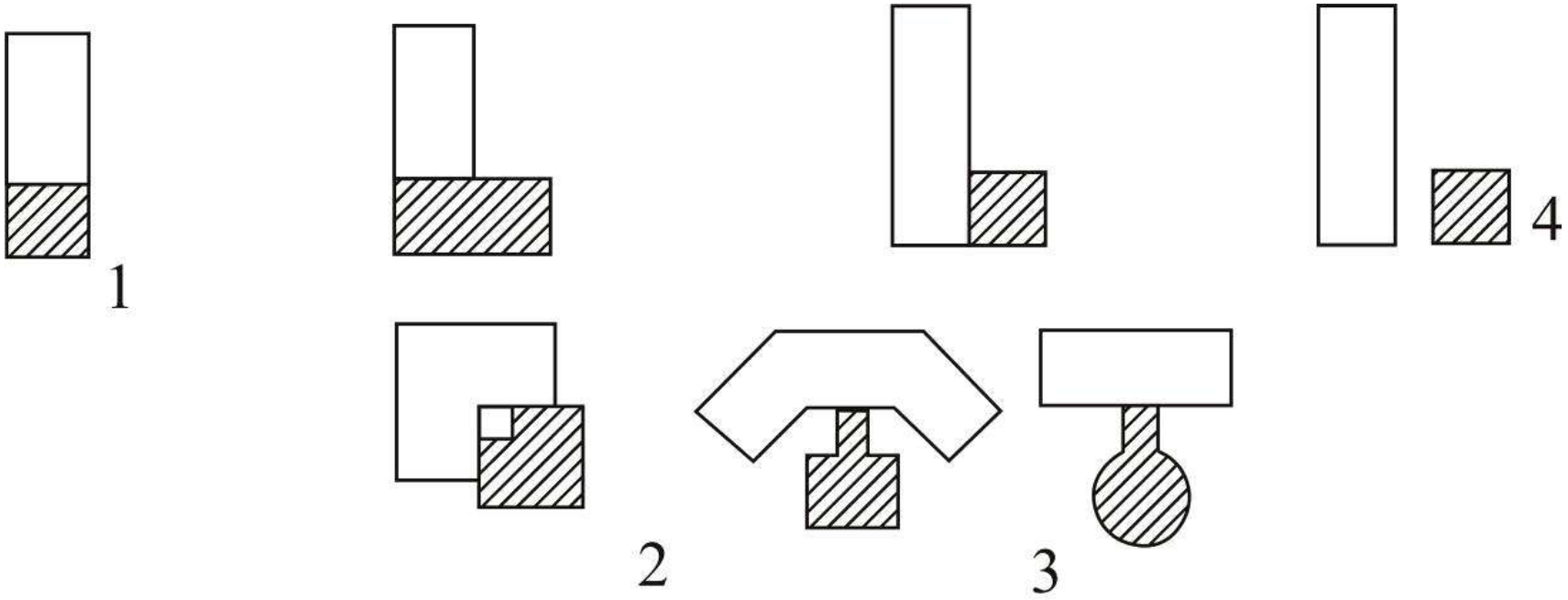




Group of premises for communal (engineering) purpose and vertical transport:

- boiler room or heating point;
- rooms for air conditioning systems;
- ventilation chambers;
- water unit or pumping station;
- boiler room;
- elevators;
- machine rooms of elevators

Possible options for the location of residential and non-residential premises of the hotel:
1 - built-in; 2 - built-in and attached; 3 - attached;
4 - pavilion



LIVING SPACES

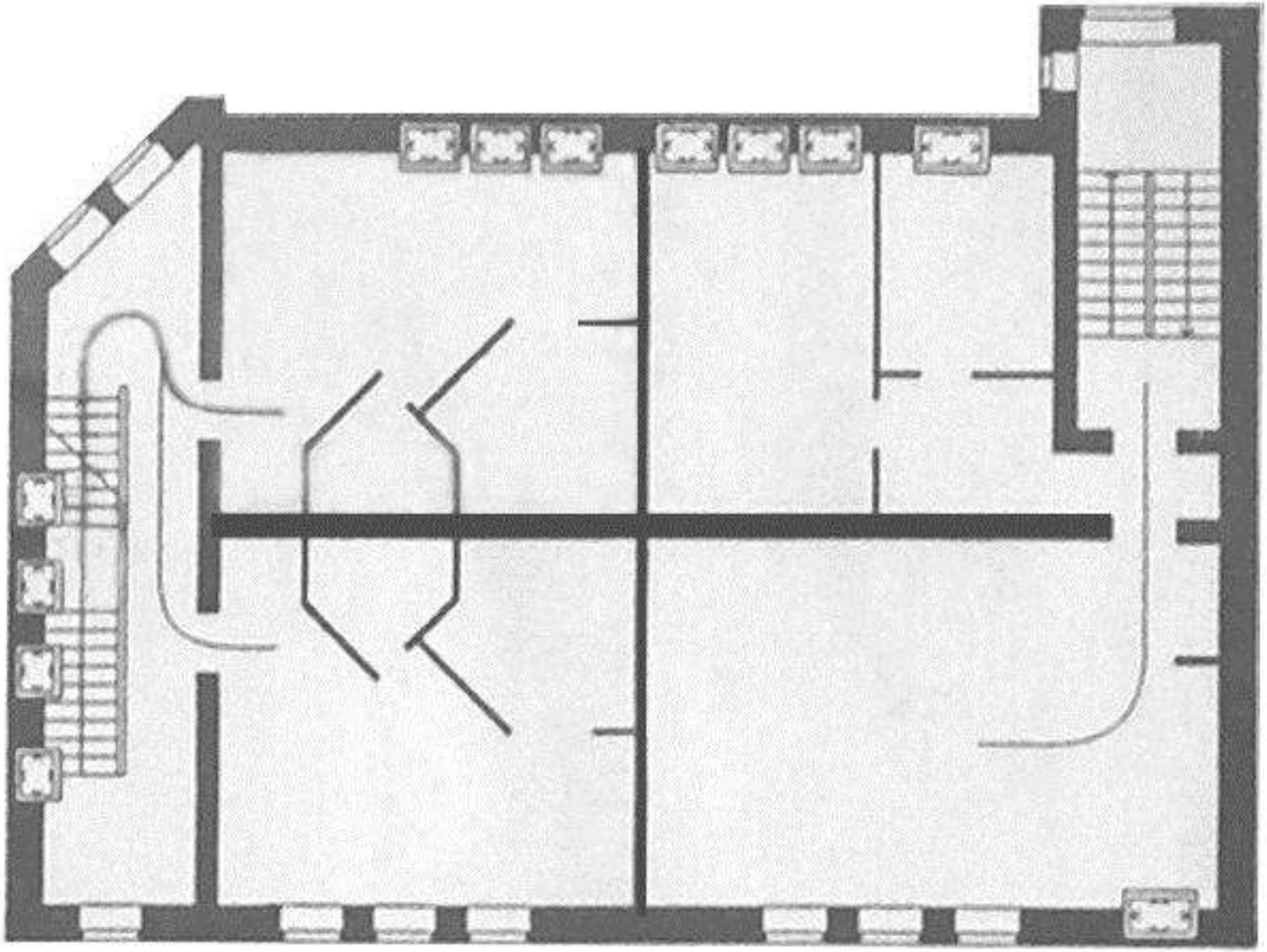
NON-RESIDENTIAL PREMISES

HOTELS IN ADAPTABLE BUILDINGS

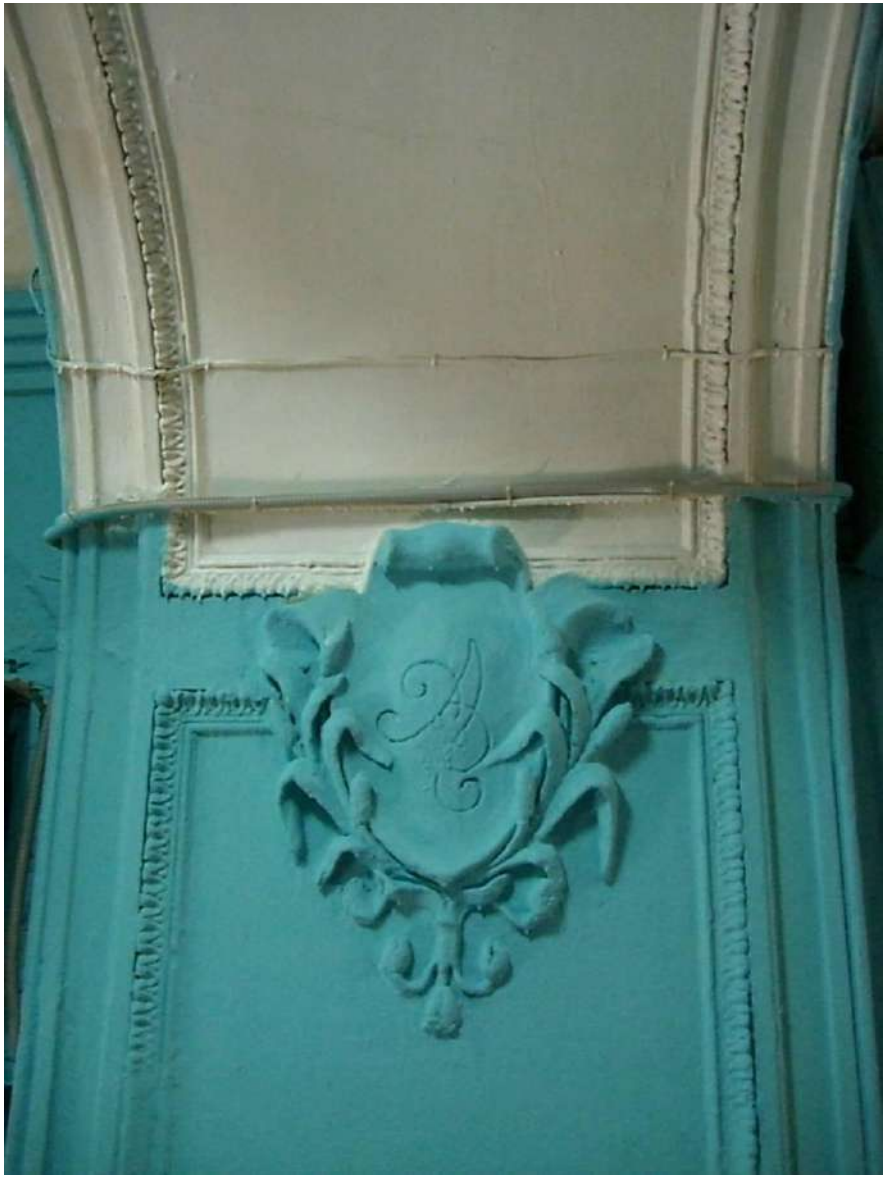
561

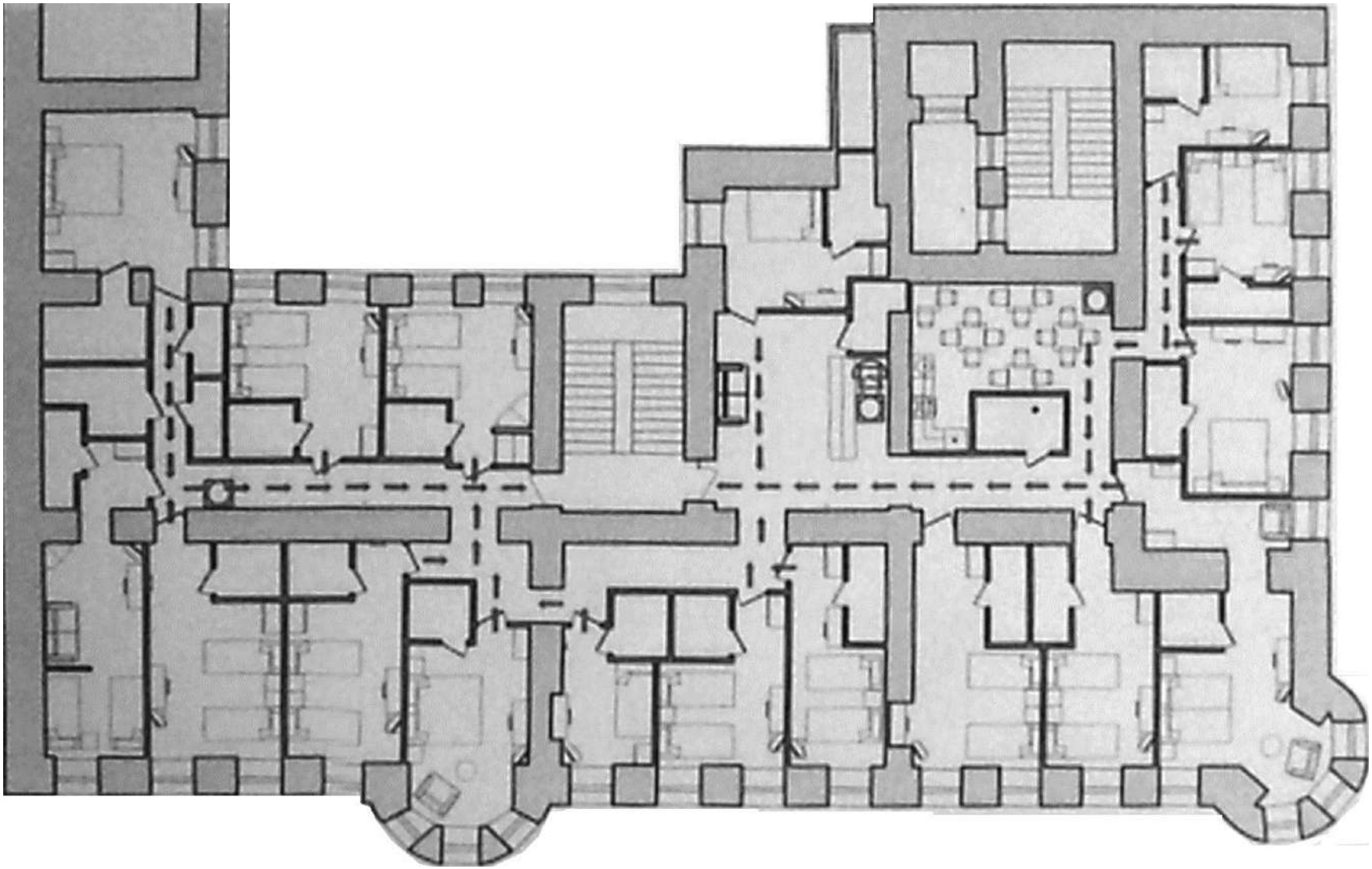
HOUSE KOSHELEVA - HOTEL "EUROPE" IN SAMARA


КАФЕ

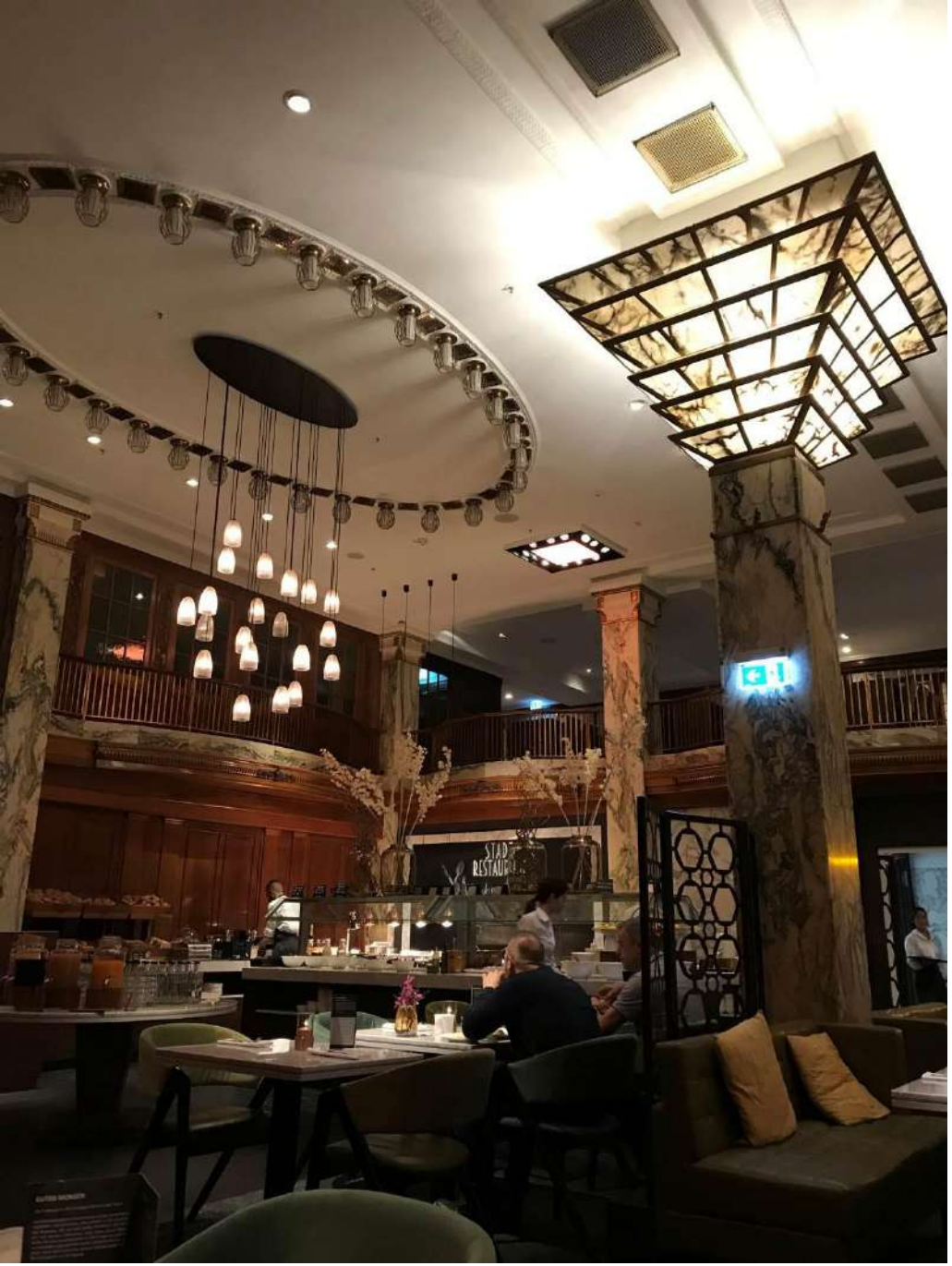


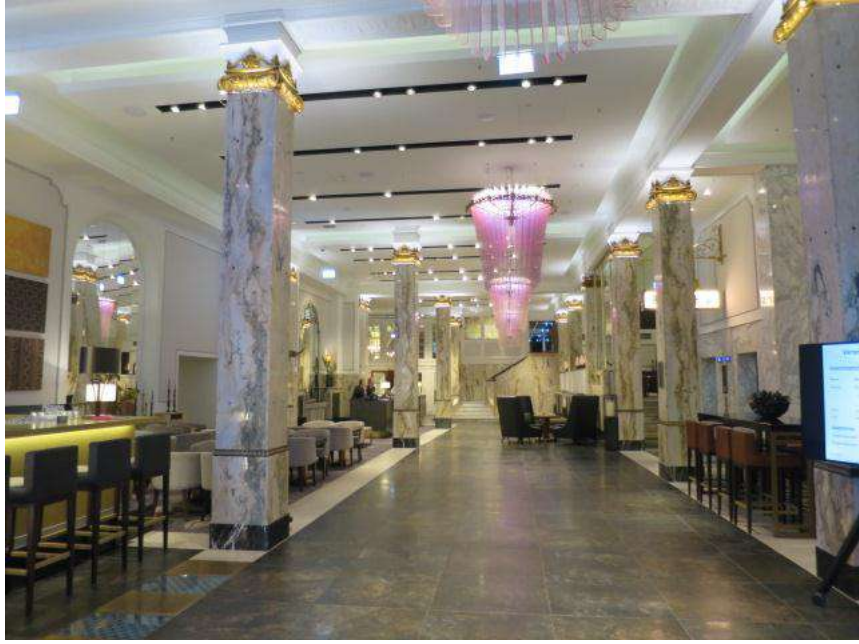
PROFIT HOUSE - HOTEL "RINALDI-OLYMPIA" IN SAINT-PETERSBURG

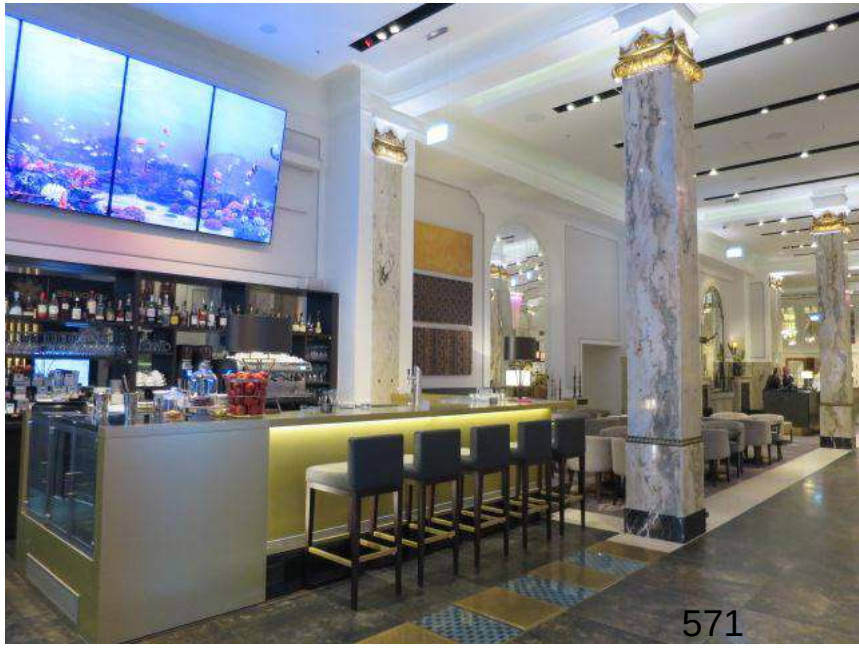





HOTEL REICHSHOF
CONTINENTAL
KARATREN





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LECTURE 10.

BANK BUILDINGS

HISTORICAL BACKGROUND OF BANK BUILDINGS


УДАРСТВЕННЫЙ БАНКЪ


ÖSTERR. POSTSPARKASSE:
WAGNERWERK
PARISER ESPRIT UND WIENER MODERNE: Die Firma Portois & Fix


SPARKASSE AACHEN

Banks arose in old times as a result of monetary and commodity relations. The bank acts as intermediary in payments, performs the functions of exchanging money already in feudal world.

Typologically the bank was a money-changer's shop (Italian banco - bench) at this time.

In Babylon and Greece, corporations of priests were engaged in banking operations, a safe place for keeping money, a bank, was a temple. So, it is known that savings and loan functions were performed by the Temple of Apollo at Delphi, the Temple of Artemis at Ephesus, Athenian temples.

Ancient banking disappears with the collapse of the Roman Empire, where it flourished.

In the Middle Ages, banking reappears, and now there is not only a private bank, but also a bank under the jurisdiction and control of the city authorities - Zerobank as a public legal enterprise.

The bank building is now an office and meets the typological requirements for an administrative building. It was during this period that a bank in the modern sense of the word begins to take shape as an institution that accumulates money savings, provides a loan, carries out monetary settlements, accounts of bills, emission of money and securities, operations with gold, foreign currency and other functions.

There is a need for a bank building as a new type of public building.
The historical development of the Russian banking system followed a slightly different path.
Before the abolition of serfdom in Russia, there were exclusively state, state-owned banks. But by the end of the 19th and the beginning of the 20th centuries, capitalism had created a highly developed banking system in Russia, in which joint-stock commercial banks occupied a leading position. In Russia, increased attention was paid to the construction of civil buildings from the middle of the 18th century - the appearance and formation of bank buildings belong to this period.
As a separate type of public building, the bank building was formed
was developed by the end of the 19th century. By this period, the main functional blocks of the bank building were also determined:

- operating unit;
- settlement and cash department;
- block for storing valuables;
- security unit;
- block of office premises.

And the main typological feature of the bank building was determined: its two-sided essence - open and closed.

Each of the functional blocks has evolved and improved
depending on specific historical and economic
features. The XX century is characterized by the following main stages of banking construction:

- after the First World War, the need for building increased
banks in Western Europe;
- in the 1930s, after the economic crisis, the
the need for bank buildings in the United States and Canada;
- after the Second World War, there was a need for building
banks in the countries of people's democracies;
- in the 1960s, the collapse of the colonial system influenced the
the need for bank buildings in Western Europe;
- the late 1980s - 1990s in Russia were marked by increased
the need for bank buildings of various types in response to
social changes in the country's economy.

CLASSIFICATION OF BANK BUILDINGS

The classification of bank buildings is determined primarily by

the type of bank and its place in the city structure. Banks are classified into different types.

1. By function and nature of operations performed:
 - central (emission);
 - commercial;
 - savings;
 - special purpose.
2. By the form of ownership:
 - state;
 - joint stock;
 - unincorporated;
 - cooperative.
3. By management level:
 - local;
 - urban;
 - regional.

4. By the number of employees and the number of operating places:

- small;
- medium;
- large;
- the largest.

Depending on the place in the structure of the city, banks may have the following

blowing types:

- in the city center - the territorial department of the bank (headquarters

apartment);

- in the planning area - bank branch - banking

agency;

- in a microdistrict, rural settlement - a bank branch.

LAND PLOTS OF BANK BUILDINGS

The area of the land plot for the bank building is accepted at the rate of 0.4–0.6 hectares, depending on the number of employees. On the site, it is necessary to provide for two functional zones:

- open - for clients and bank employees;

- closed, guarded area with limited access for the entry and exit of cash-in-transit vehicles with fencing along the perimeter

The functional zoning of the land plot is recommended to be taken according to the table:

Parcel Areas	Share of plot area, %		
	corner section	ordinary section	island section
Building	37	35	33
Driveways and yard	18	22	27
Gardening	27	26	24
Parkings	18	17	16

The open area is located in front of the main entrance to the building. bank. It is necessary to provide convenient vehicle access and pedestrian approaches, including the creation of ramps for access to the bank for people with limited mobility.

The territory of the closed zone must be provided with a convenient entry of collector cars. The territory of the bank from the side of the the covered area must be fenced off with a 2.5 m high fence. Entry to the protected area must be provided through a checkpoint. In the absence of conditions for placing a control gateway at the entrance to the territory, the boxes for unloading cash collection vehicles should be designed taking into account additional requirements that provide the possibility of preliminary control of cash collection vehicles directly in the box, subject to the security conditions of the security personnel.

Car parks for cars of customers and employees of the
are calculated on the basis of [28]:

- for clients - 5 parking spaces for each operating room
cashier;
- for employees - 20–40 parking spaces for 100 workplaces.

Bank premises are divided into groups according to availability zones:

1st group - access is allowed to customers and bank employees;

2nd group - access is allowed by bank employees;

3rd group - access is allowed to a limited contingent of bank employees

The 1st group includes premises for clients:

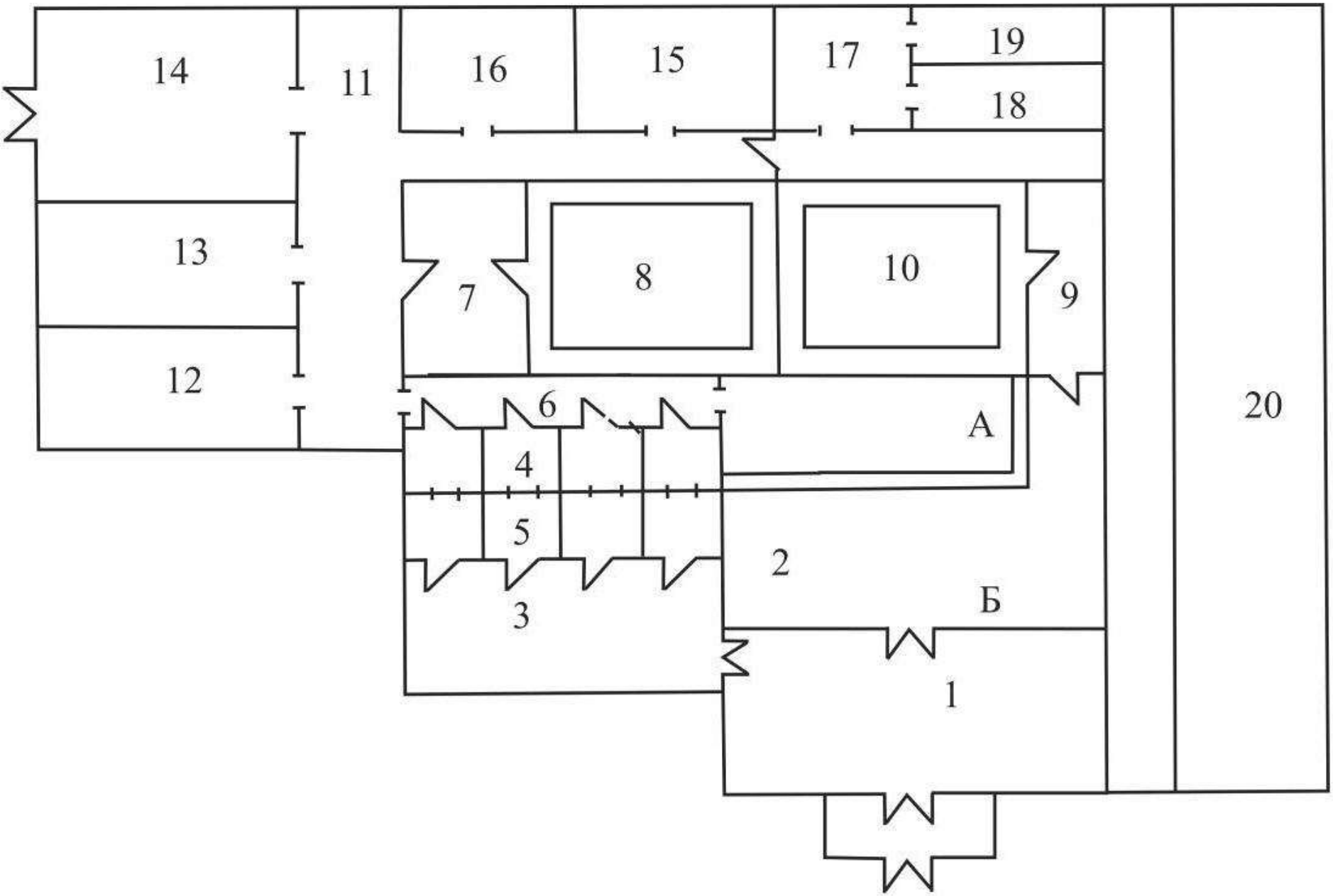
information and reference, operating and cash rooms, credit

the Department; department of deposits of the population; pension department; premises of the bank's management.

The second group includes the premises of other departments, premises associated with the processing and storage of banking information, and premises for communication equipment.

To the 3rd group - the premises of the cash register, the security unit and the security service.

These groups of premises must be separated from each other in terms of planning and construction: walls of a certain degree of resistance to burglary.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FUNCTIONAL BLOCKS OF THE BANK BUILDING

For normal functioning, a bank building must include the following functional blocks:

- accounting and operating unit;
- cash register;
- security unit;
- a block of office premises;
- computing center;
- auxiliary premises.

There are various functional, planning and type logical diagrams for bank buildings. The basis of each of them is the most rational way of the client, on the one hand rones, and the bank clerk's way on the other. Besides, an important component is the path of movement of values.

The scheme of functional zoning of the bank premises of a universal type:

1 - information and reference room; 2 - operating room; 3 - cash hall; 4 - operating cash desks; 5 - booths for counting money by clients; 6 - checkout area; 7 - pre-stock number 1;

8 - storeroom of valuables; 9 - pre-stock number 2; 10 - pantry of individual safes; 11 - room

money overloading; 12 - money recounting room; 13 - room

acceptance and delivery of money; 14 - box for loading and unloading collection vehicles;

15 - cashier's room; 16 - collector's room; 17 - security room;

18 - weapons storage room; 19 - room for loading and cleaning weapons;

20 - offices;

A - zone of accounting and operational workers;

B - customer area

1. The accounting and operating unit includes:

- information and reference room;
- operating room;
- accounting room;
- a room for electronic computers at operating room.

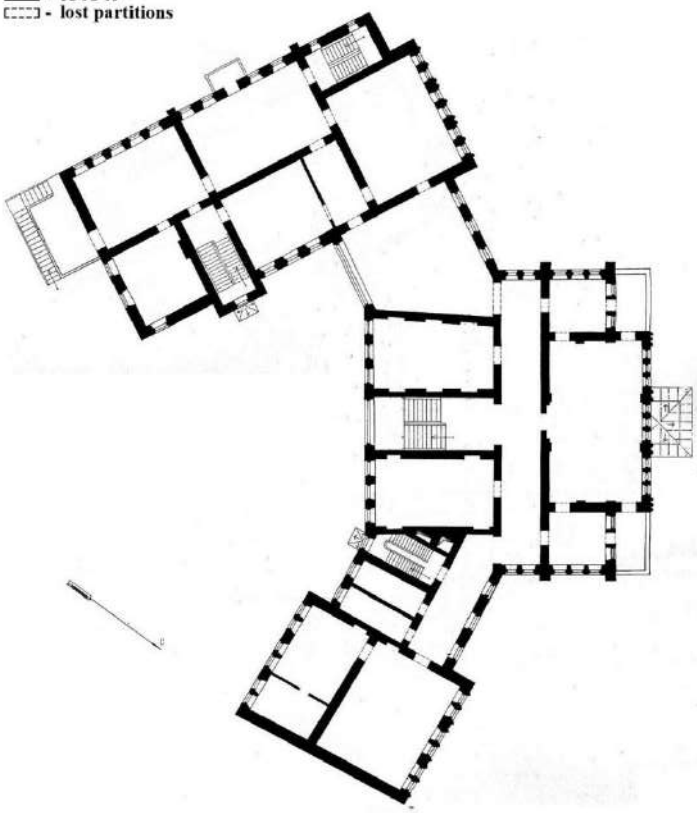
Call center performs in the bank building the function of the lobby, its task is to orient the client in the bank building. Various visual information and call boards are placed here.

Operating room - main bank premises – divided barrier into two approximately equal zones: the customer zone and the zone

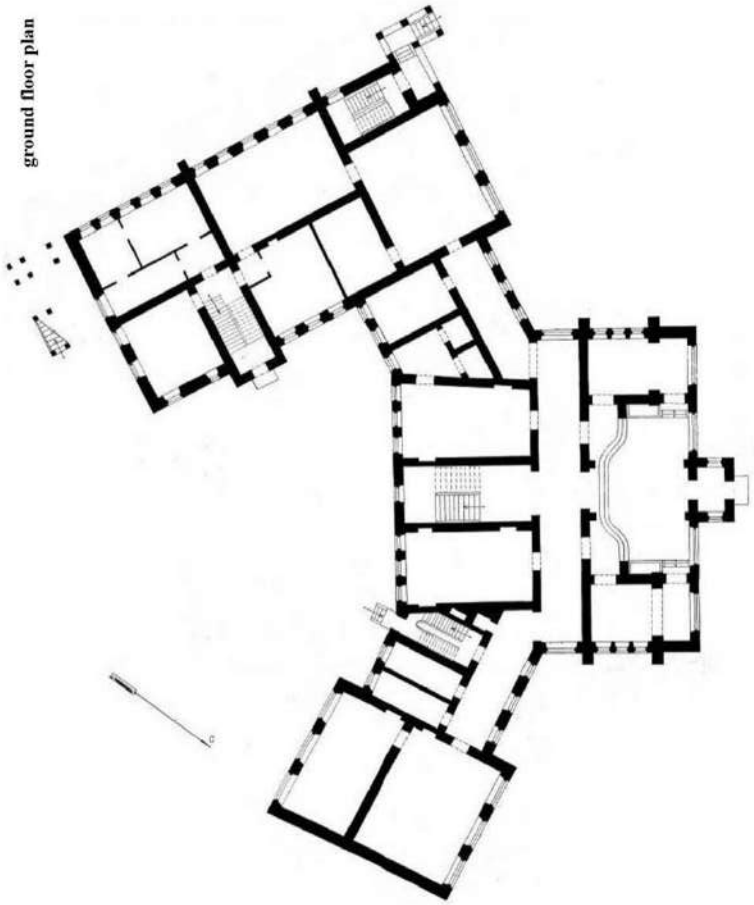
accounting and operational workers. Operating room area

is determined at the rate of 12 m2 per employee (operator) located in the employee area at the barrier. The barrier should have a horizontal panel 115 cm above the floor.

- 2000-e
- 1916 r.
- lost partitions

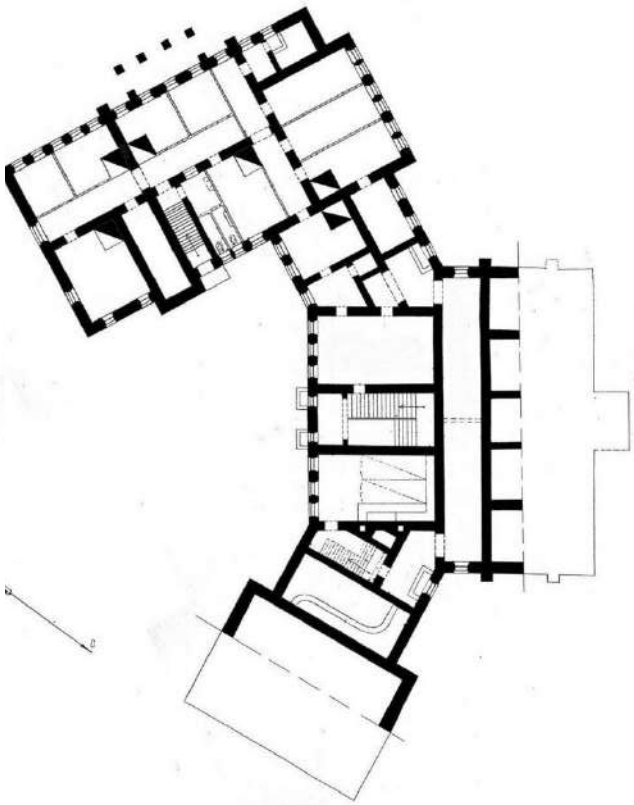


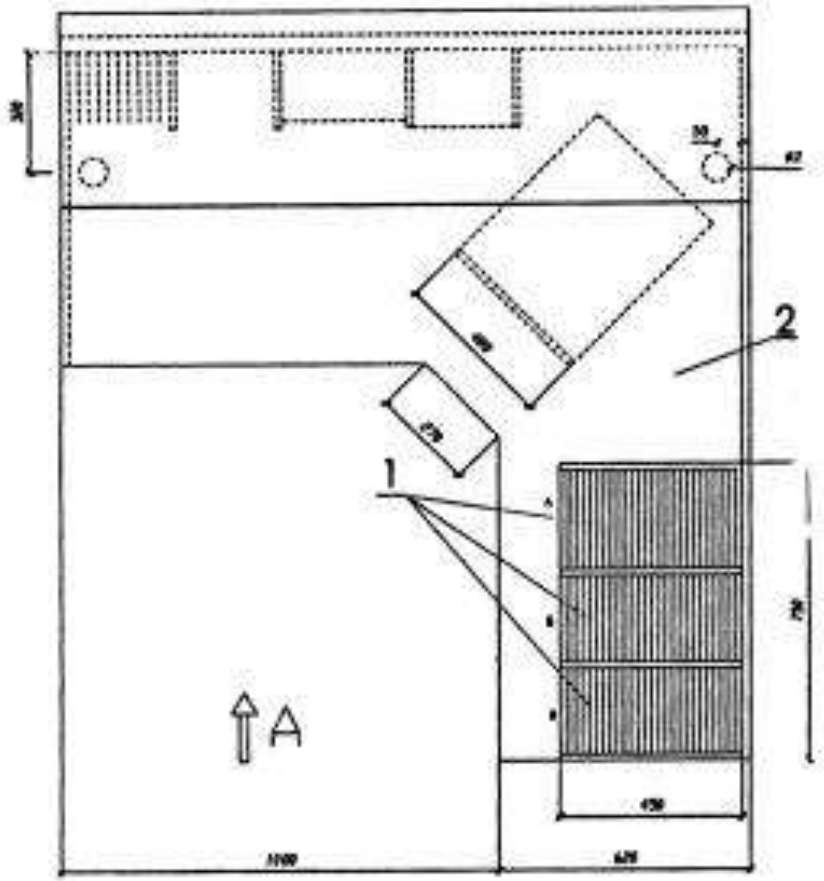
ground floor plan

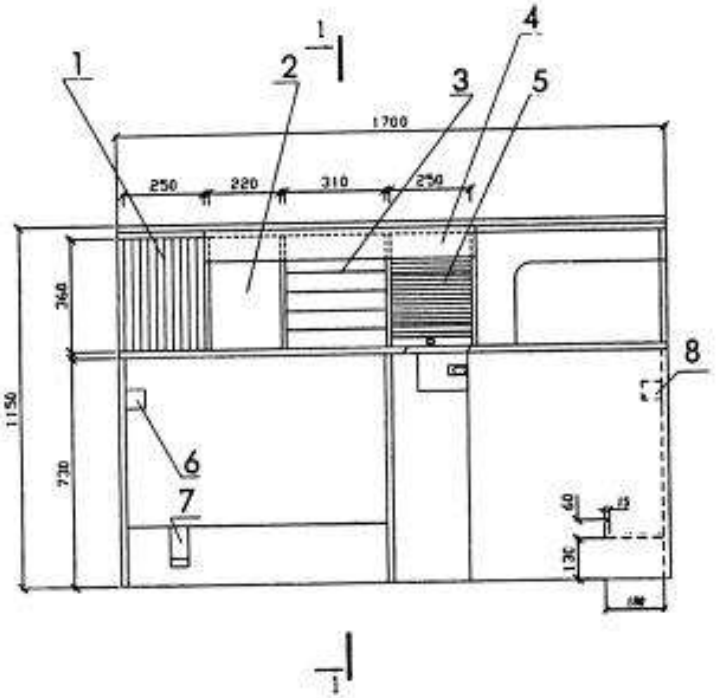


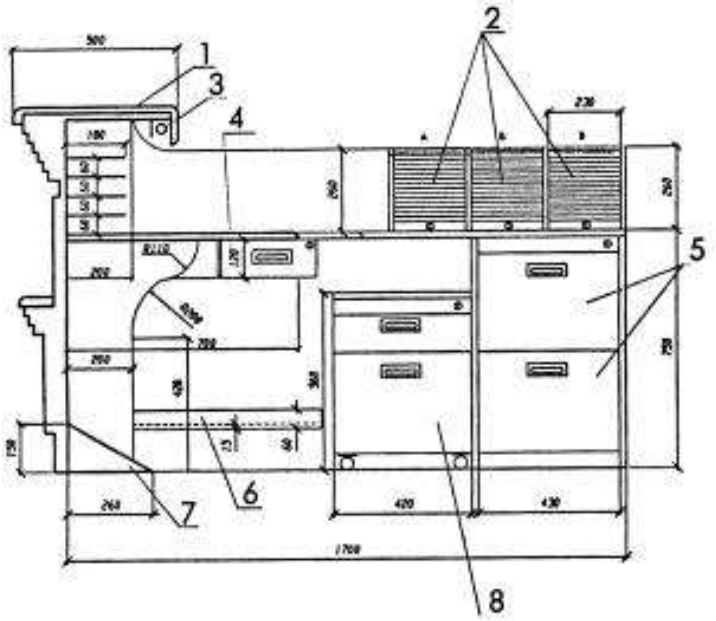
BASEMENT PLAN

2000-e
1916 r.
thickened partitions









Operator's workplace

2. The cash register includes:

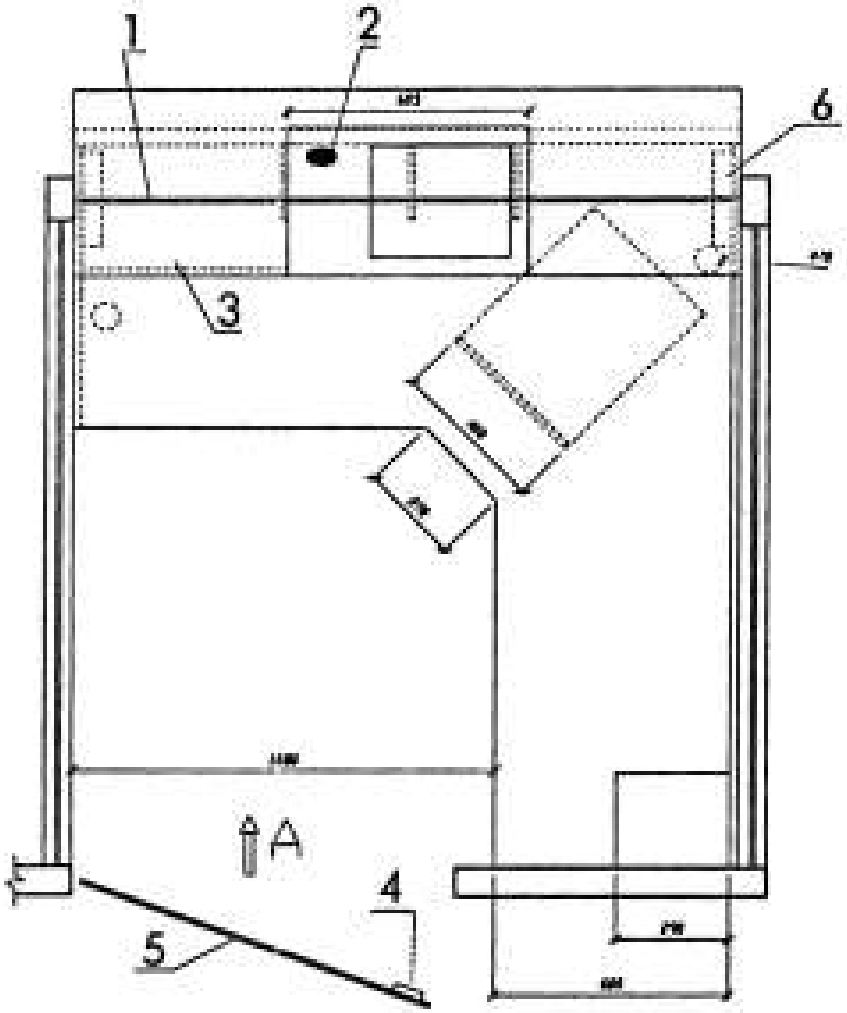
- cash desk;
- cash register.

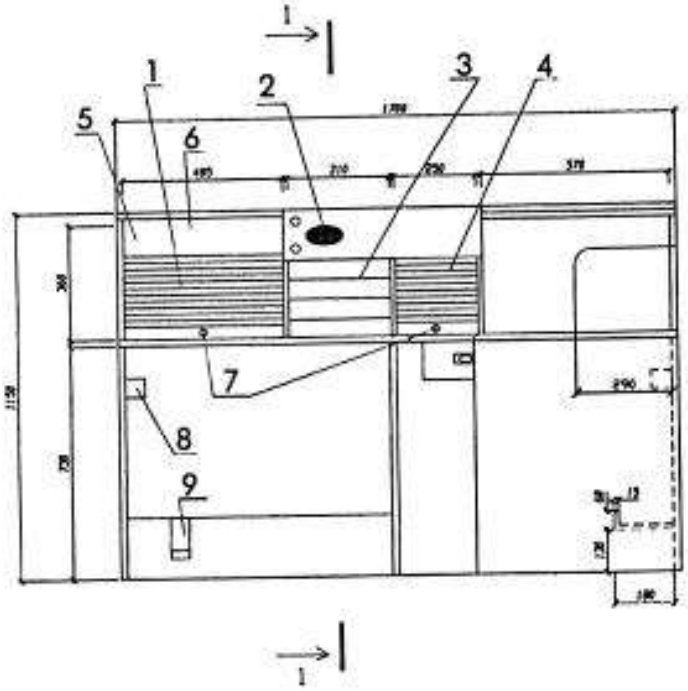
The checkout room is subdivided into a customer area and a room recounting money by clients. The front of the soviet booths (operating cash registers), functionally included in the cash owl knot. 12 m2 client area per operating room cash desk, area of the room for recalculating money by clients 4 m2 to one operating cash register.

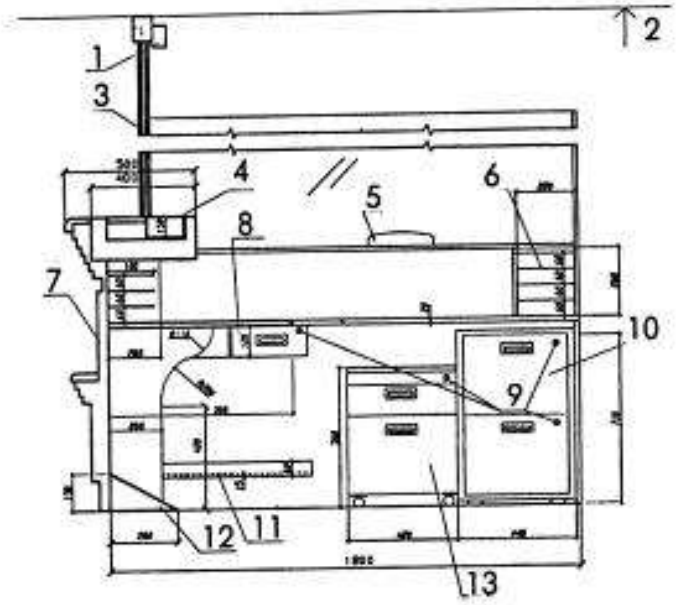
The checkout includes:

- operating cash desks;
- cashiers' premises;
- block for storing valuables;
- collection rooms.

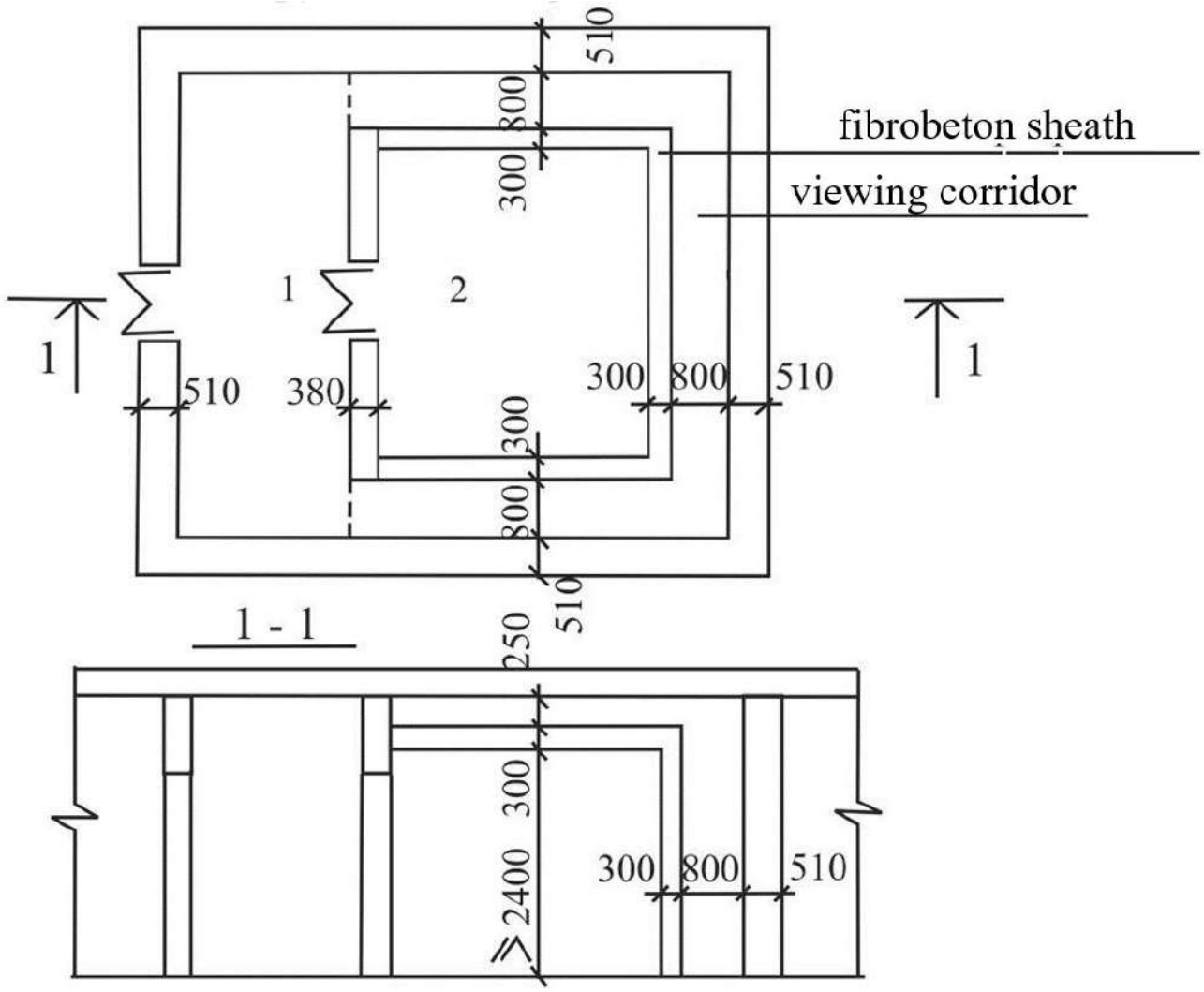
Operating cash desks are usually 6 m2. The doors of the booths of the operating cash registers must go out into the checkout area with a width of at least 1400 mm. At each checkout, there should be a place for the client to recount the money.







Cashier workplace



Value storage unit:

1 - prestoreroom, *2* - store of valuables

Storage unit:

- a pantry of valuables with a pre-storage;

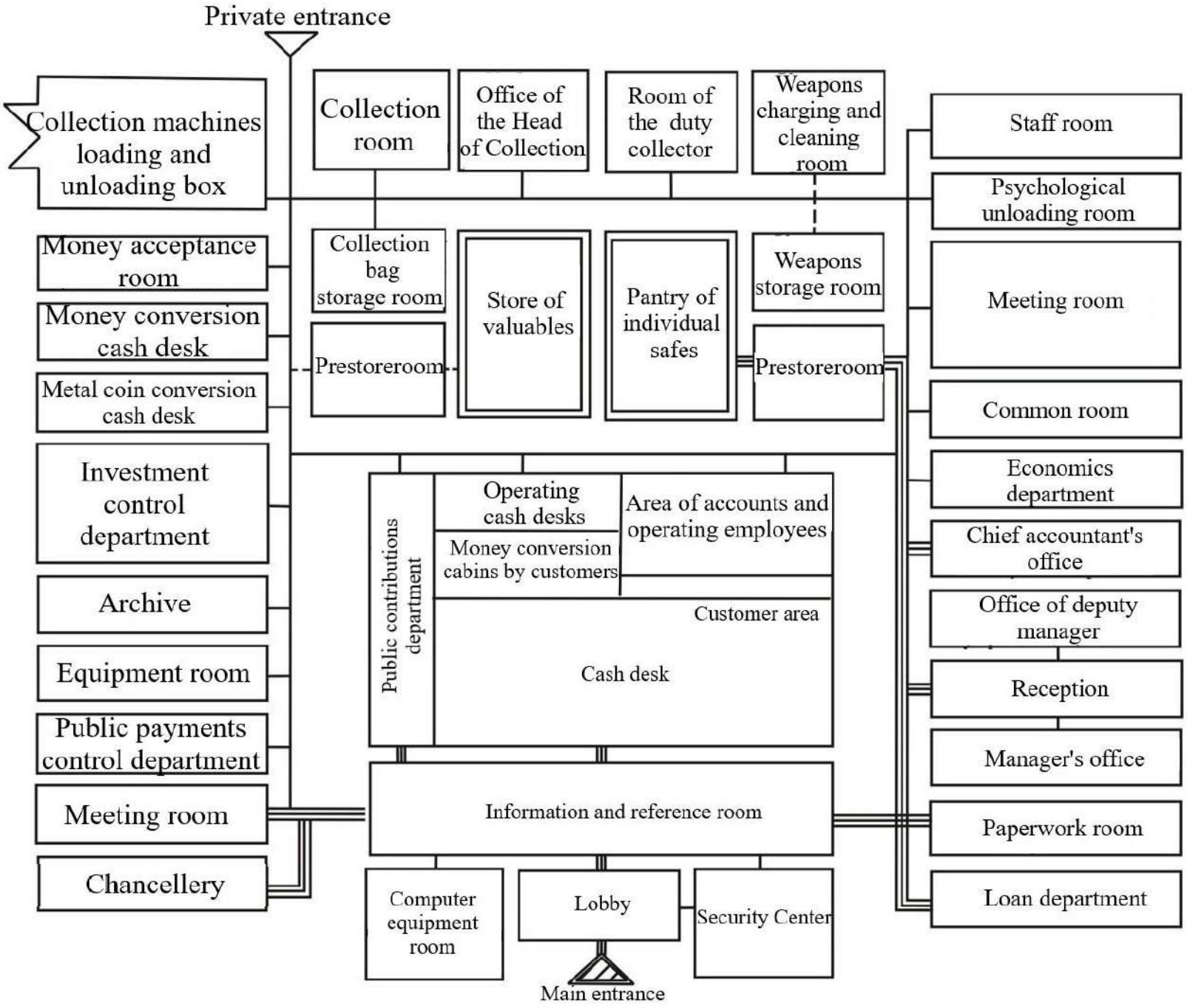
- pantry of individual safes with pre-storage.

The enclosing structures of the storeroom of values (walls, floor, ceiling) should be a shell made of monolithic fiber-reinforced concrete not less than 300 mm thick. In this case, between the walls of adjacent surfaces premises and this shell should leave a viewing corridor width of at least 800 mm, iewed from the pre-stock. There must be a gap of at least 250 mm between the upper surface of the shell and the overlap.

The size of the box for loading and unloading cash-in-transit vehicles is 10 × 6 × × 3.5 m. Directly next to the box, there should be a room for transferring valuables from cash-in-transit vehicles to the valuables storeroom and vice versa.

All rooms of the cash register should be located compactly and functionally isolated from other rooms; at the same time, the following interconnections between the premises are necessary:

- the entrance to the cash register during the delivery of valuables must be carried out from the loading / unloading box of the collection vehicles;
- the entrance from the box must be carried out in the room for loading of valuables from collector vehicles, which must have obligatory connection with the storeroom of valuables;
- the entrance to the storeroom of valuables is carried out only from the pre-storeroom;
- the room for the counting of money tickets should have the shortest possible connections with the preparatory and operational cash desks.


Private entrance
Collection machines loading and unloading box
Collection room
Office of the Head of Collection
Room of the duty collector
Weapons charging and cleaning room
Staff room
Psychological unloading room
Money acceptance room
Collection bag storage room
Store of valuables
Pantry of individual safes
Weapons storage room
Meeting room
Money conversion cash desk
Prestoreroom
Prestoreroom
Metal coin conversion cash desk
Common room
Investment control department
Public contributions department
Operating cash desks
Area of accounts and operating employees
Economics department
Money conversion cabins by customers
Chief accountant's office
Archive
Customer area
Office of deputy manager
Equipment room
Cash desk
Reception
Public payments control department
Manager's office
Meeting room
Information and reference room
Paperwork room
Chancellery
Computer equipment room
Lobby
Security Center
Loan department
Main entrance

3. The security unit includes:

- the premises of the control center;
- security room;
- room for loading and cleaning weapons;
- weapons storage room.

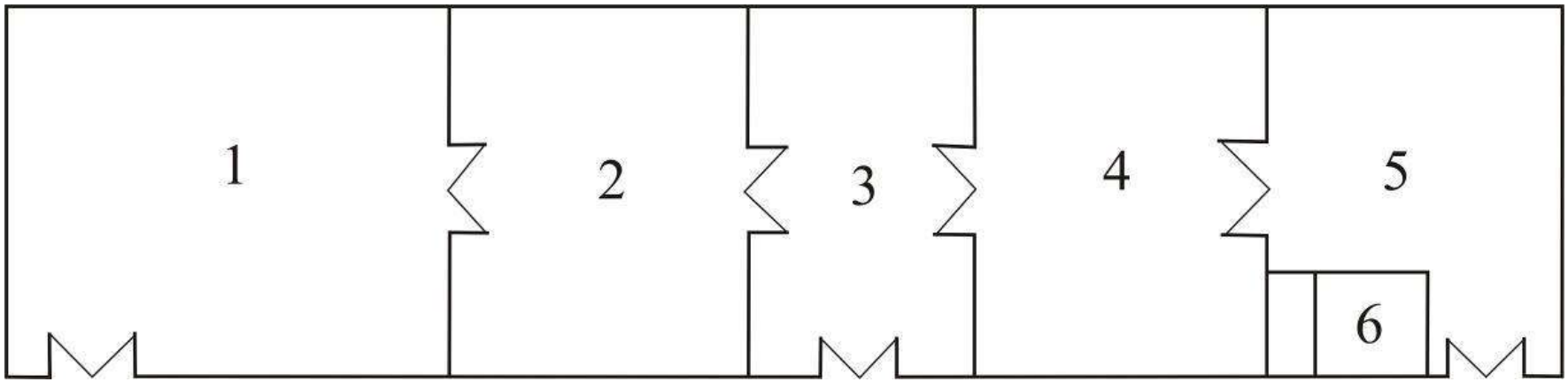
4. The block of office premises includes the premises of departments and premises of the bank's management.

a) premises of departments:

- credit department;
- department of deposits of the population;
- legal department;
- department of securities;
- audit department;
- foreign exchange department;
- department of work with cards;
- economic department;
- maintenance department;
- the pension department;

b) the premises of the bank's management:

- **reception;**
- **manager's office;**
- **offices of deputies.**

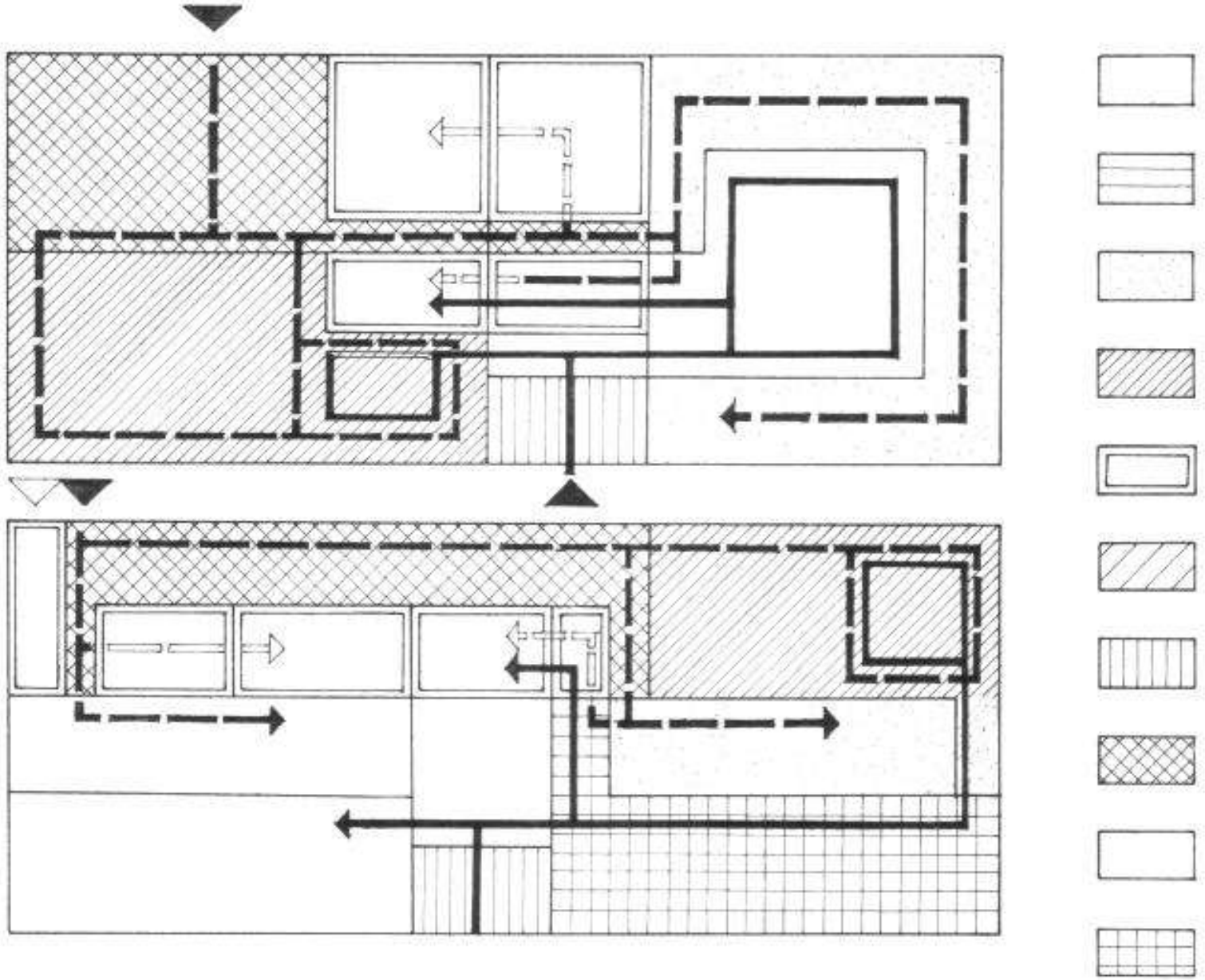


The layout of the premises of the bank's management:

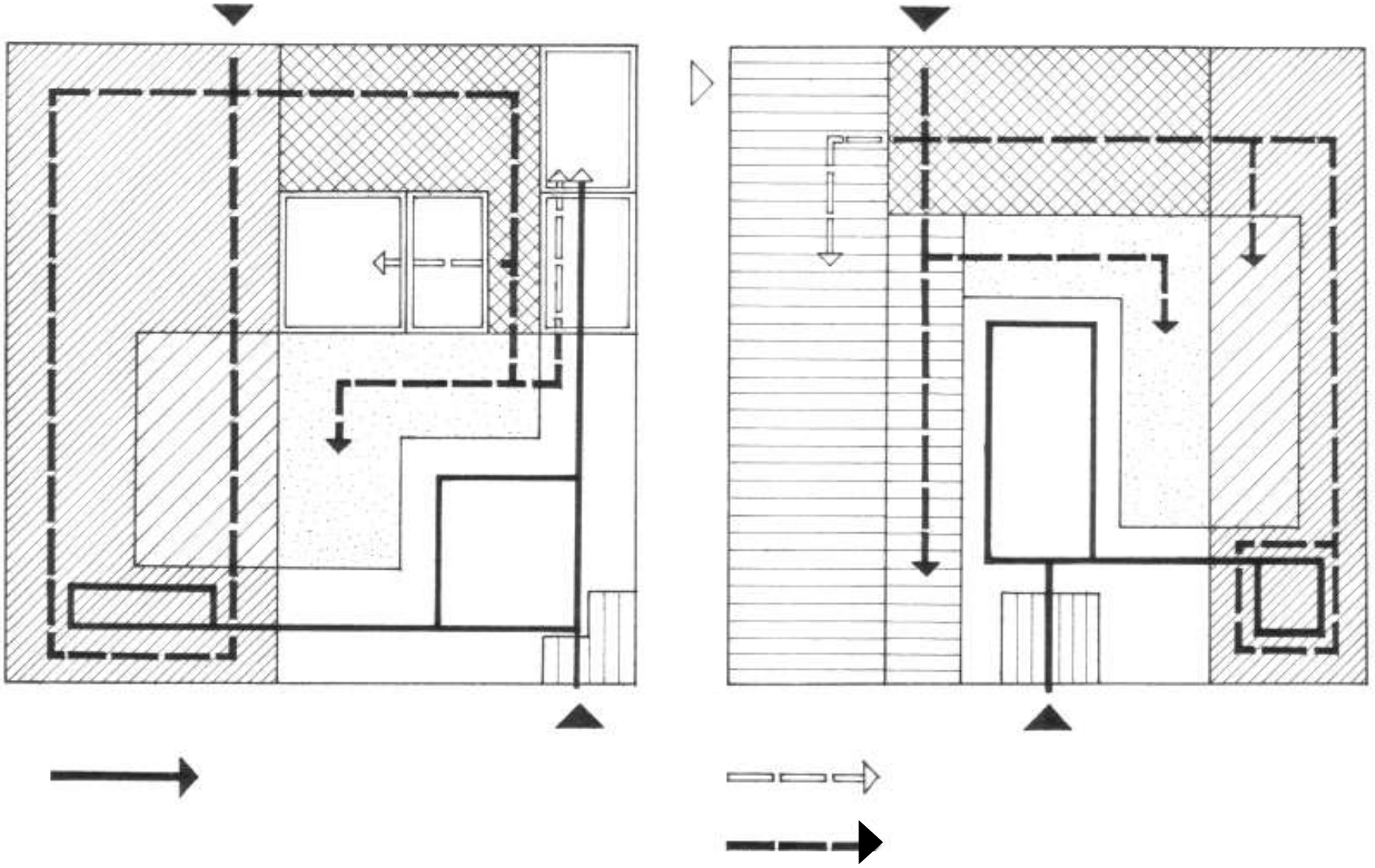
1 - meeting room of the bank council;
2 - office of the deputy manager;
3 - reception; 4 - manager's office;
5 - rest room;
6 - sanitary block

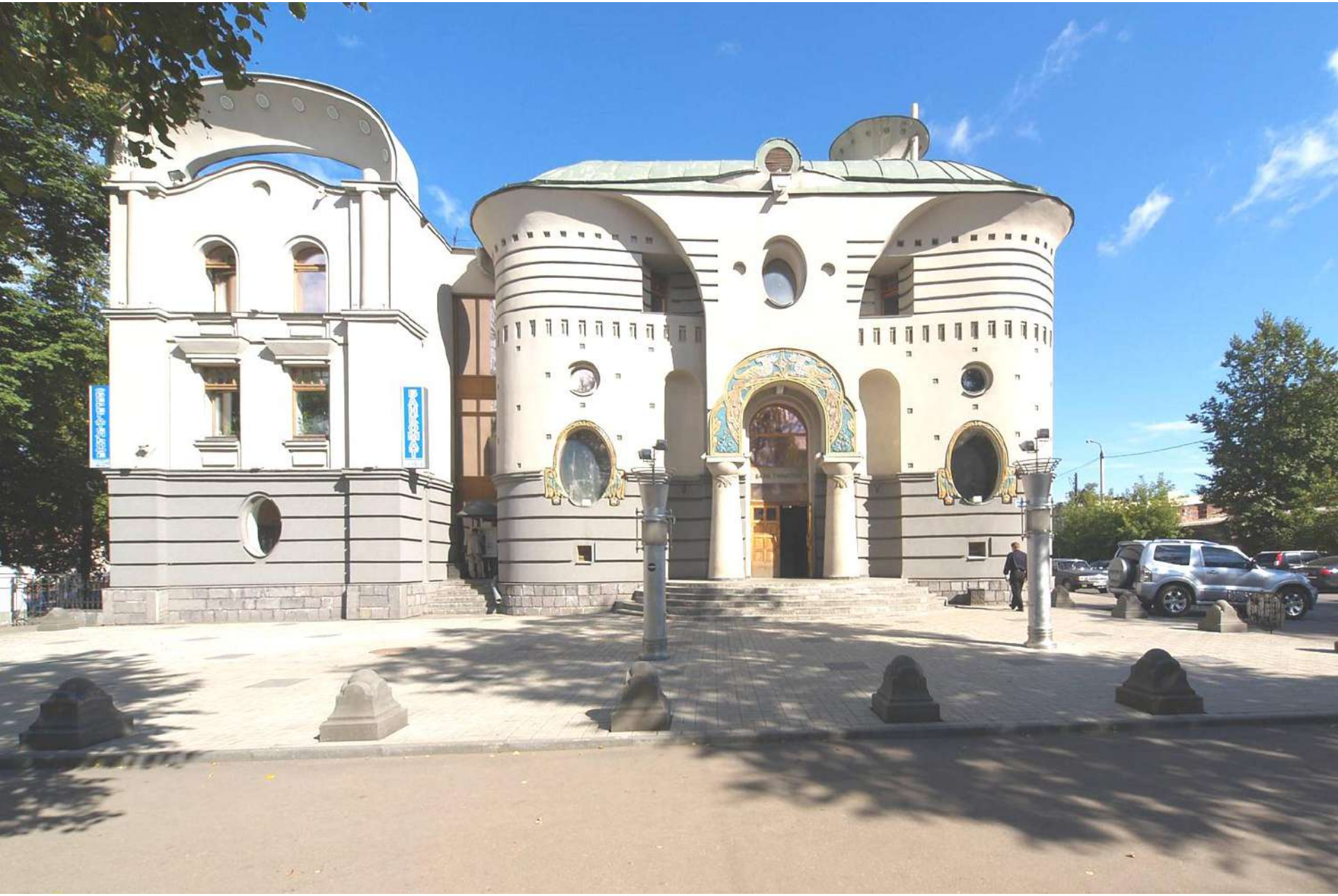
5. Auxiliary premises:

- archive;
- pantry of blanks;
- premises for service personnel;
- room for relaxation and psychological relief;
- utility pantries;
- sanitary blocks;
- technical and engineering premises.



Typological schemes of bank buildings






ЦК ЛУКОЙЛ
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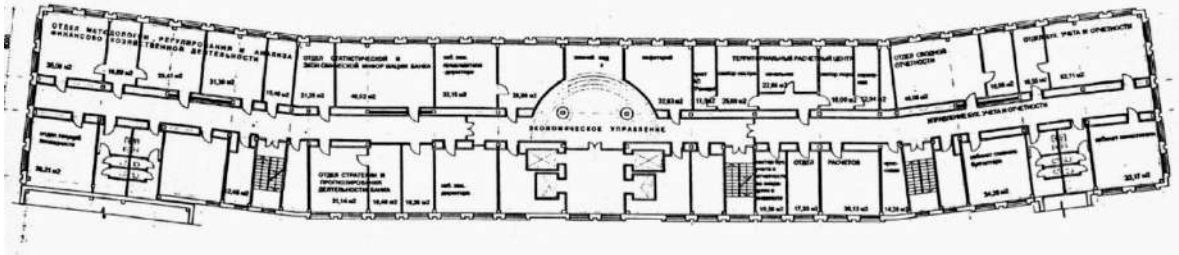
P

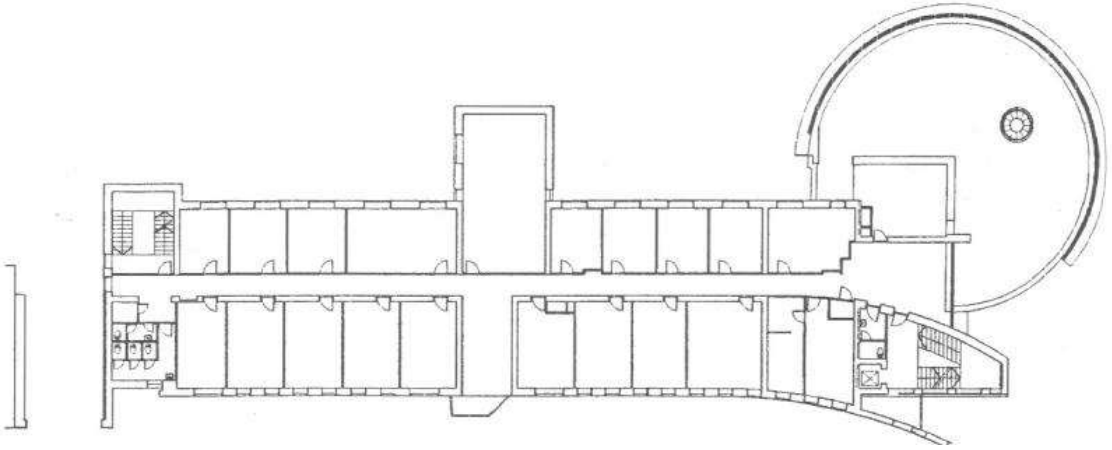

Россия

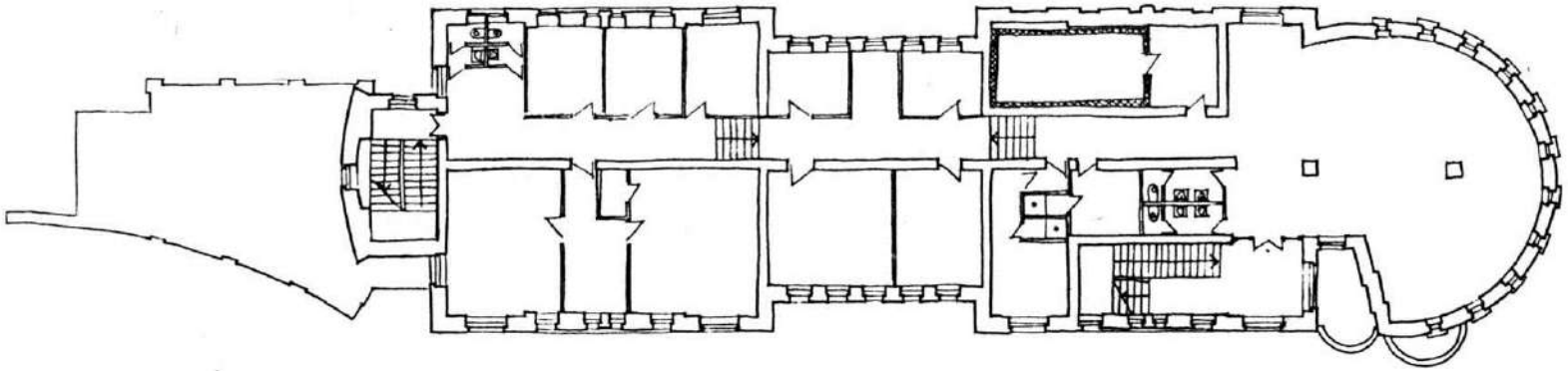
Floor Plan 5



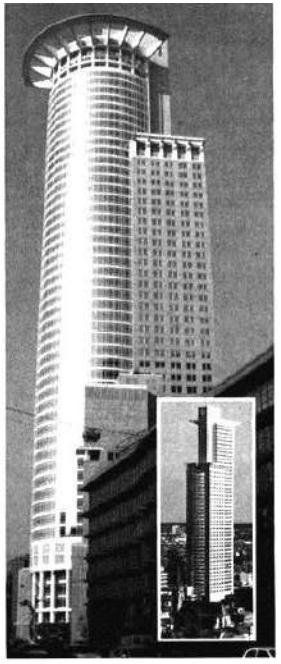
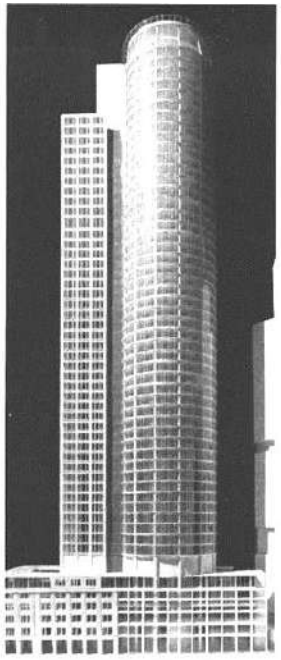
Floor Plan 1

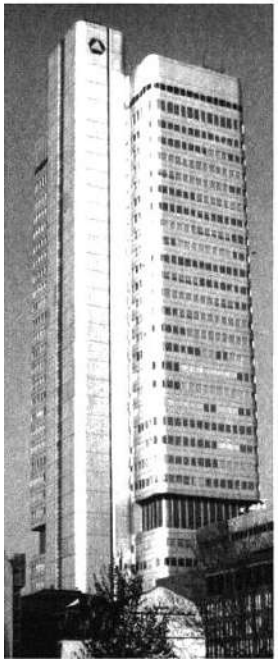

Райффайзен БАНК



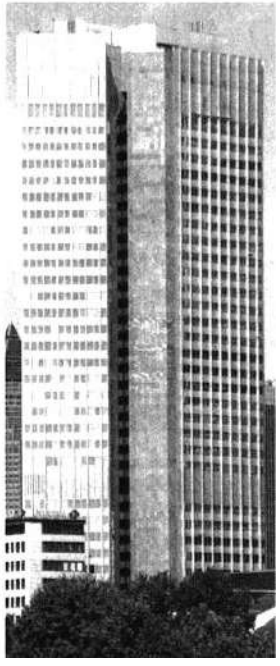




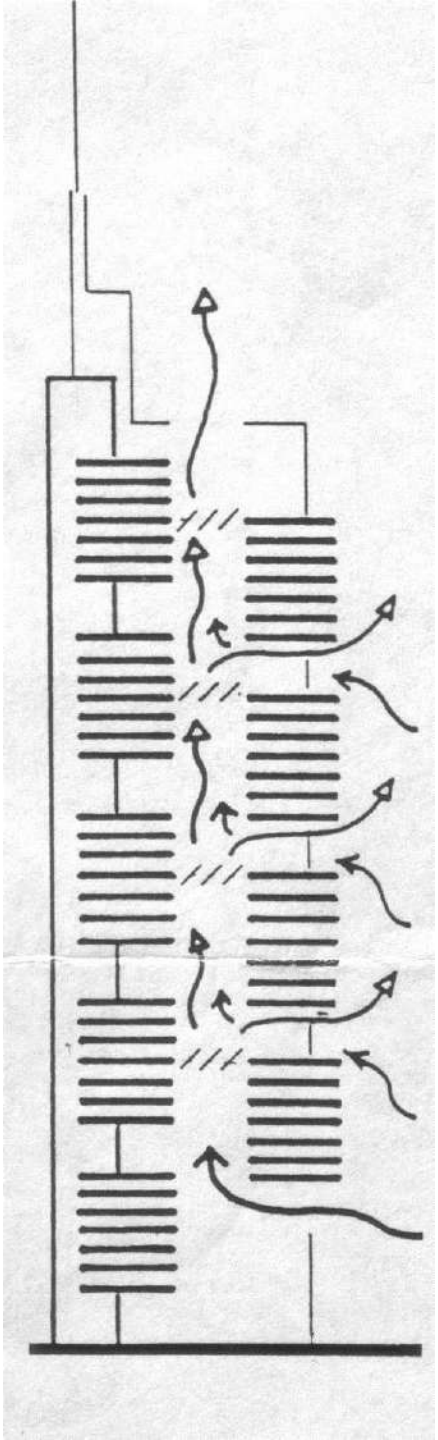


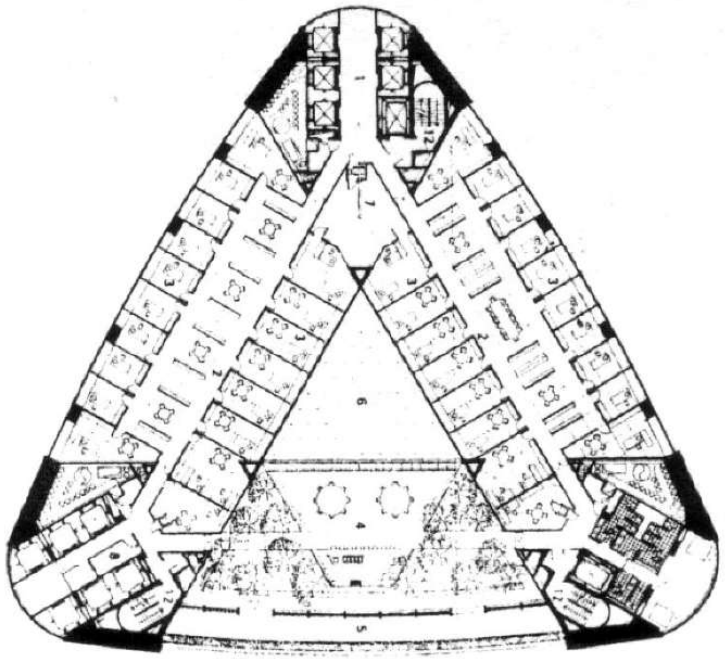


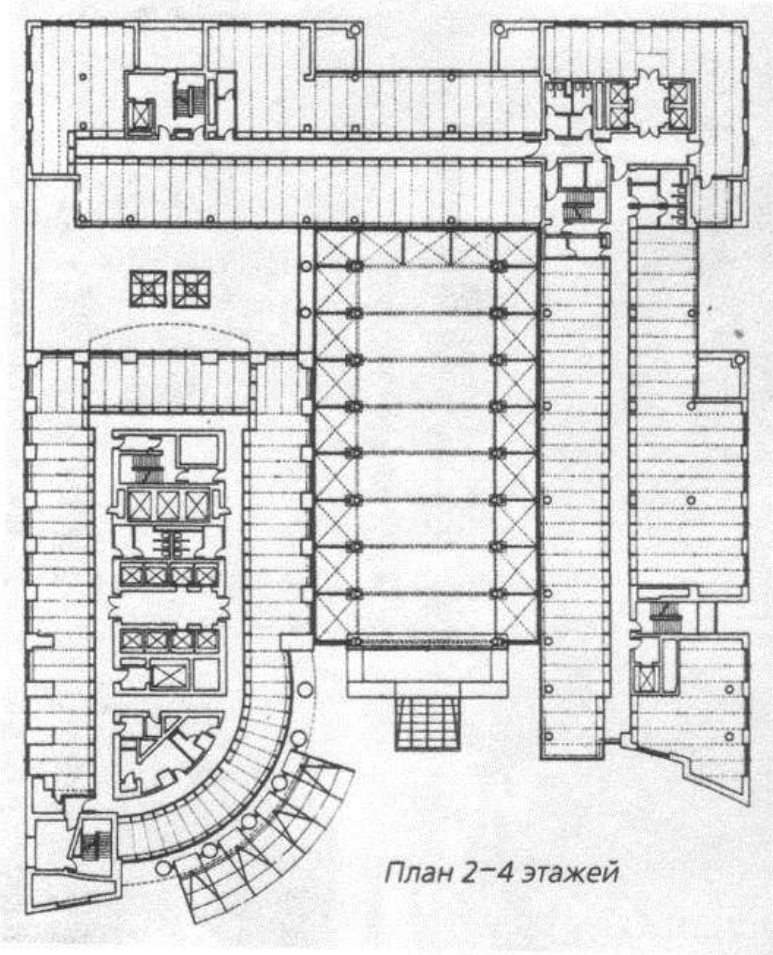



nationale suisse


Frankfurter
Wir kümmern uns d'rum







План 2–4 этажей


Rabobank


БАНК РОССИИ

LECTURE 11.

BUILDINGS AND STRUCTURES FOR PHYSICAL EDUCATION AND SPORTS

Objects of physical education, sports and physical education and leisure are divided into:

- open and covered;
- summer and winter;
- volumetric and planar;
- universal and specialized types.

By the main purpose, sports facilities are:

- training (without seats for spectators);
- demonstration (with seats for spectators);
- Physical education and health facilities;
- children's.


СТАДИОН
"ПЕНЗА"

OPEN GAME FLAT STRUCTURES

Open game flat facilities: sports playgrounds and playing fields; running and speed skating tracks; sports arena; stadiums.

Stadium - sports complex with different functions: educational, training, demonstration; includes a sports arena with seats for spectators, sports playgrounds, other indoor and outdoor sports facilities for various sports with utility areas and rooms.

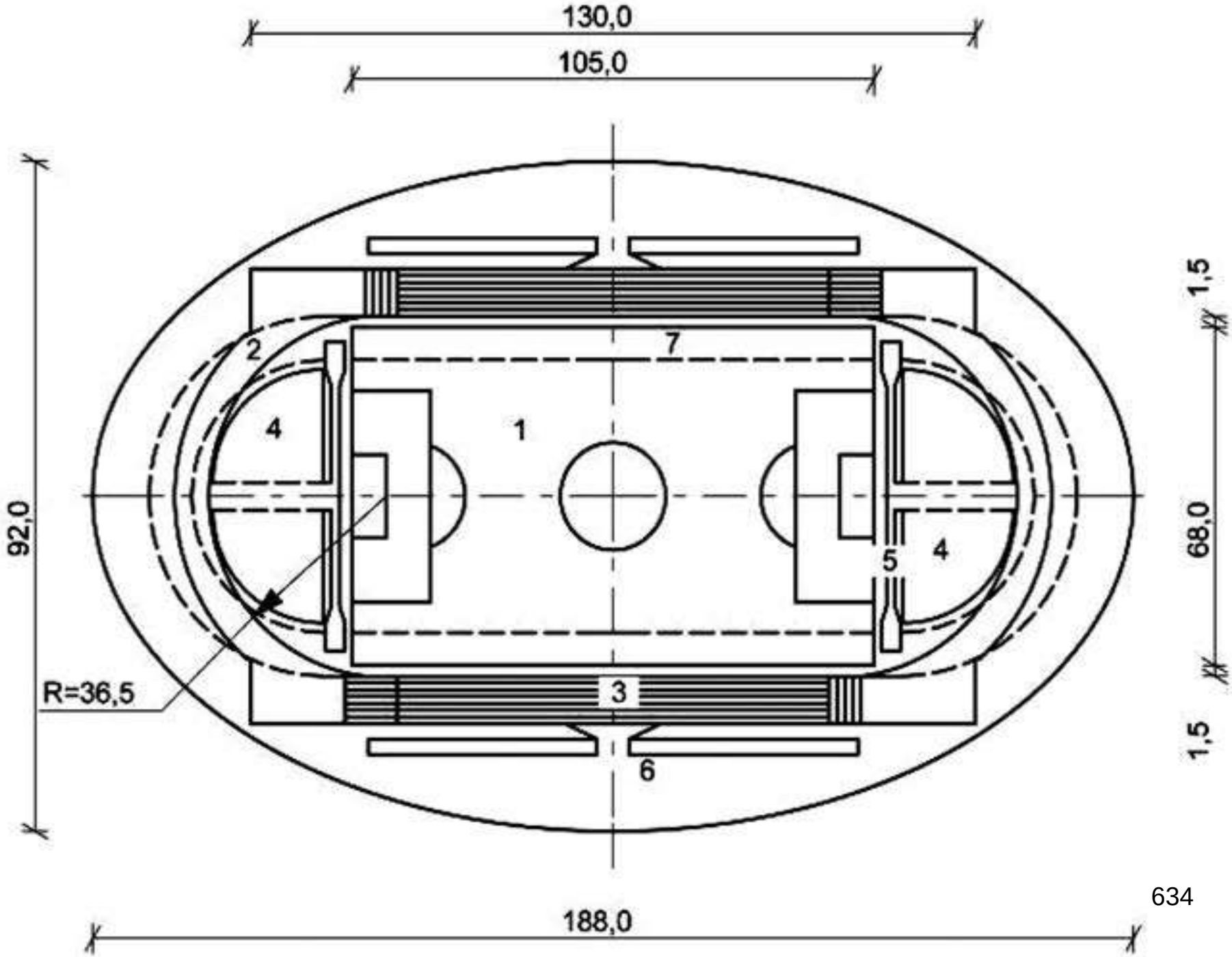
The following sports playgrounds are:

- for badminton 13.4 × 5.18 m;
- for basketball 28 × 15 m;
- for volleyball 18 × 9 m;
- for handball 40 × 20;
- for tennis 23.8 × 11 m;
- for table tennis 2.74 × 1.52 m (one table).

Types of playing fields for sports games:

- football 105 m × 68 m;
- for rugby 120 m × 72 m;
- for field hockey 91.4 m × 55 m;
- for baseball 120 m × 120 m.

The sports arena is a football field bordered by a circular track and field track. Places for jumping and throwing balls are located in sectors of the tracks or beyond the outer perimeter of its straight sections. Outdoors, football and athletics are combined on one common structure for them - a football and athletics sports arena. Training sessions in both football and athletics are possible on the sports arena, and when arranged along one or more sides of the sports arena of the rostrum, competitions are possible for spectators.


130,0
105,0
92,0
1,5
68,0
1,5
188,0
R=36,5
1
2
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6
7

Sports arena :

1 - football field; 2 – a closed athletics track 400 m;

3 - a 100 m athletics track;

4 – athletics sectors for throwing a ball, hammer, disk and spear;

5 - place for high jump;

6 - place for long jump and pole vault;

7 - ice circle 400 m track

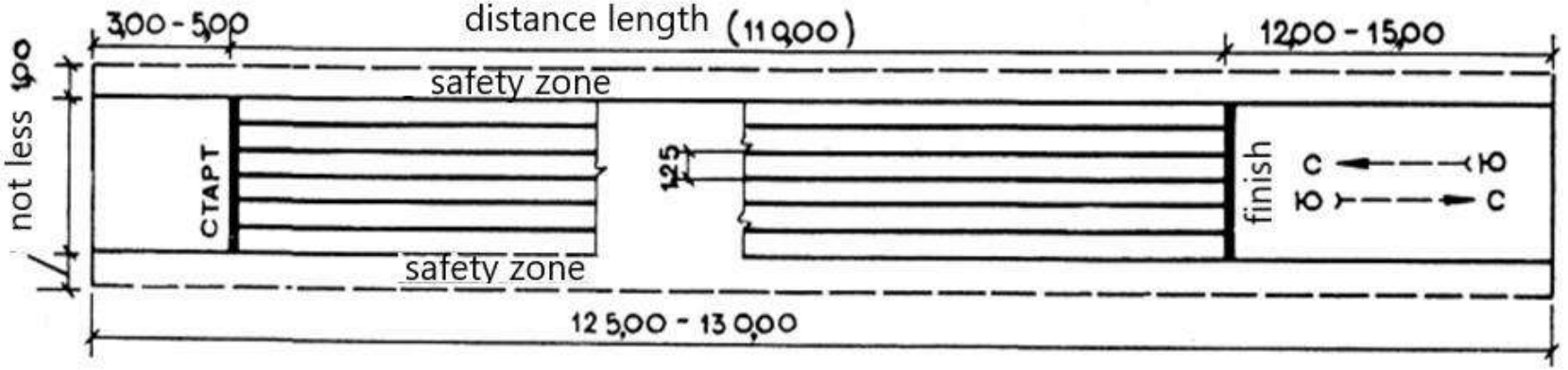
When designing open sports facilities, it is necessary to strictly observe the orientation of the longitudinal axis of the field of the sports arena and stadium, as well as the grounds for sports games from south to north. The deviation cannot exceed, as a rule, 15° on each side.

The construction of the fields and places for athletics depends on the selected top layer (coating), which can be artificial (from various materials) or grass.

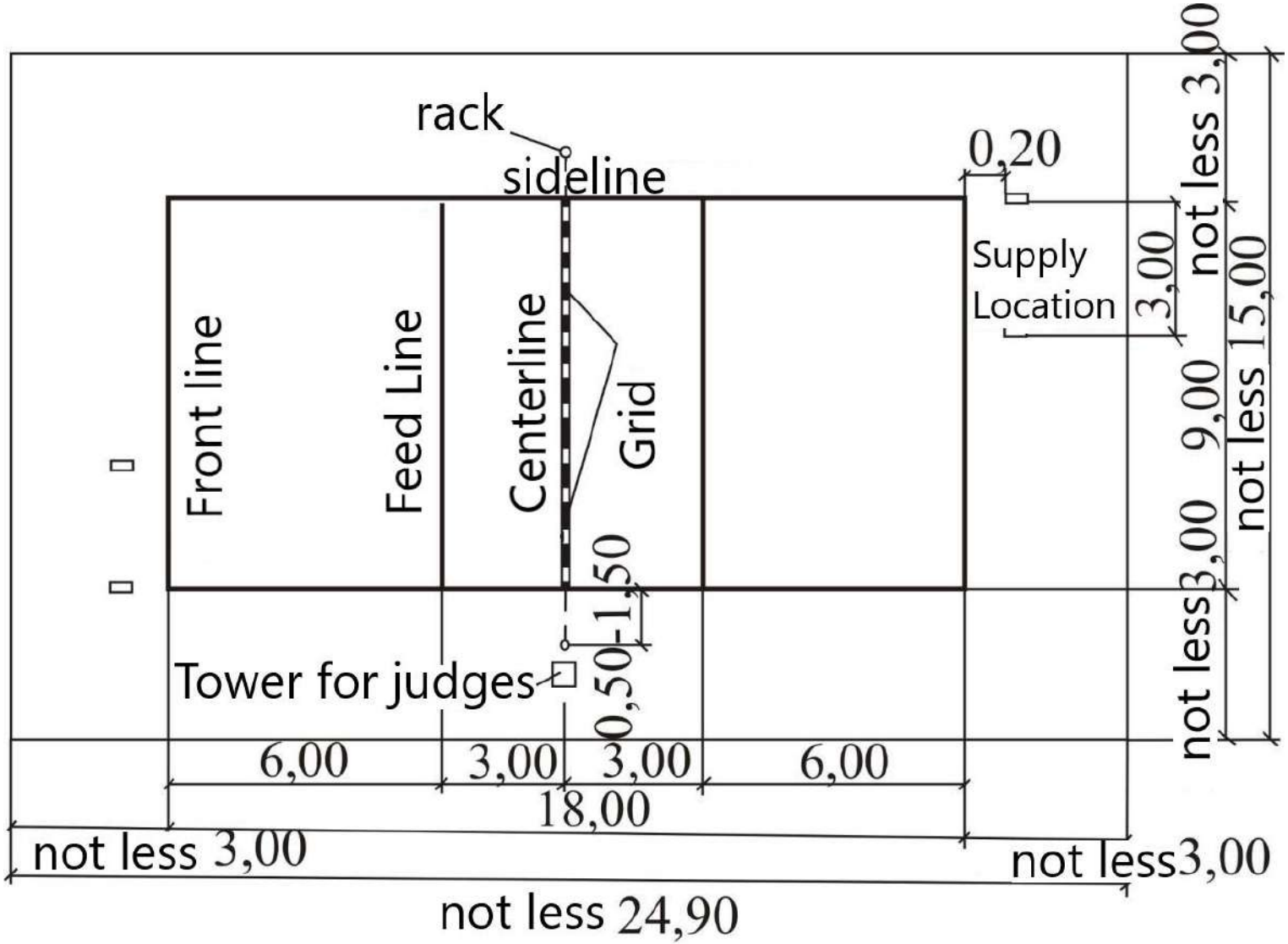
Artificial coatings are divided into non-rigid (non-water resistant, water resistant, new types of seamless elastic and durable coatings), rigid (asphalt coating, concrete coating, porous concrete coating) and wooden. Special coatings (including synthetic materials) of open flat sports facilities must have an even and non-slip surface, which does not lose load capacity during overwetting.

The grass coatings may have:

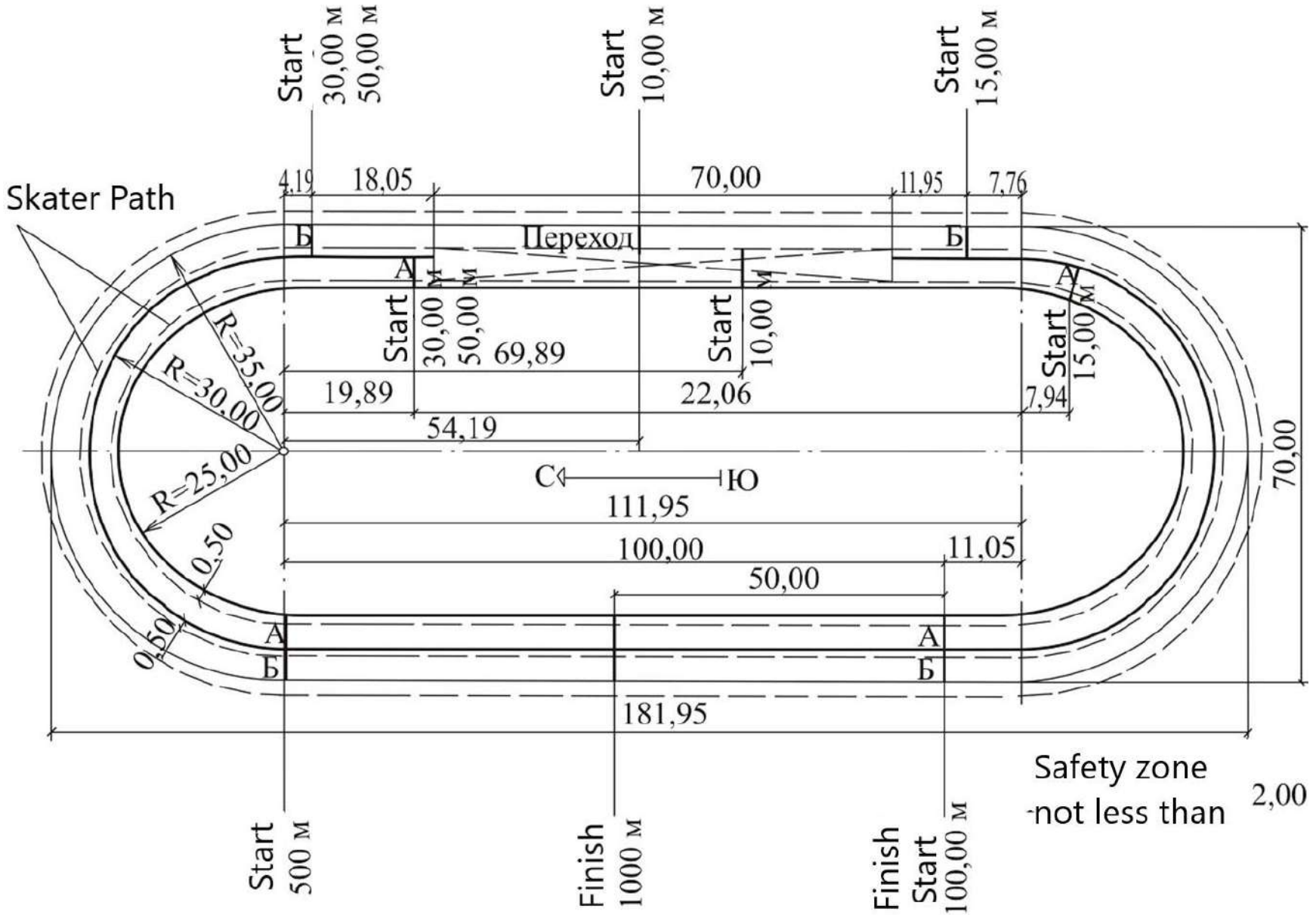
- specially created sports lawn;
- natural grass cover.



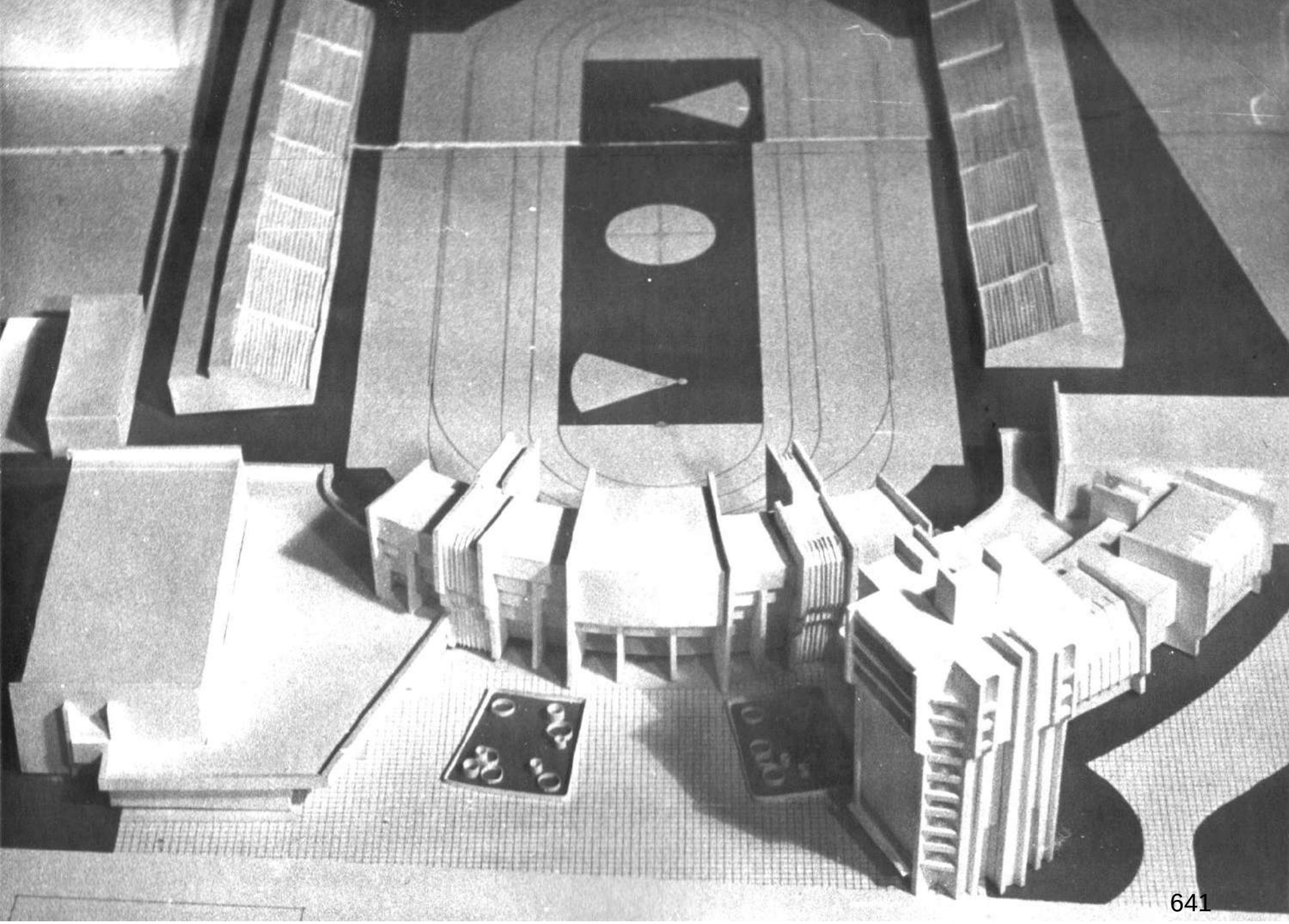
Places for running and walking

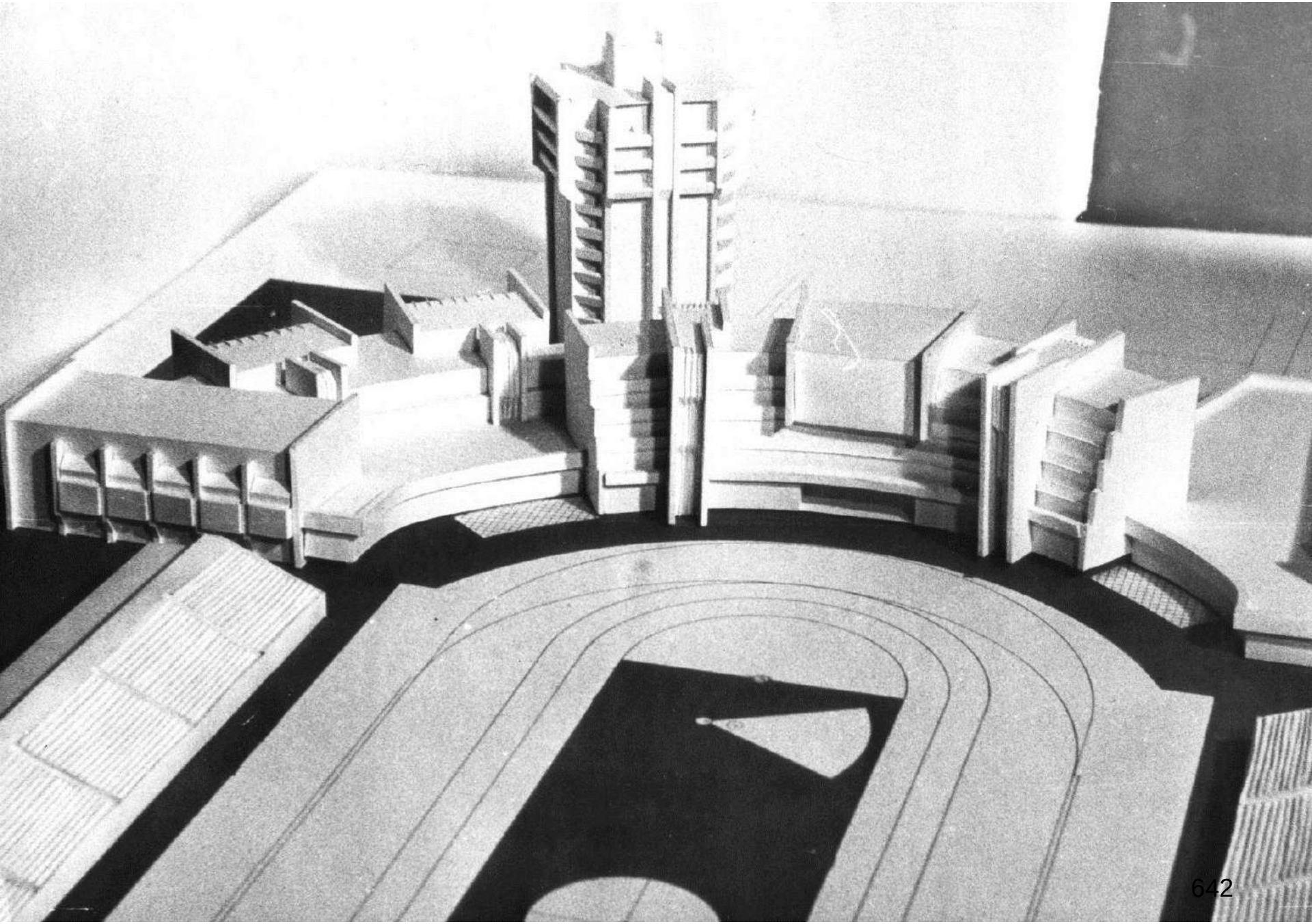


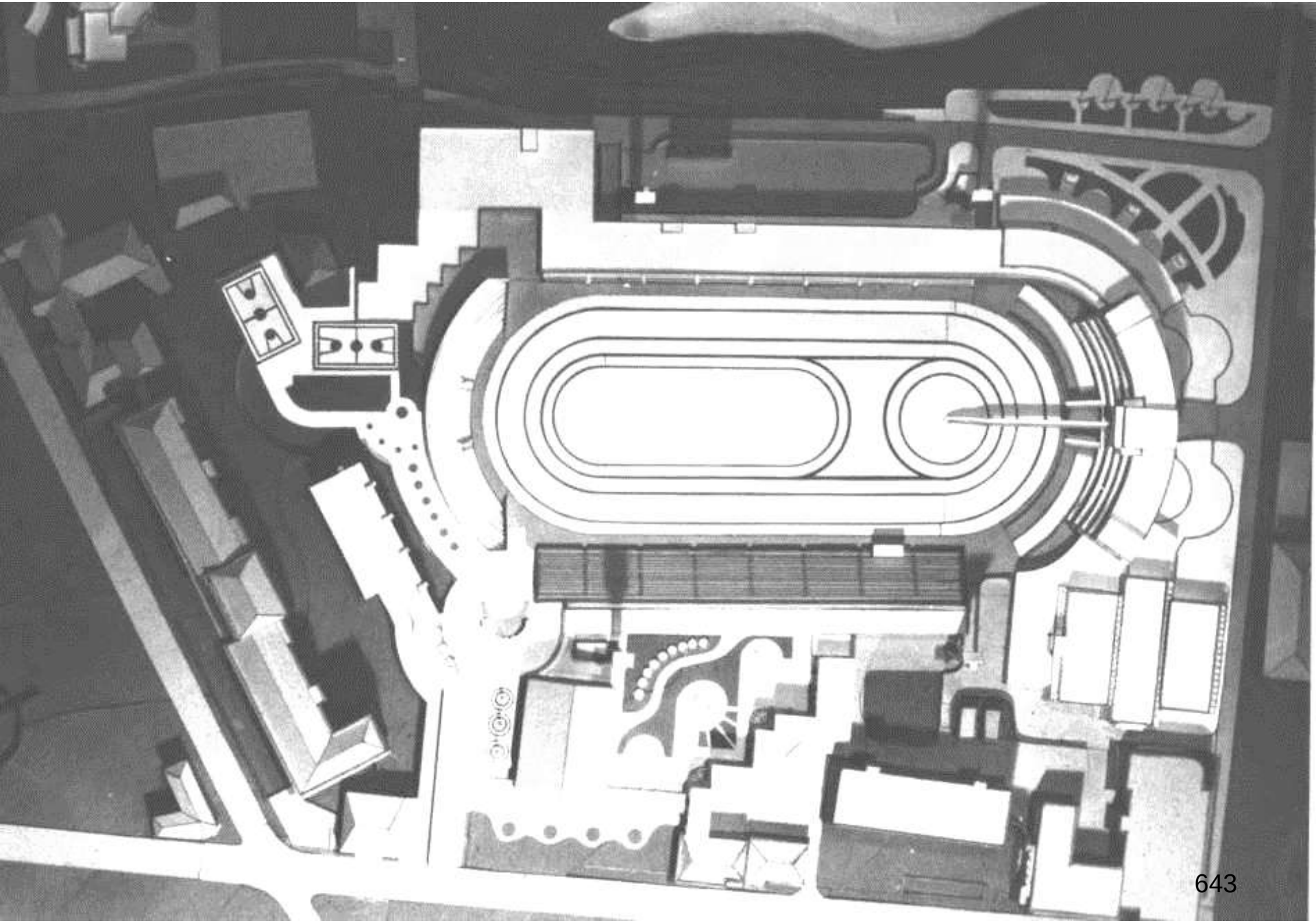
Volleyball Court

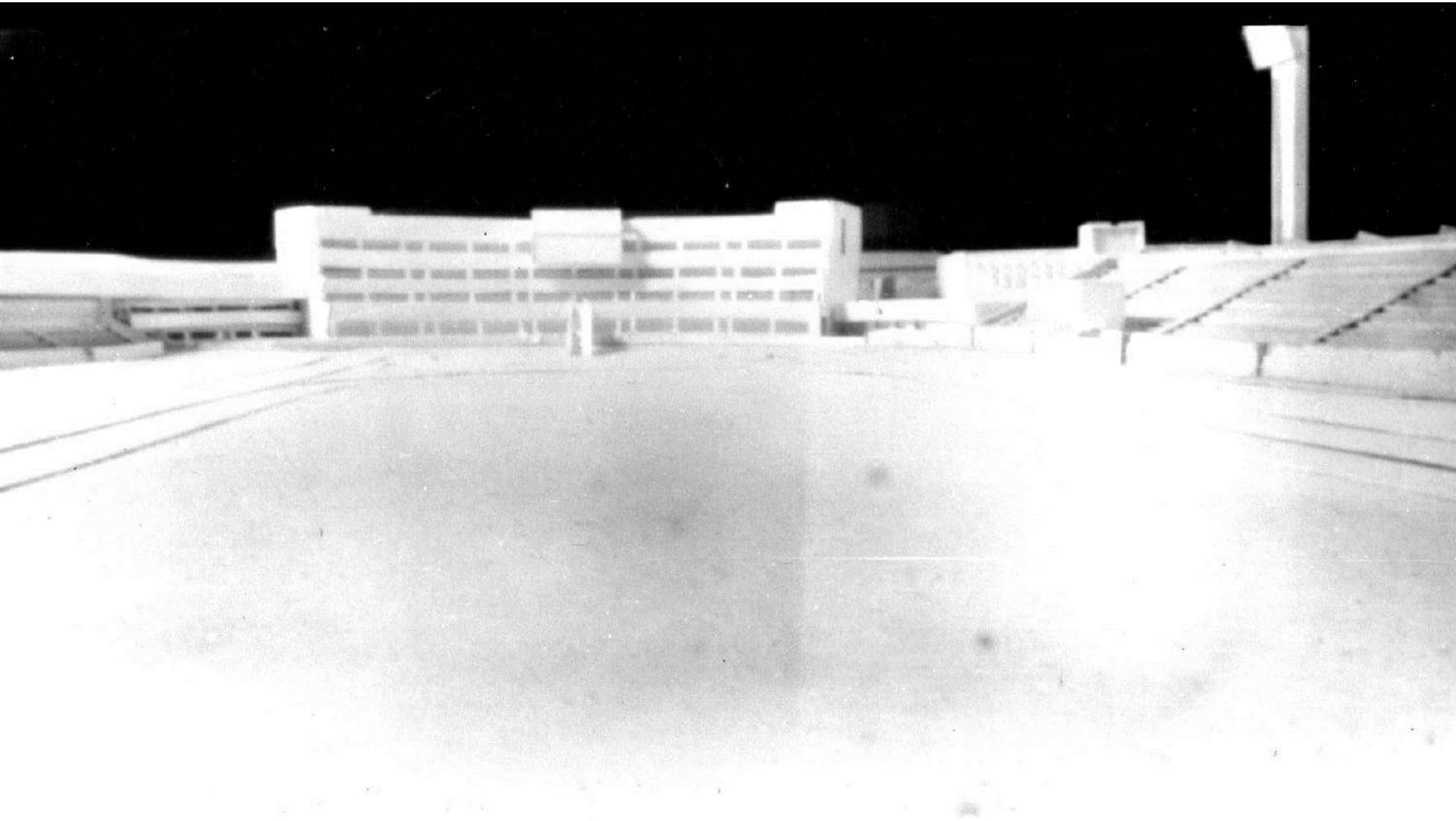


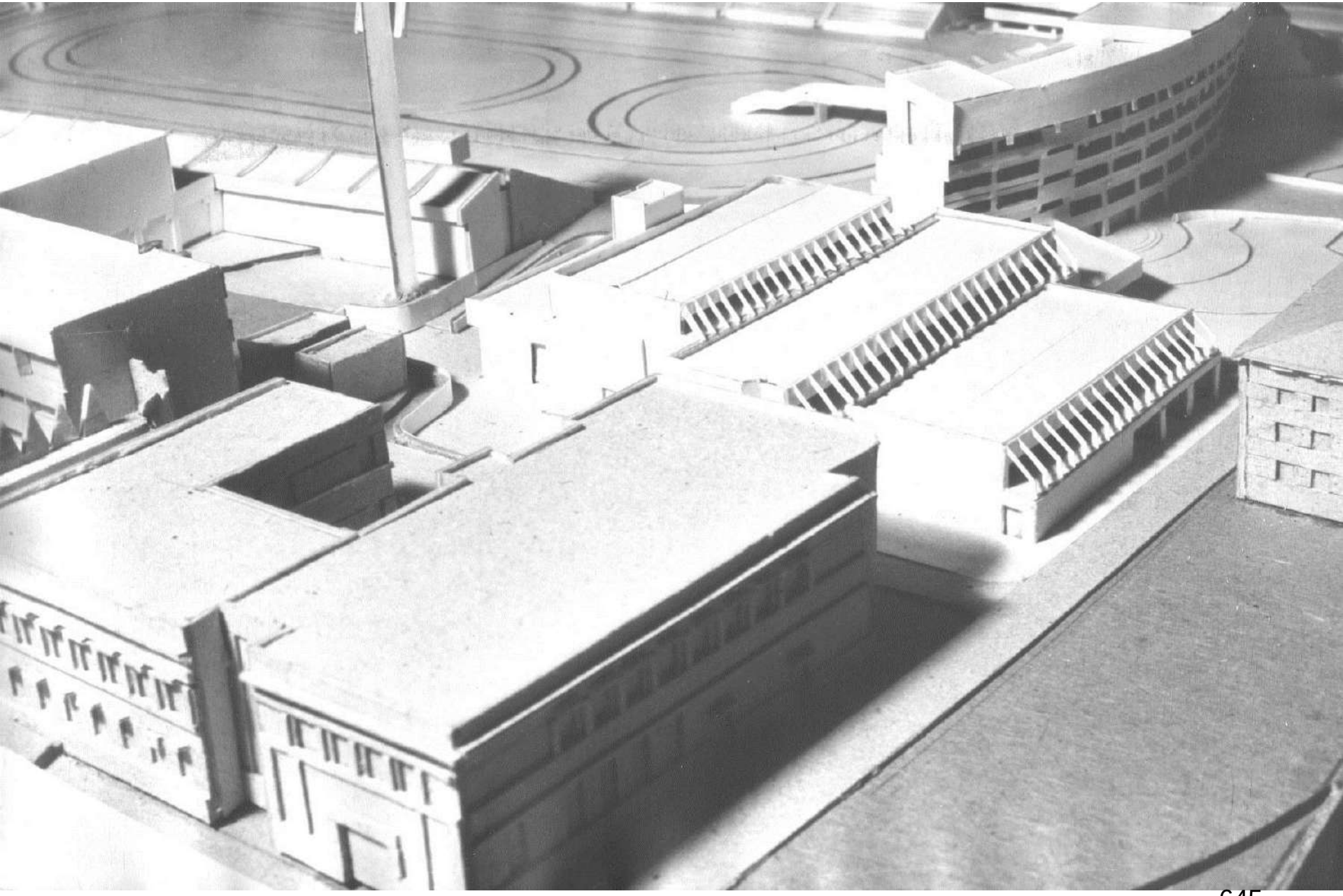
Skating track plan 400 m long and marking
A - internal competitive track (width at least 4 m);
B - external competitive track (width at least 4 m)

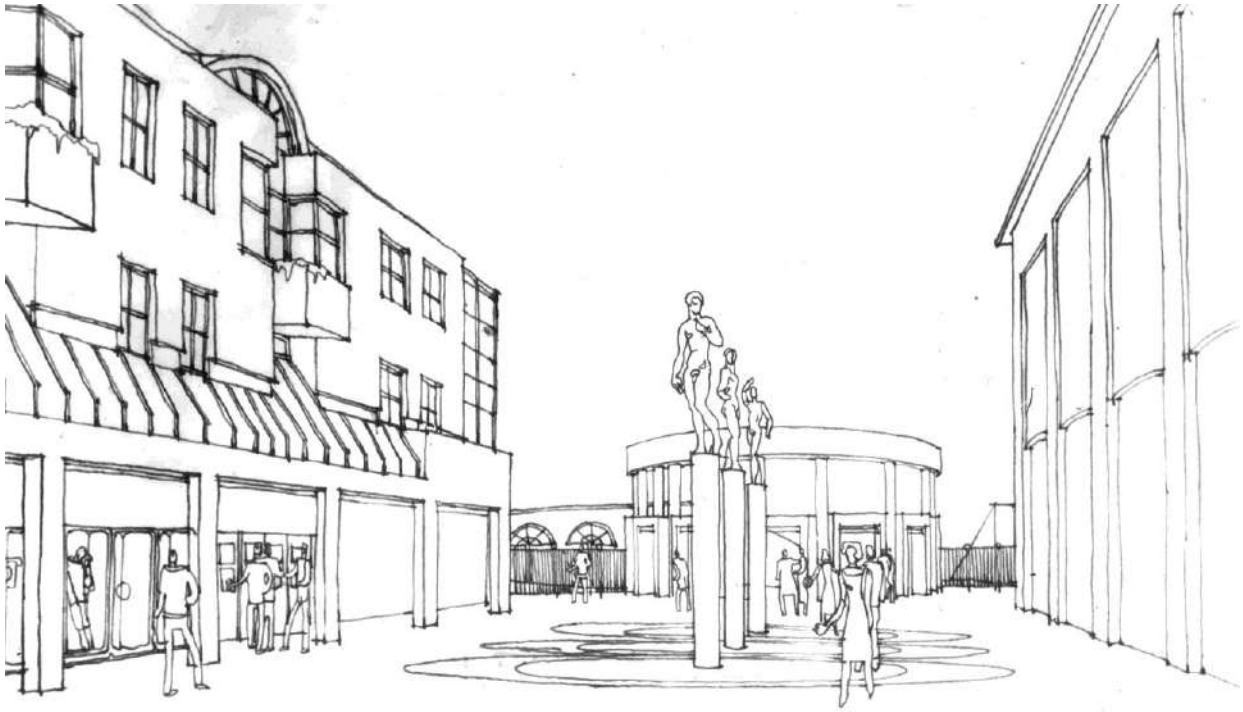












URBAN PLANNING REQUIREMENTS FOR MASS TYPES OF SPORT

Facilities for sport are usually located as part of recreational areas of cities and settlements. The placement of buildings and structures of mass types of sport in recreation areas should be carried out taking into account the general functional planning structure of the territory, its landscape characteristics, optimal accessibility of individual zones and structures from public transport stops.

Mass types of fitness institutions belong to the system of sports services for the population. The network of mass types of sport is formed in residential areas of the city and includes institutions of local (micro district) and district levels.

Services for the daily and periodic recreation activities of the population of various socio-demographic categories.

It is recommended to allocate the following main zones depending on the composition of the structures when designing district sports and recreation centers of a residential area, departments of children's and youth sports schools, sports clubs in separate areas:

- area of covered structures;
- area of open flat structures;
- economic zone;
- recreation area.

Sports facilities of the public network, as a rule, are recommended to be combined with sports facilities educational schools and other educational institutions, recreation and cultural institutions with a possible reduction in territory. At integration of sports and recreation institutions with institutions of other areas of service, including general education schools, the area of the institution should be designed taking into account trezoning requirements of the integrated institutions.

Indoor sports facilities include:

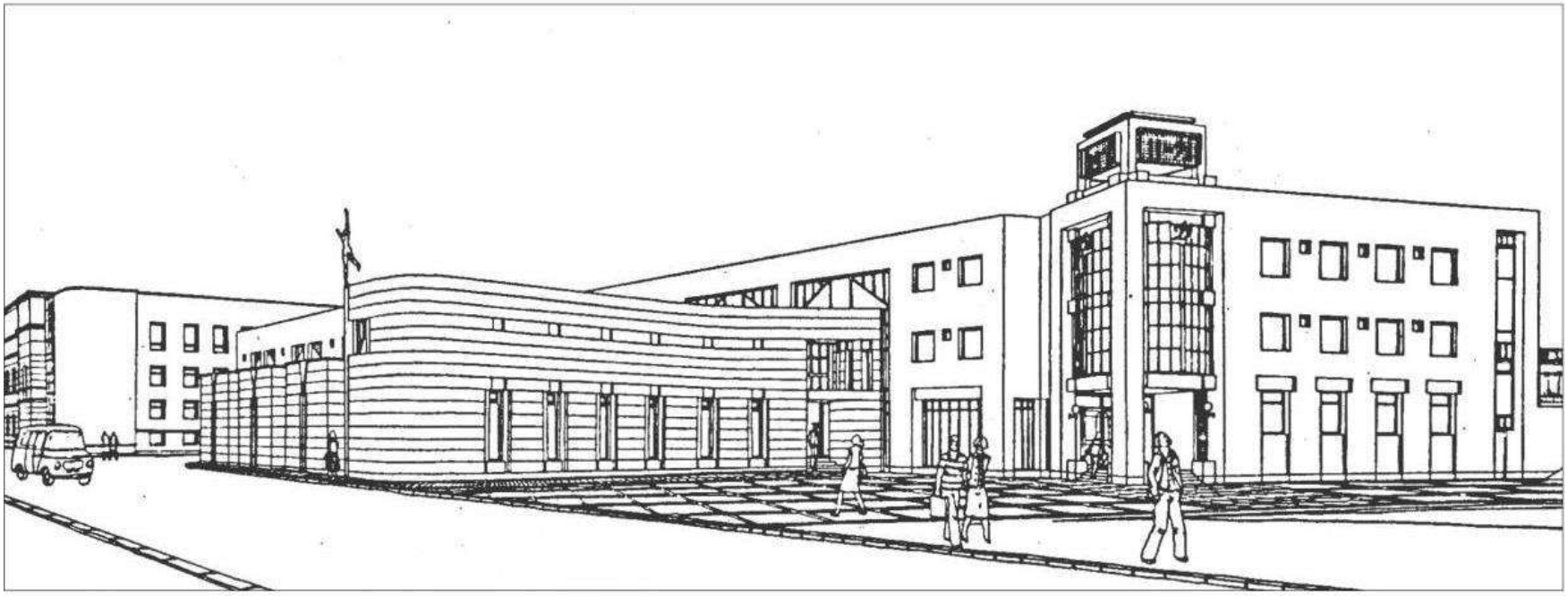
- sports halls (without seats for spectators) and sports buildings;
- indoor tennis courts;
- arena;
- indoor pools;
- skating rinks and sports arenas;
- sports palaces;
- indoor stadiums;
- shooting ranges.

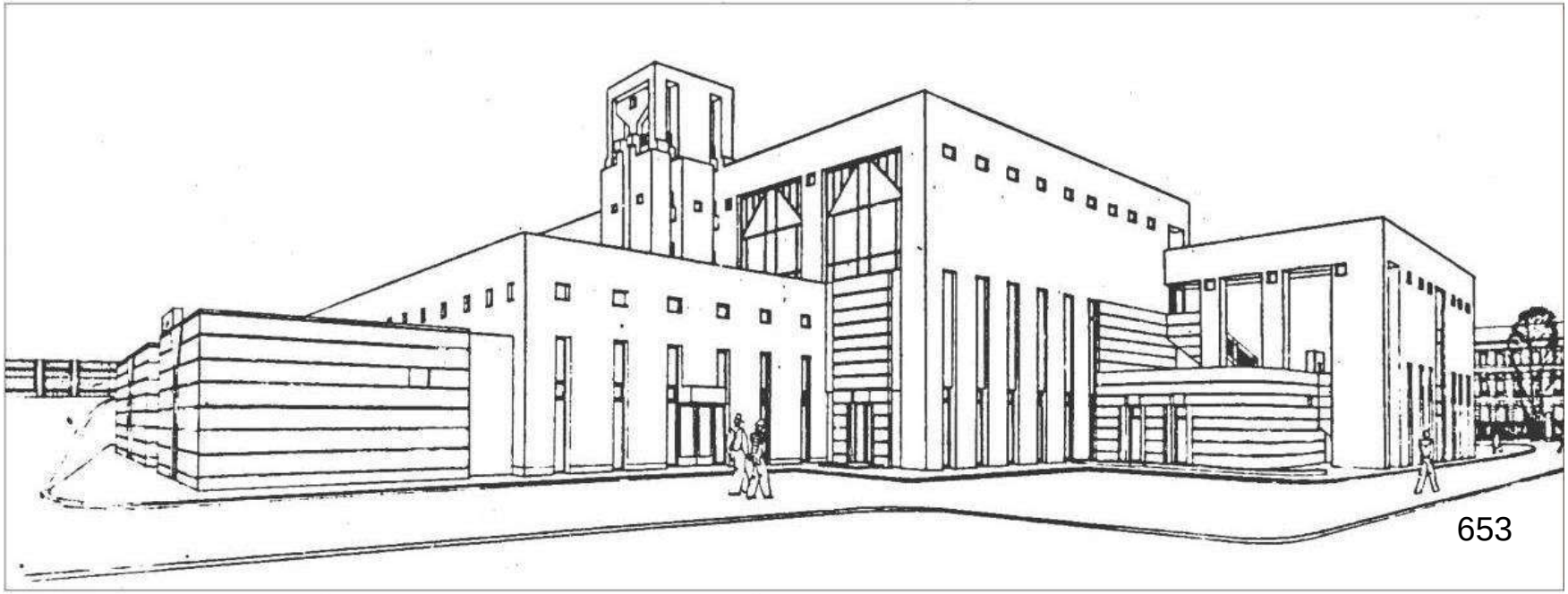
The mass types of sports and recreation institutions include:

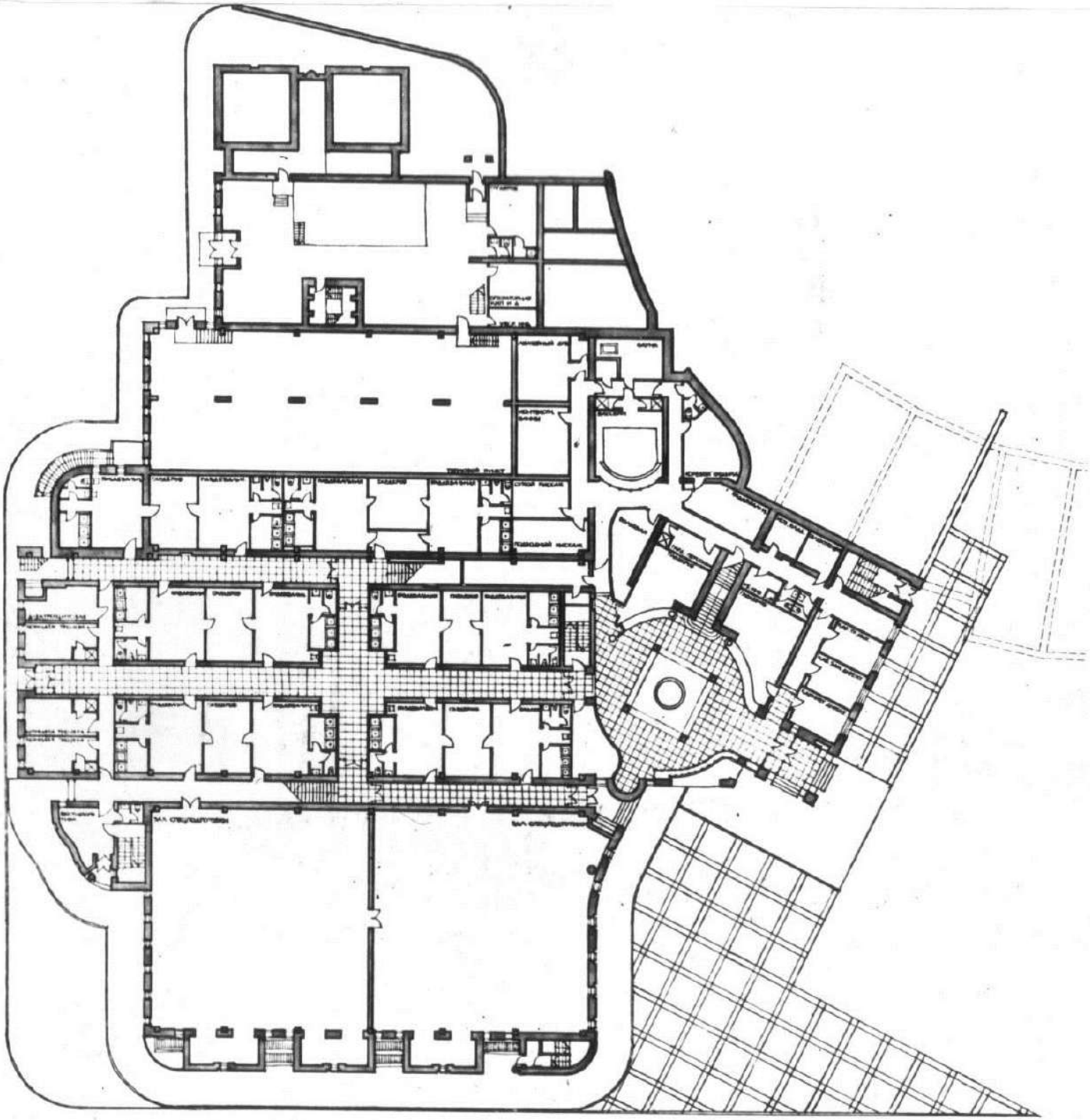
- structures close to housing, fitness clubs of micro districts, departments of children's and youth sports schools;

- physical education and recreation centers of residential areas;

- specialized amateur sports clubs.







Sports halls are intended for the following sports:

- acrobatics;

- gymnastics and rhythmic gymnastics;

- sports games: badminton, basketball, volleyball, tennis, table tennis;

- martial arts: boxing, wrestling, weightlifting;

- PE;

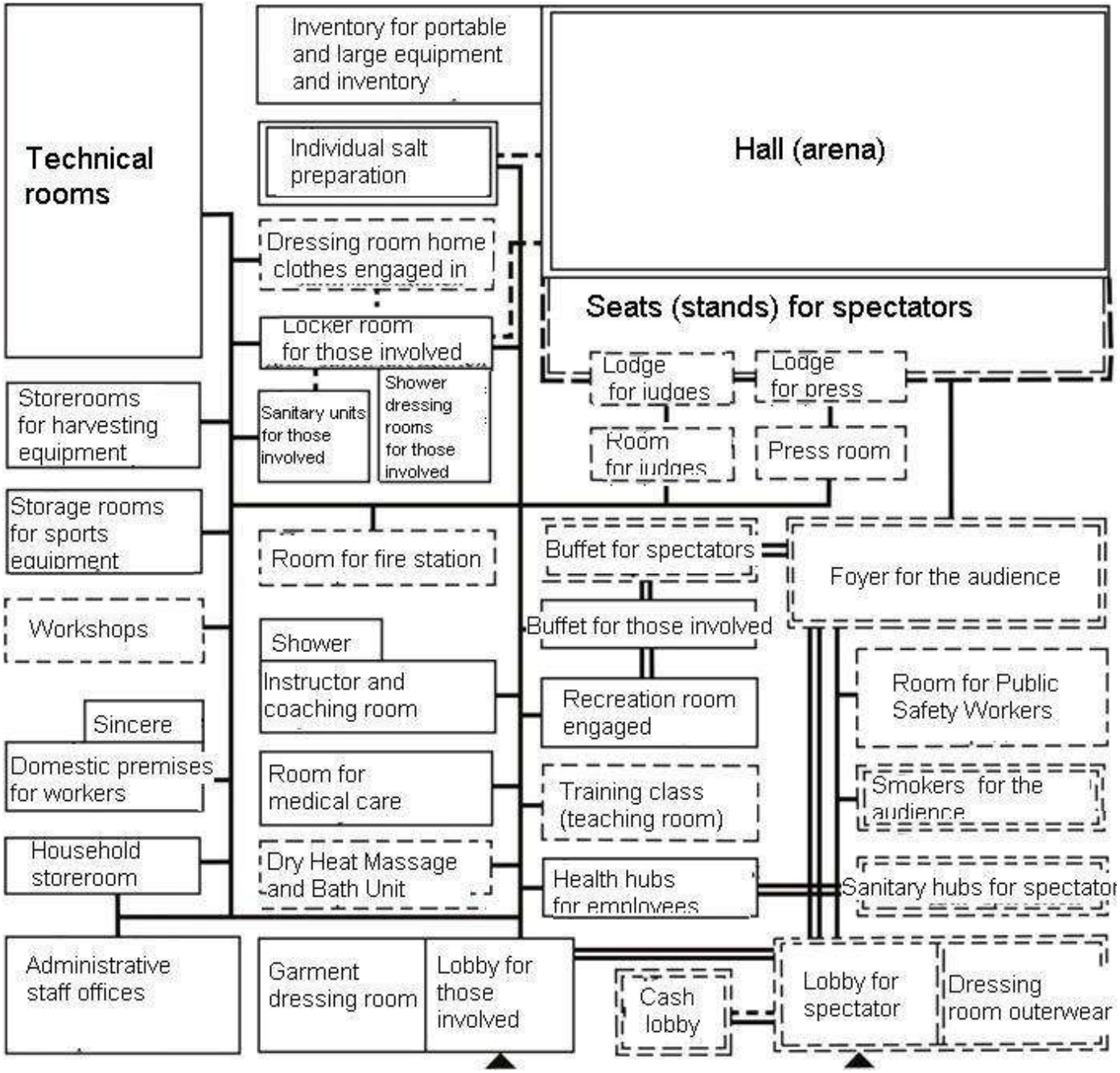
- simulator training;

- sports and sports entertainment.

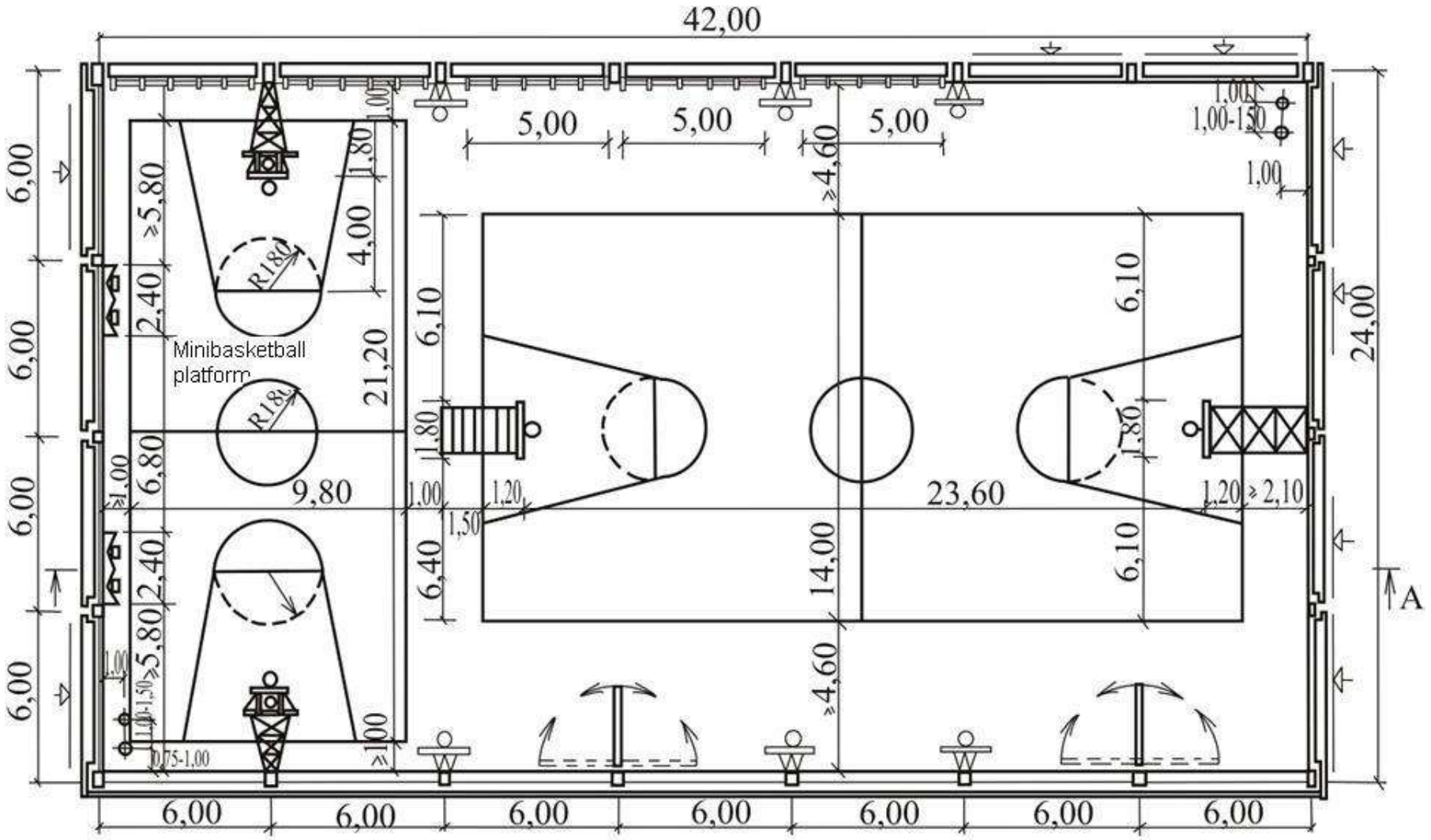
Sports halls and sports buildings include three groups of rooms:

for athletes; for the audience; auxiliary rooms.

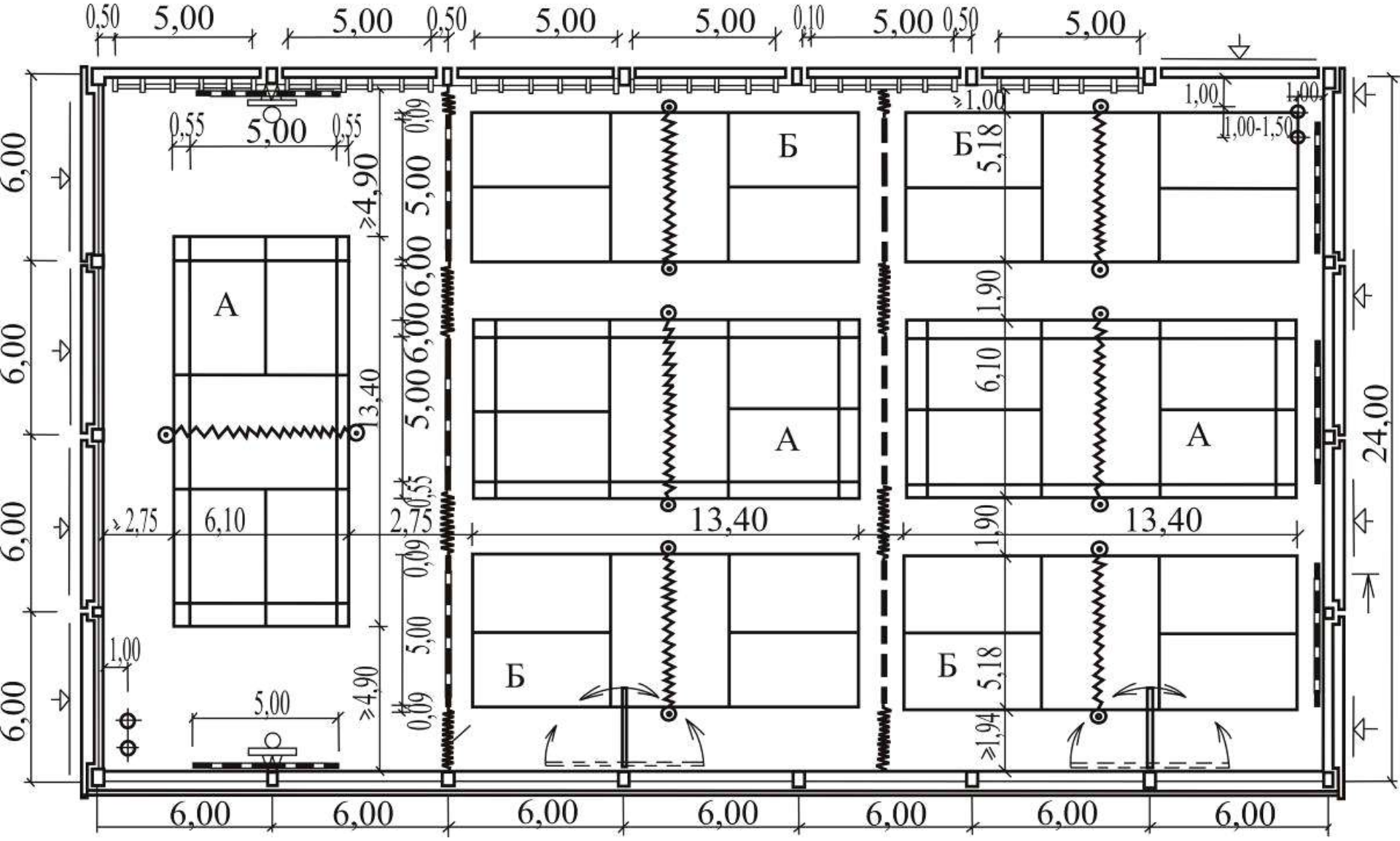
sport	length m	width m	height m
acrobatics	36	18	6
badminton	15	8	7
basketball	28	16	7
box (6x6 - ring)	18	12	4
weightlifting	18	9	4
tennis	36	18	8
fight	24	14	4
fencing	22	14	4
volleyball	24	15	8
rhythmic gymnastics	22	15	7



Interconnection of the main and sports facilities



A sport game hall for volleyball

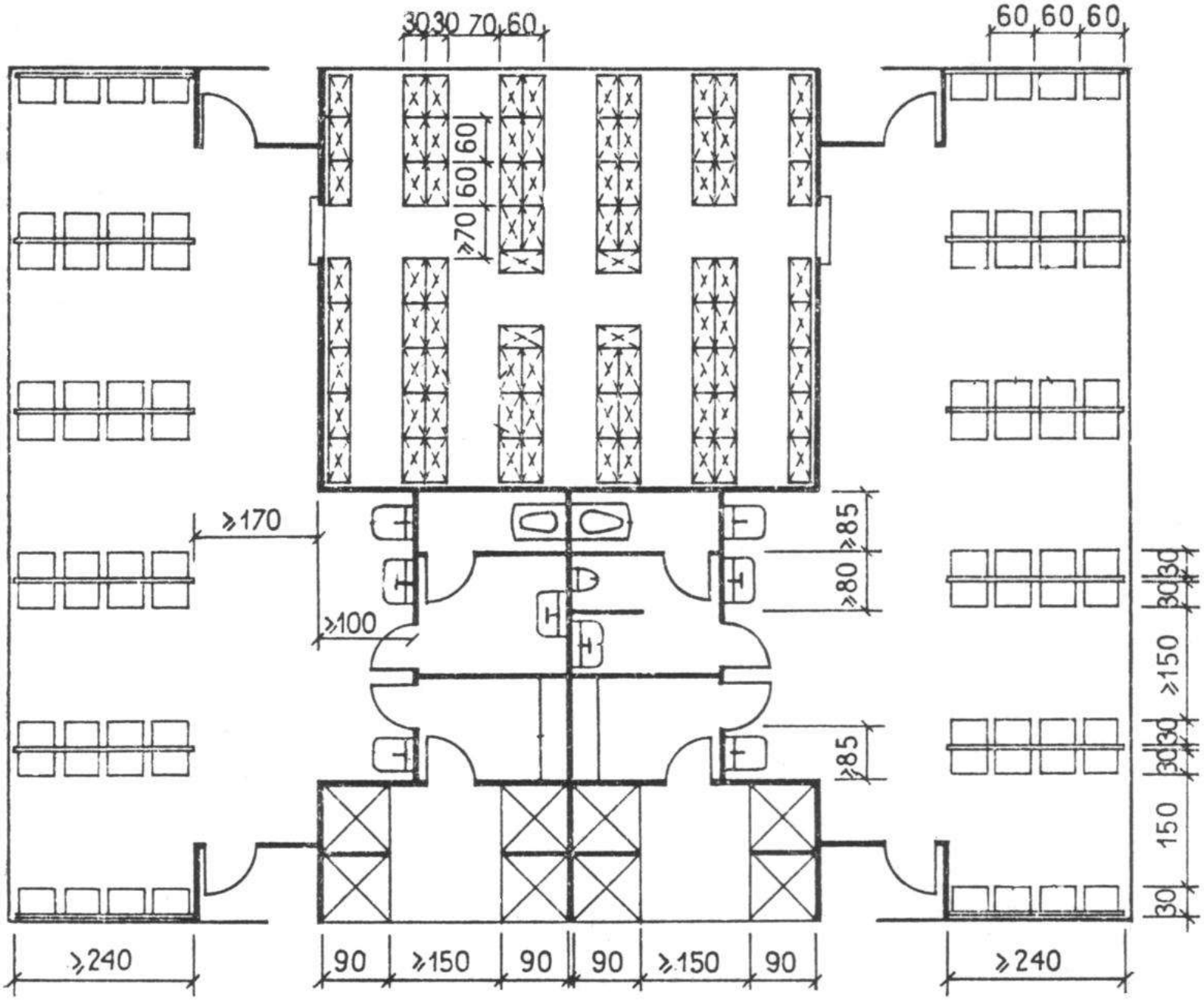


Sports hall for badminton:
A - a playground for a pair or single game; B - a playground only for single game

Facility premises for training include:

- lobby with cloak room;
- showers and sanitary units;
- inventory;
- coaching;
- administrative premises.

Often, the facility premises include rehabilitation rooms, medical centers, methodological rooms, household rooms for staff, recreation rooms, rental points.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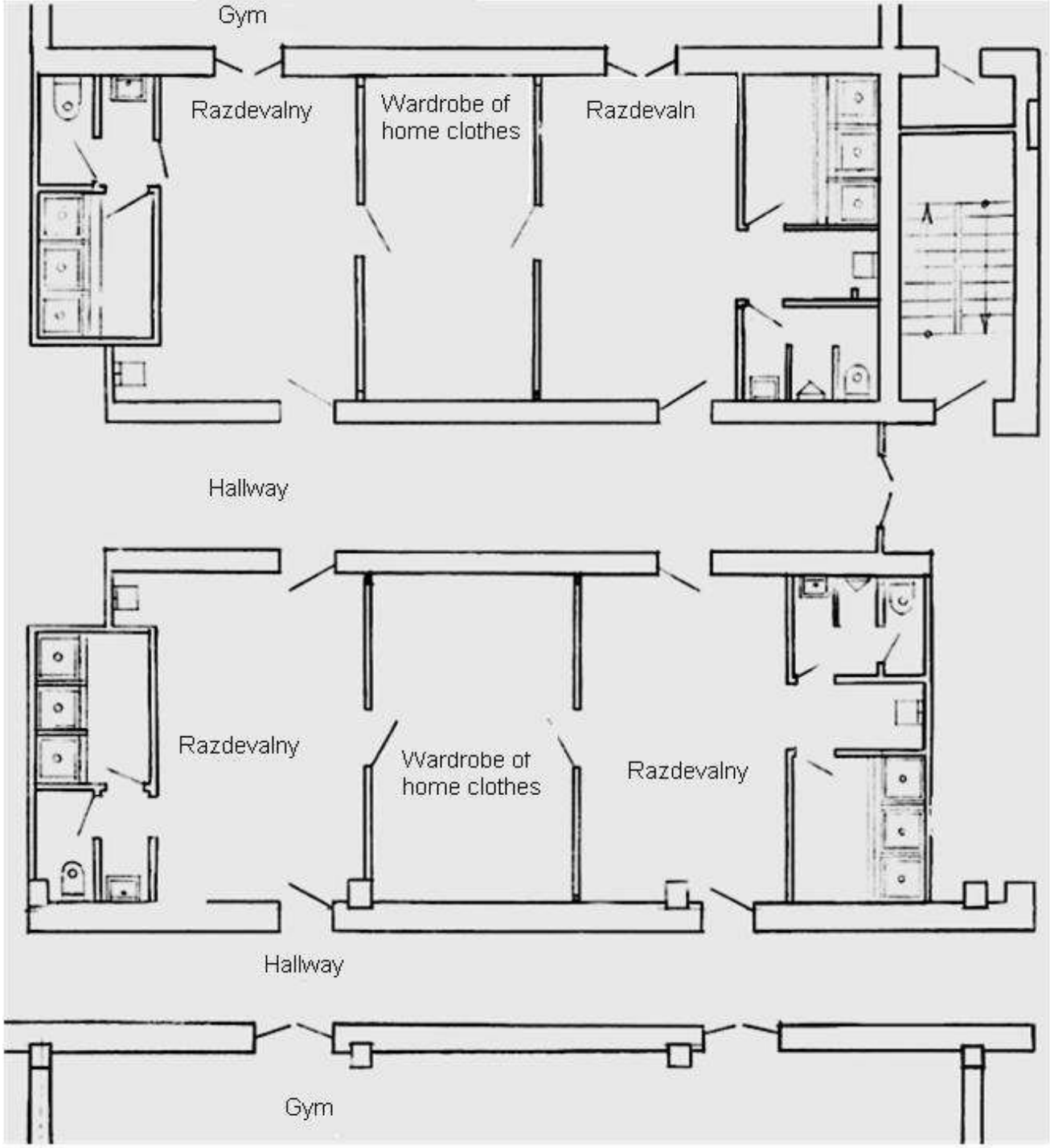

Gym
Razdevalny
Wardrobe of
home clothes
Razdevaln
Hallway
Razdevalny
Wardrobe of
home clothes
Razdevalny
Hallway
Gym

Undressing rooms for workers should be provided separately for men and women. With the storage of household clothes in cabinets placed directly in the room of the garment or in a separate room. The common garment room is located adjacent to the undressing room. The ratio of men to women in employment is 1:1.
In facilities designed for competitions in team sports (including universal facilities), at least four team should undressing rooms be provided without division into men's and women's.

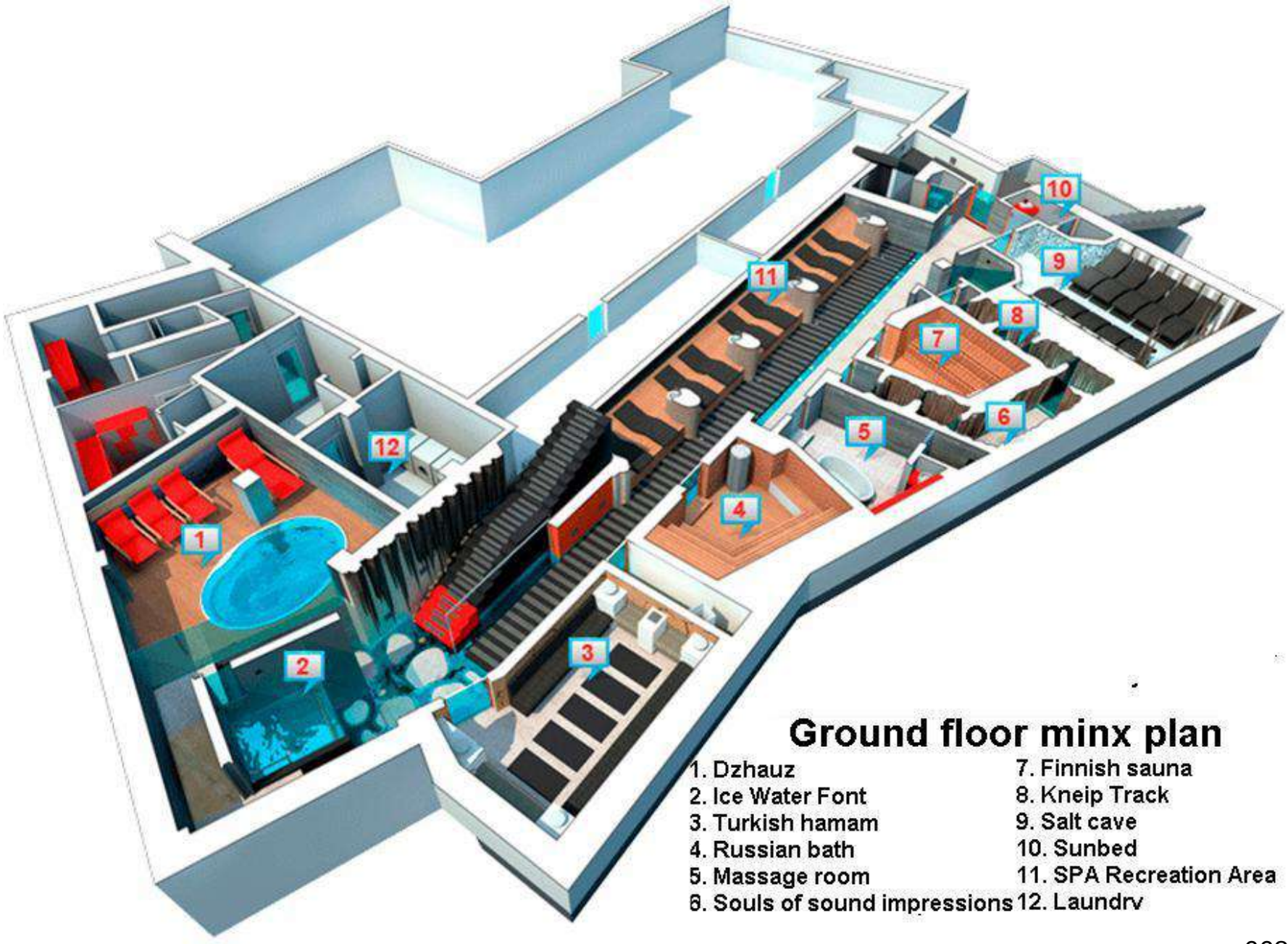
Undress rooms for athletes should be connected to sports halls directly or through a corridor intended only for this connection.

The undress unit at the gym includes:

- room for changing clothes - 2 m2 per person engaged;
- wardrobe for household clothing storage - 0.4-0.78 m2 per person engaged;
- showers - 1 net for 7 engaged per shift;
- Sanitary units - 1 toilet for 30 women workers; 1 toilet and 1 urinal for 50 men engaged in shifting;
- tambour lock with foot bath - 1 bath for 20 engaged per shift, area for 1 bath - 1 × 0.85 m2.

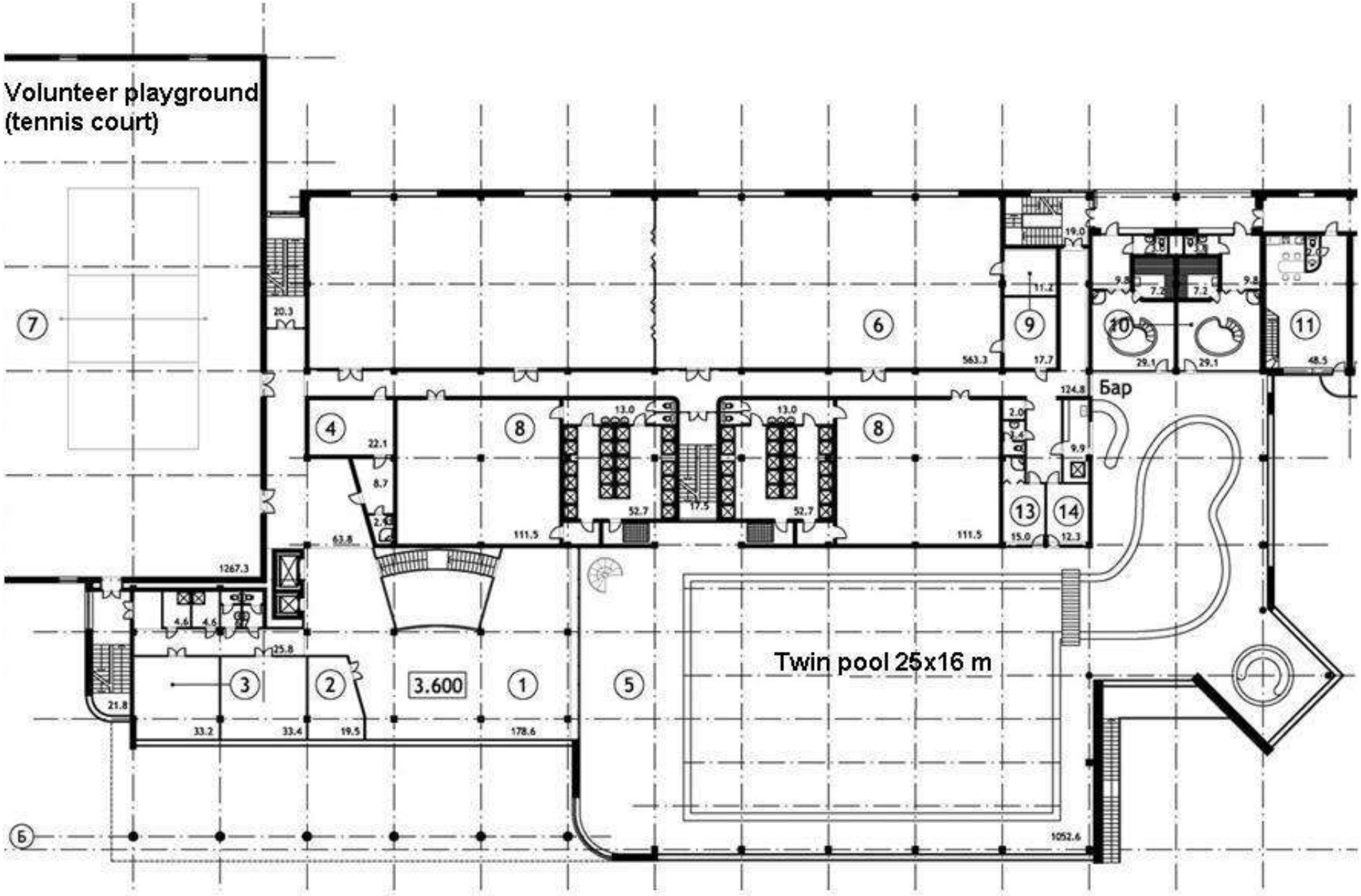
Showers should directly communicate with undress rooms, showers for instructors - with a room of instructors, which are designed at 2.5 m2 per place, but at least 9 m2 each.
The height of the facility rooms (from floor to ceiling) is as a rule, equal to 3.0 m. When placing facility rooms in the sub-basin space, the height of the rooms can be reduced (in purity, to the bottom of the protruding structures): in undressing rooms of upper and home clothes (behind the barrier) - not more than 2.1 m; in the premises for referees and the press - not more than 2.4 m; in other rooms (except for the lobby) - not more than 2.7 m.

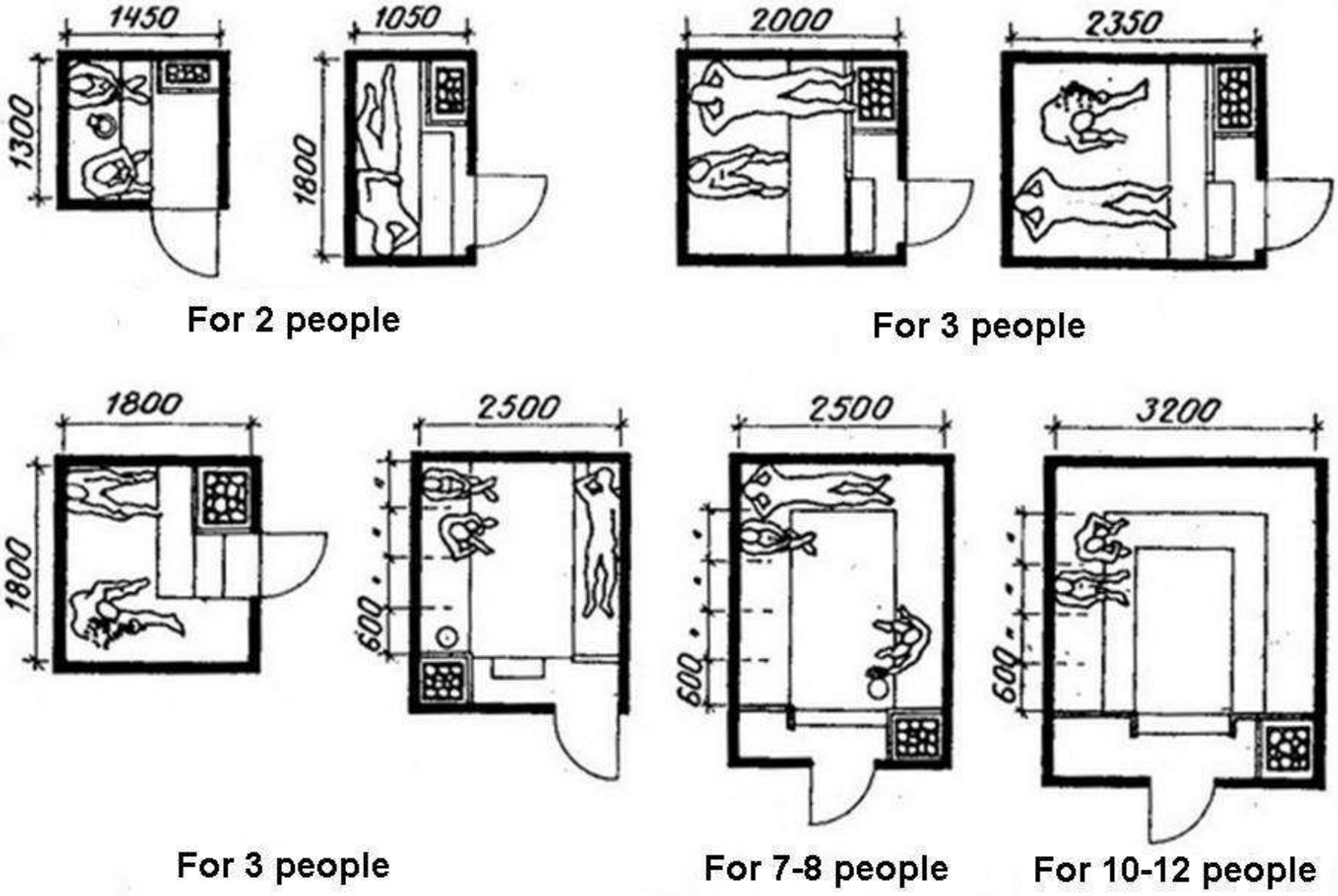

666



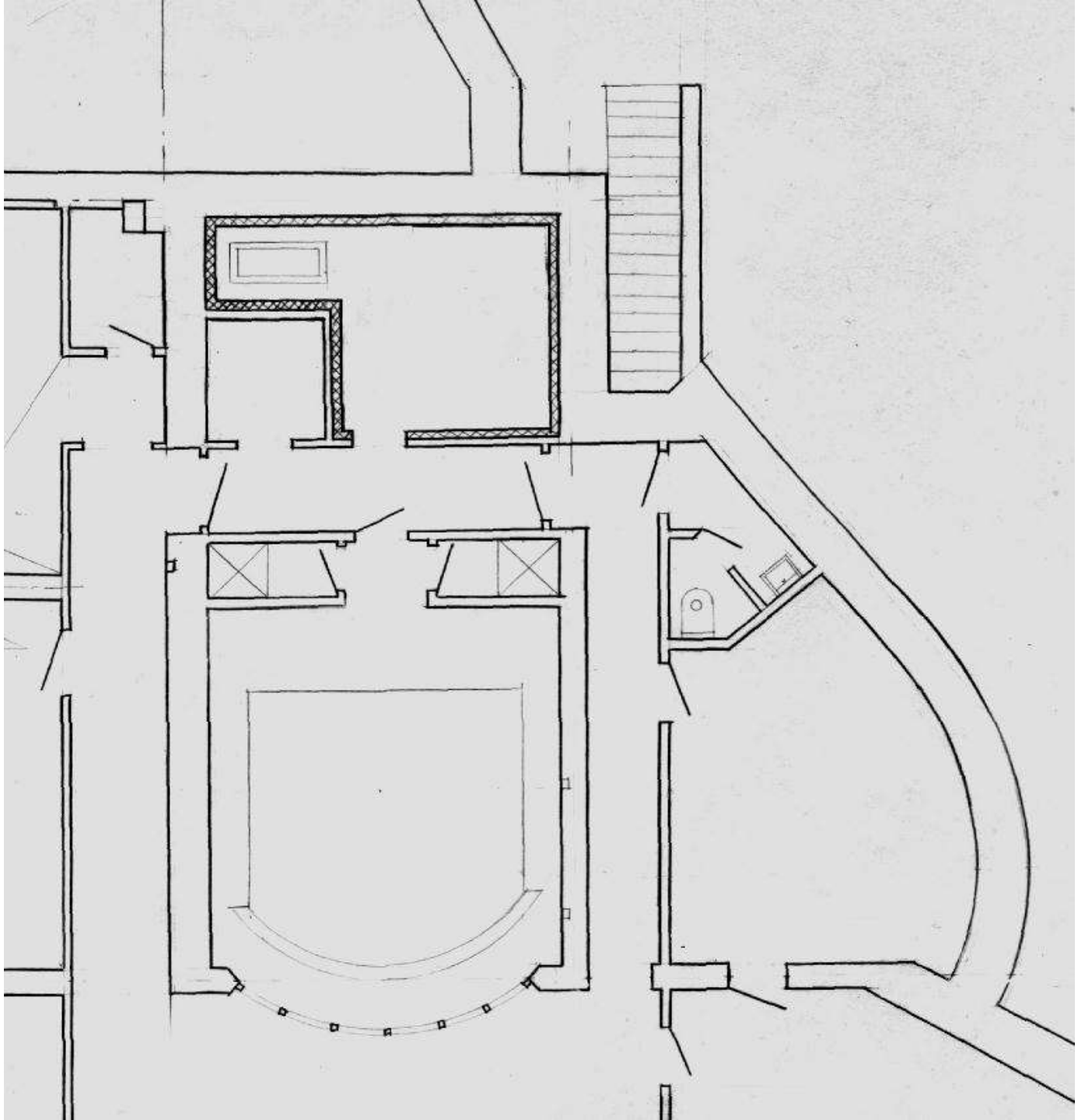
Ground floor minx plan

1. Dzhauz
2. Ice Water Font
3. Turkish hamam
4. Russian bath
5. Massage room
6. Souls of sound impressions
7. Finnish sauna
8. Kneip Track
9. Salt cave
10. Sunbed
11. SPA Recreation Area
12. Laundry


Volunteer playground
(tennis court)
Бар
Twin pool 25x16 m
3.600

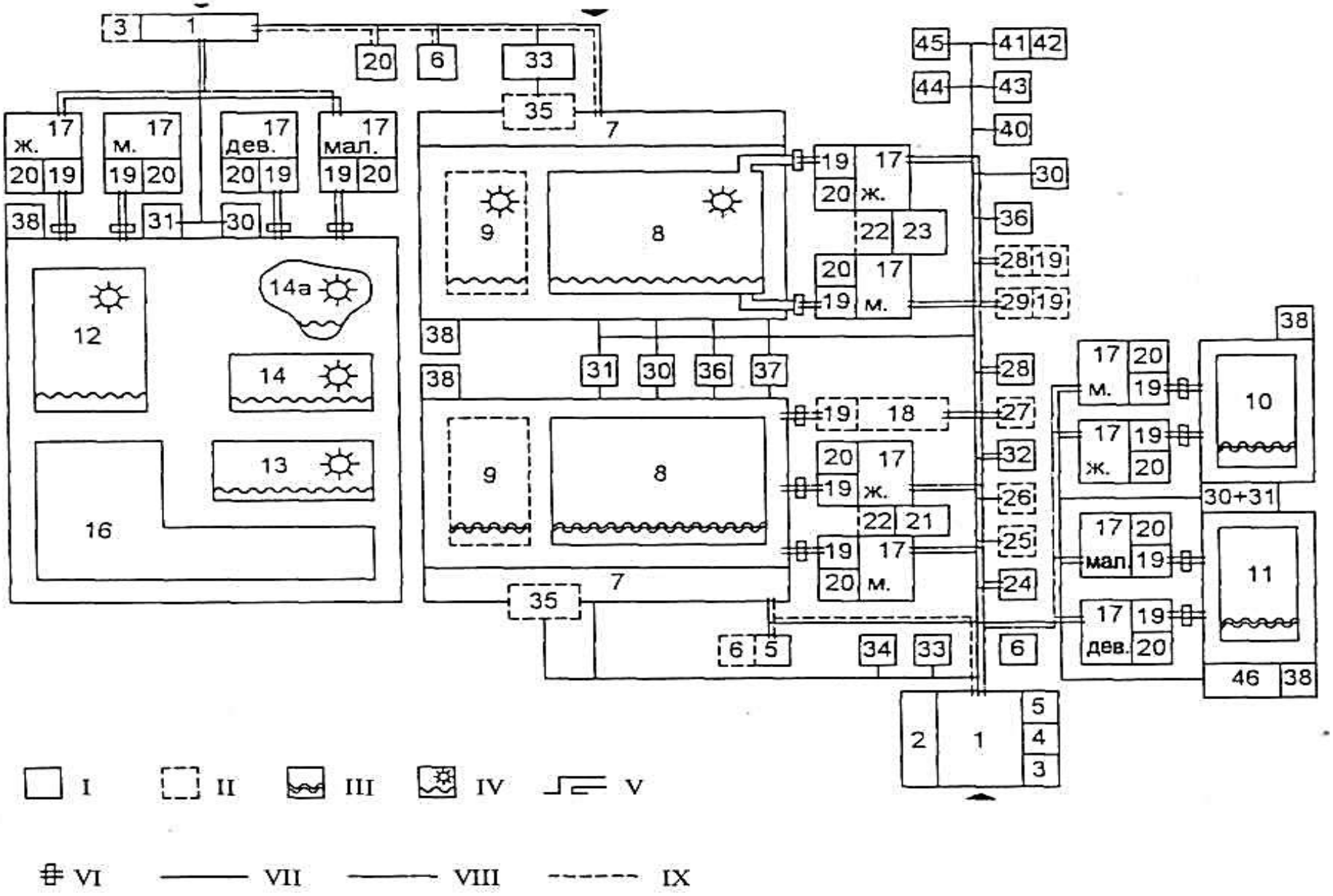


Examples of sauna baths



SWIMMING POOLS

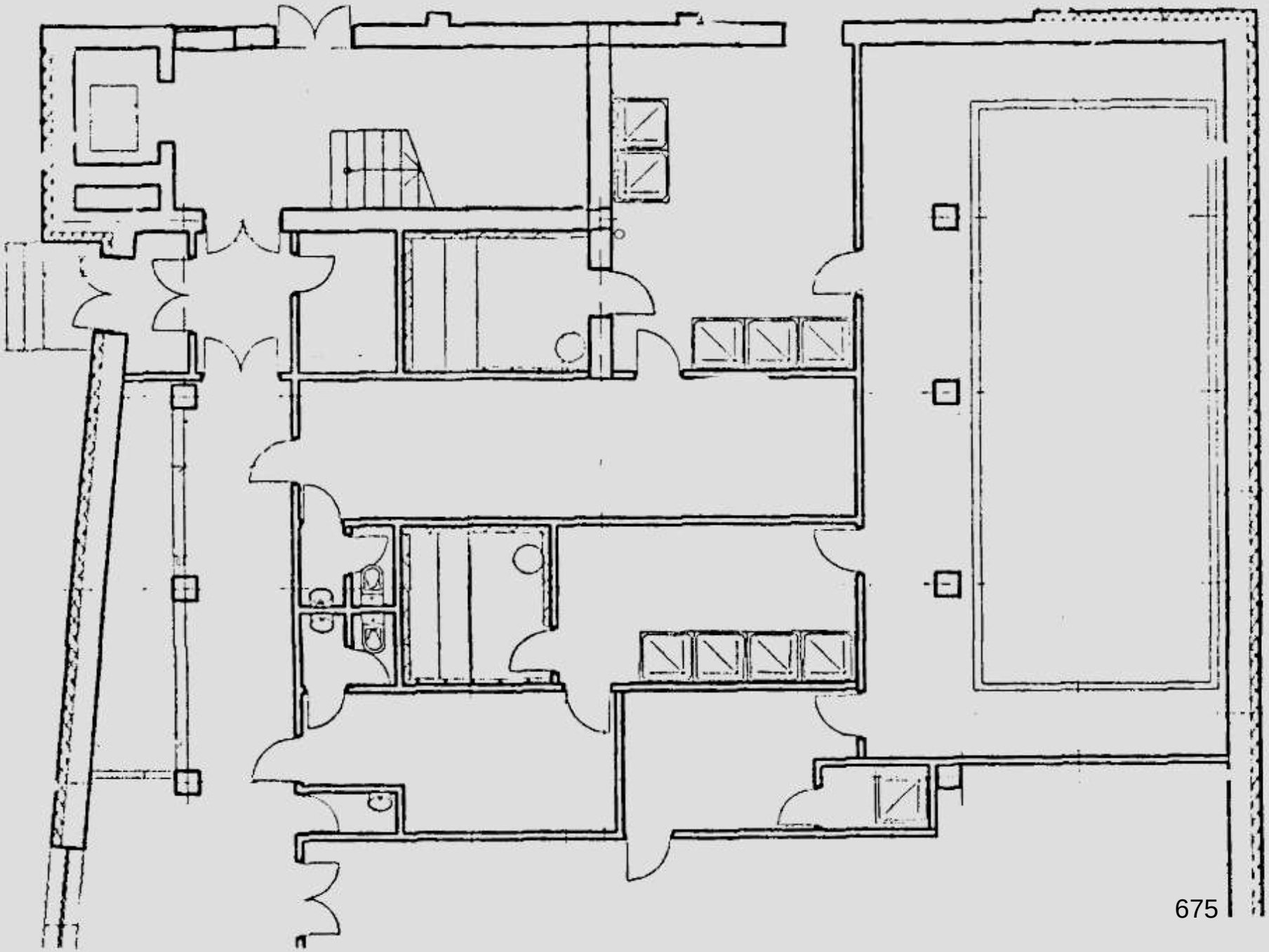
By purpose, swimming pools are divided into the following types:
- splash - for access to water for children of preschool age;
Children to teach swimming to small children and teenagers;
- Educational - for swimming education for older children and adults, for small children and teenagers; and for health swimming for older people;
- swimming pools designed for training athletes and trainees;
- diving pools;
- universal training pools equipped for swimming, water polo, diving and designed for swimming training, recreational activities, training, as well as for local competitions without spectators or in the presence of a limited number of spectators (up to 600 places in indoor and up to 1200 places in outdoor facilities);
- Universal demonstration pools designed for large competitions with more than 600 seats in indoor and 1200 seats in outdoor pools.



I - rooms and structures of the main sport hall; II - additional facilities and structures;
III – indoor basin; IV - open basin; V - swimming out; VI - passing foot shower;
VII - functional linkage; VIII - the movement of those involved; IX - movement of spectators

Functional diagram of the swimming pool :

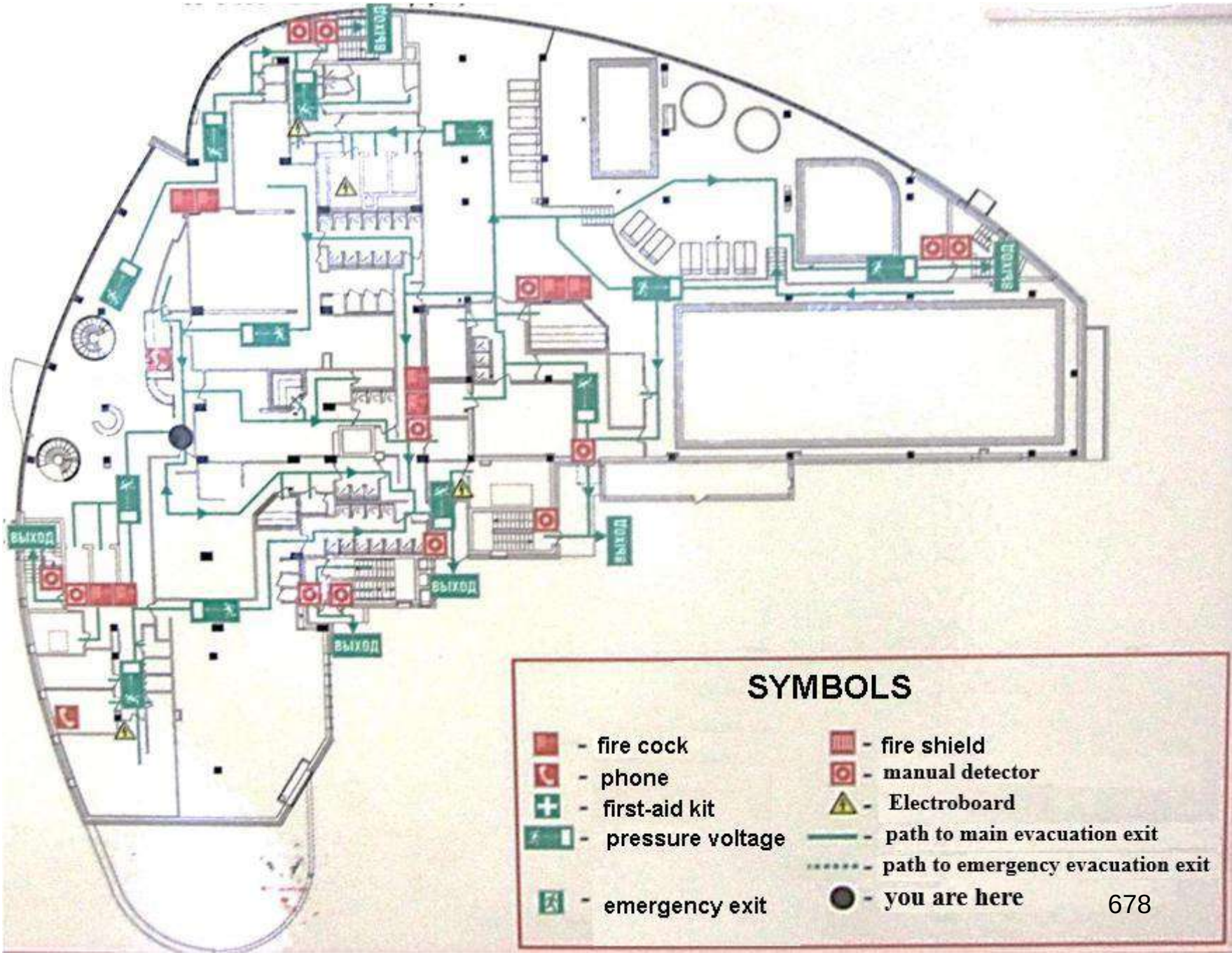
1 - lobby; 2 – cloak room; 3 - cash desk; 4 - registration; 5 - foyer; 6 - buffet; 7 - places for spectators; 8 - swimming basin and water polo; 9 - jump basin; 10 - training basin; 11 - children's basin; 12 - basin of recreational swimming for adults and older children; 13 - basin for teenagers; 14 - basin for small children; 14a - a splash basin; 15 - recreation area; 16 - playgrounds; 17 – undressing room; 18 - team undressing room for water polo players; 19 - showers; 20 - sanitary units; 21 - preparatory training room; 22 - undressing rooms for home clothes; 23 - preparatory training platform; 24 - doctor's office; 25 - coaching; 26 - training part; 27 - training class; 28 - methodological office; 29 - sauna; 30 - massage; 31 – instructor’s on duty room; 32 - room of the nurse on duty; 33 - hall; 34 - administrative and office premises; 35 - press center; 36 – reporters’ room; 37 - radio node; 38 - domestic premises for workers; 39 - laboratory of water quality analysis; 40 - inventory; 41 - ventilation chamber; 42 - electric shield; 43 - pump and filter; 44 - bactericidal water treatment rooms; 45 - boiler; 46 - workshop



Bath assignment	Bath size, m		Depth of water in the deep part of the bath, m	Throughput ability baths, man in change
	length *	width		
Sports swimming	50	25**	Based on the slope of the bottom, accepted not less than 0.01, but not more than 0.045, for Olympic Games and World Championships 2.0 m depth (minimum)	120
	50	21		96
	25	16		48
	25	11		32
	25	8,5		24
water polo	33,33	21	1,8	25 (80 for other purposes)
diving	22,4	10,6	3,8-4,5	12
	15	12,5		

* Deviation in the length of baths (including universal baths) is allowed only in the direction of increase in the range of up to 0.03 m in bathrooms 50 m long, 0.02 m in bathrooms 33.33 m long, 0.015 m in bathrooms 25 m long.

* * Accepted in demonstration pools or with sufficient justification to meet the need for mass recreational swimming.


ВЫХОД
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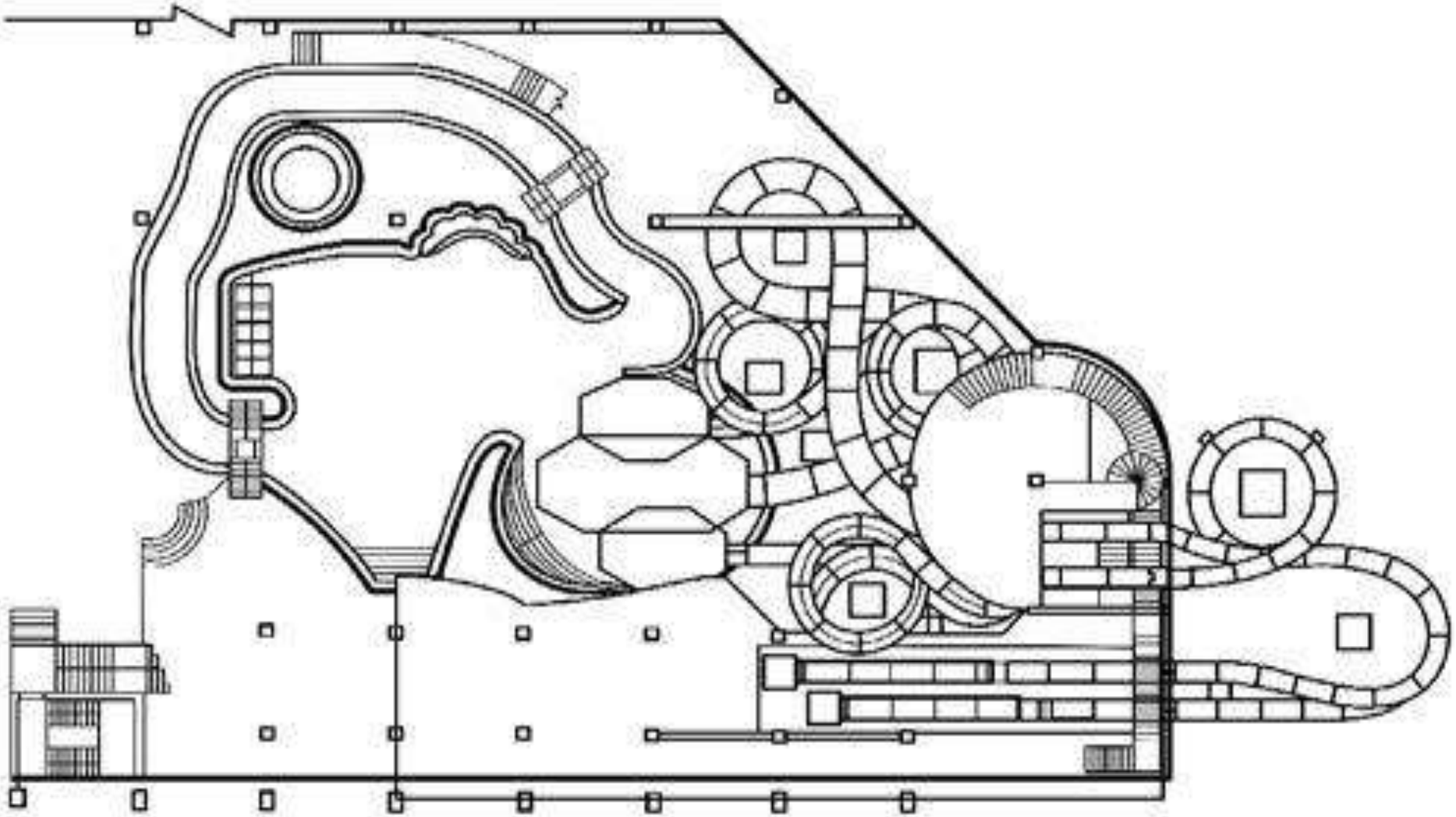
ВЫХОД
SYMBOLS
- fire cock
- phone
- first-aid kit
- pressure voltage
- emergency exit
- fire shield
- manual detector
- Electroboard
- path to main evacuation exit
- path to emergency evacuation exit
- you are here

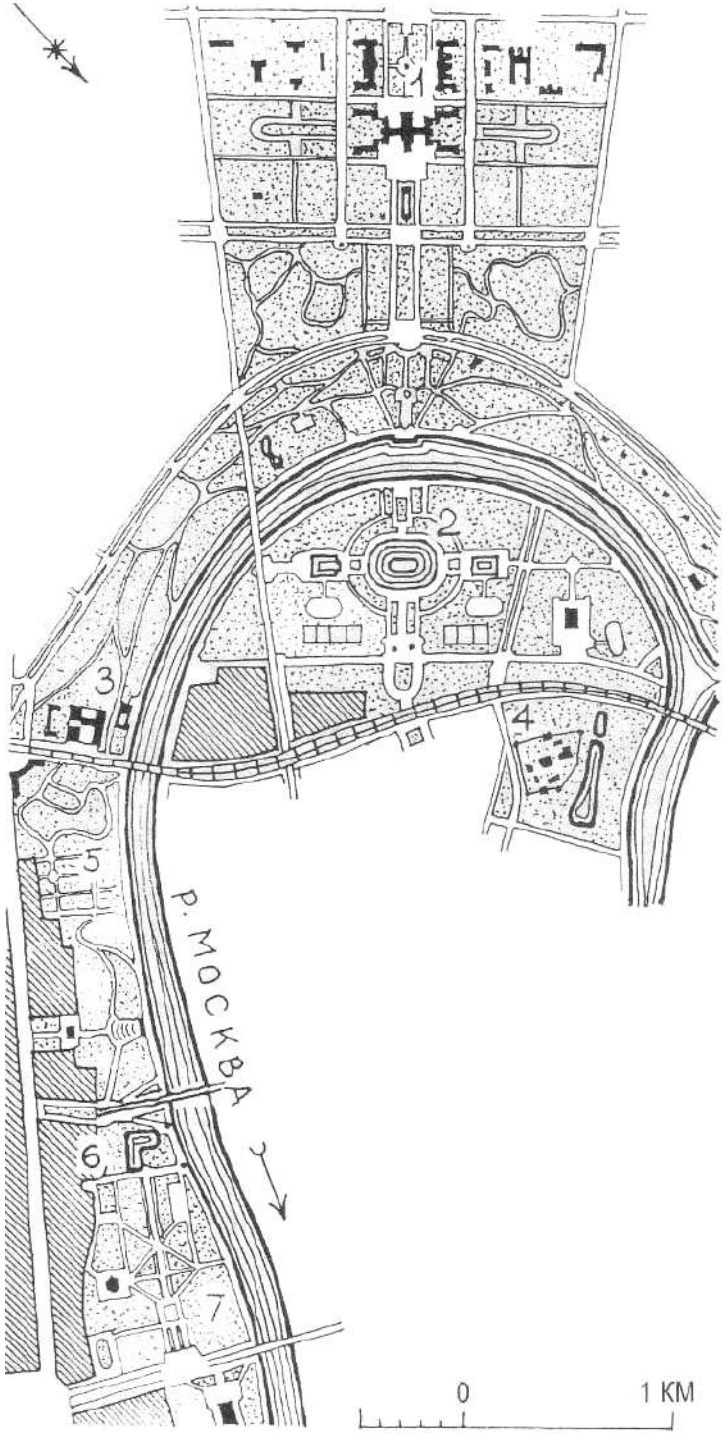

ГРУЗОБЛОЧНЫЕ
ТРЕНАЖЕРЫ
РАЗДЕВАЛКИ
РЕСЕПШН
GOLD'S FITNESS
Ждёте ребёнка?
Это прекрасно!


55-74
165
166



Water park "Miracle Island" in Kursk, LLC "AquaMasterInge"

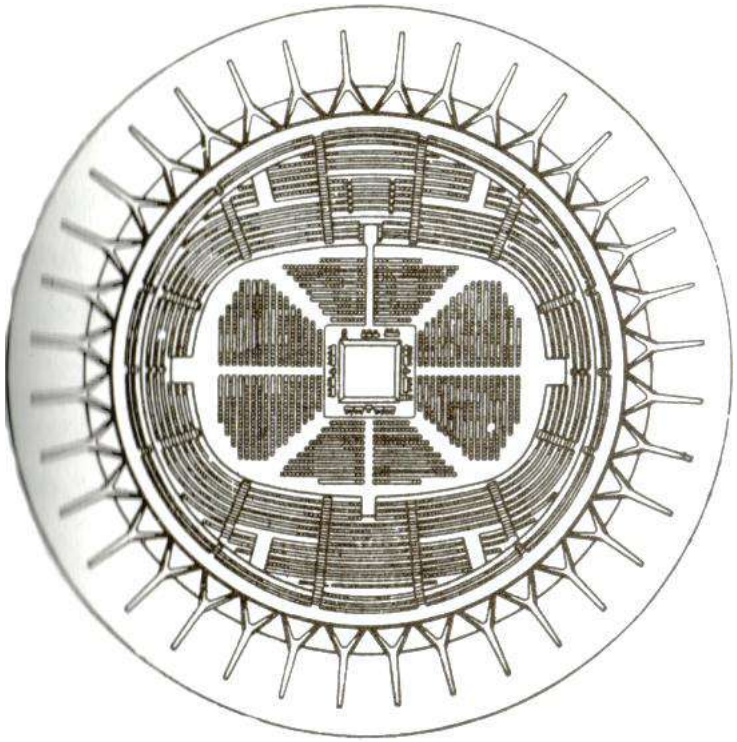

КАРВАН
РОССИЯ ВЕНГРИЯ
31 АВГУСТА
19:00
БАСКЕТ-ХОЛЛ
Rezidenz Plaza
Сеть салонов элитной мебели
DOMO
38-38-38
Баскет-холл



The multifunctional system of green spaces in the south-west of the central district of Moscow, which developed by the 1960s.

In front of the main building of the University - decorative stalls.
On the slopes of the Vorobyov (Leninsky) gori - walking areas with sports facilities.
Sports zone - in Luzhniki. Between the Moscow River and Leninsky Prospekt - Neskychny Garden with a children's park and the Central Park of Culture and Recreation.

1 - Moscow State University;
2 - Central Stadium;
3 - new buildings of the Russian Academy of Sciences and St. Andrew's Monastery;
4 - Novodevichy Monastery;
5 - Not a bored garden;
6 - First City Hospital (formerly Goltztna) with gardens;
7 - Gorky Central Park of Culture and Recreation



WINTER SPORTS FACILITIES

Winter sports facilities include facilities for skiing, toboggan, speed skating, ice hockey, ball hockey, figure skating, biathlon, bobsleigh, skeleton, snowboard, curling.

These include ice rinks and fields:

- for speed skating;
- ice hockey;
- figure skating;
- short track;
- curling;
- ball hockey;
- mass skating.

The standard size of the rink 30 × 60 m allows you to place a field for ice hockey, figure skating on an ice pad, short track or mass skating. It is recommended to make 6 m off height to bottom of structures. The ice structure may additionally have a small ice rink of 10 × 15 m or a large-size rink of 30 × 15 m.

Structures of rinks with artificial ice are divided for training (without places for commercial spectator) and demonstration events for competition

venues and paid spectacular events. Training and demonstration rinks may be specialized or universal. Specialized skating rinks are intended for one sport. Universal rink structures are for alternate use for different types of sports (for figure skating, ice hockey, or short track, for ball hockey or mass skating, etc.). Universal sports equipment can be used not only for winter sports.

Demonstration facilities are divided into sports and demonstration rinks for sporting events only innovations and performances on ice, and multifunctional halls ice rinks for both ice, culture tour, mass and public events.

Multifunctional rink are designed universally transformable for alternating competitions innovations in various sports or cultural and spectacular or public events.

Demonstration sports facilities by number of spectators

fall into three categories:

- small ice rinks with the number of seats up to 2000 spectators;

- average ice rinks with a capacity from 2000 to 6000 spectators;

- multifunctional ice rinks with a capacity of more than

6000 spectators.

Halls of indoor skating rinks (ice rinks and fields) should be located

on the ground floor with the entry of trucks.

In convenient connection with the rink, a room should be provided

for two machines of ice care sized 9 × 6.5 m, 3.9 m high. Openings for leaving the room to ice should have a height of not less than 2.4 m and a width of not less than 3.5 m.

Skating rinks with artificial ice and speed skating tracks cams shall include all engineering and technical rooms, required for ice surface creation: compressor for freon installations; channels for diverting water into the rain channel sewage.

SOCHI. WINTER OLYMPICS 2014

Mountain cluster

SKI CENTER "ROSE FARM"

EXTREME PARK "ROSE FARM"

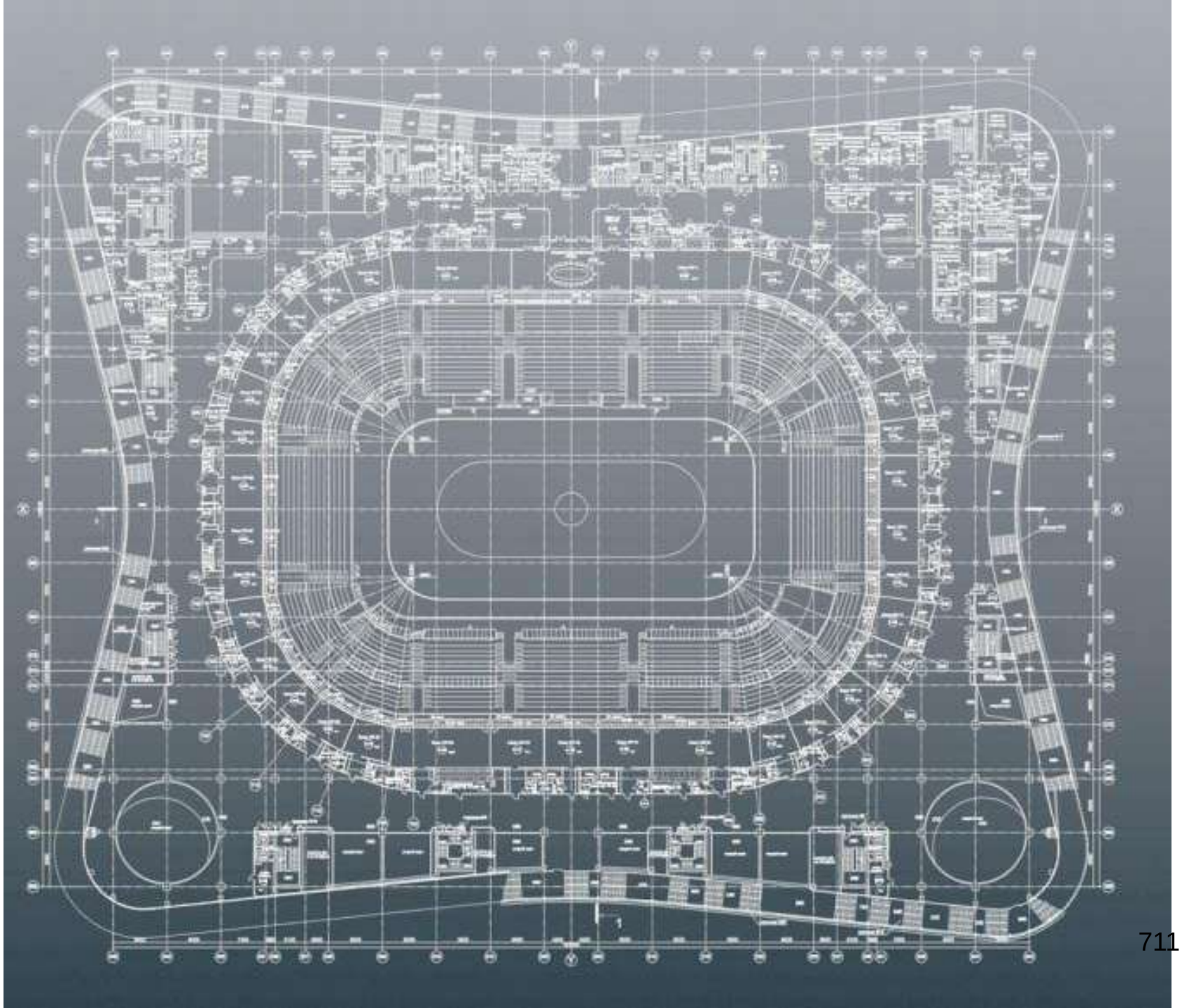
Ski jumping complex "Russian roller coaster"

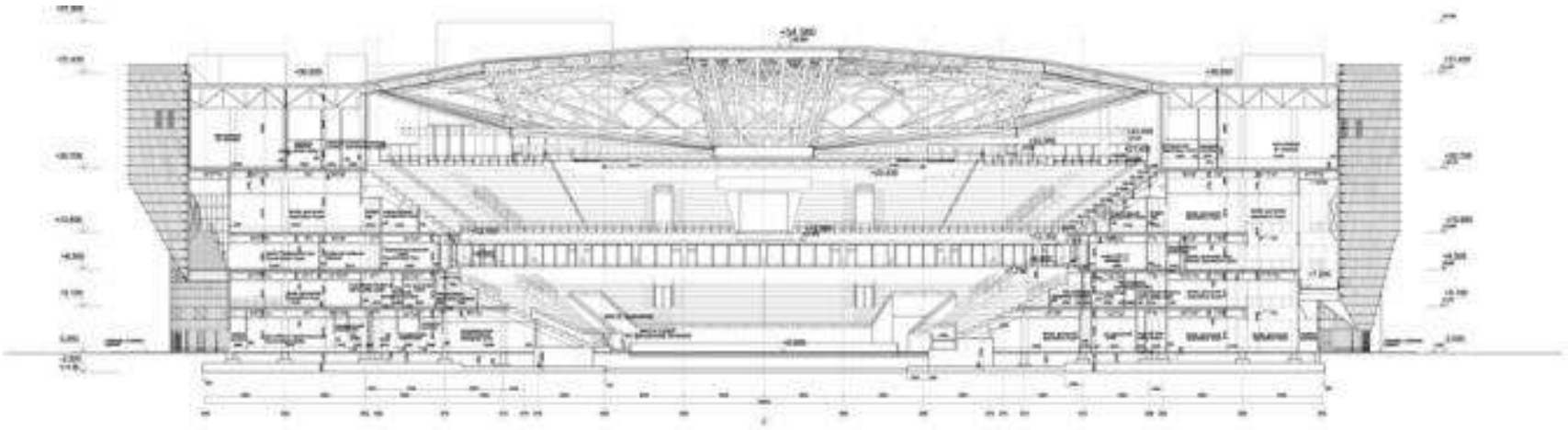
Laura Ski and Biathlon Competition Complex

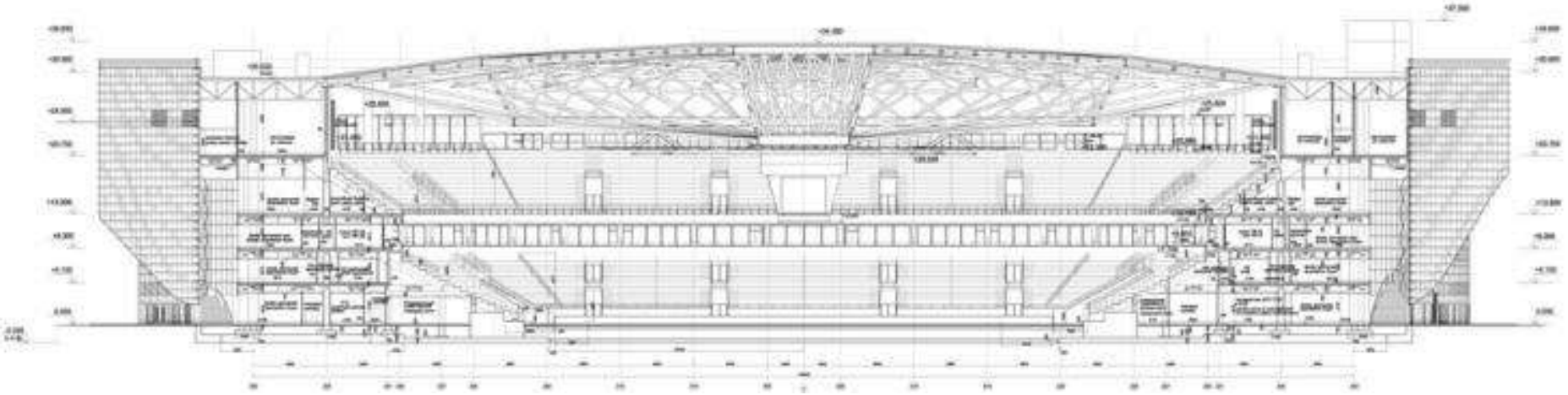
Toboggan CENTER "SANKI"


Дворец зимнего спорта
“Санки”
Winter Sports Palace "Sankey"
“Адлер-Арена”
"Adler Arena"
Керлинговый центр
“Ледяной куб”
Олимпийский стадион
“Фишт”
Omipia Stadium "Fisht"
Большой ледовый дворец
“Большой”
Big Ice Palace "Big"
Ледовая арена
“Шайба”
"Shayba" Arena

ICEBERG WINTER SPORTS PALACE

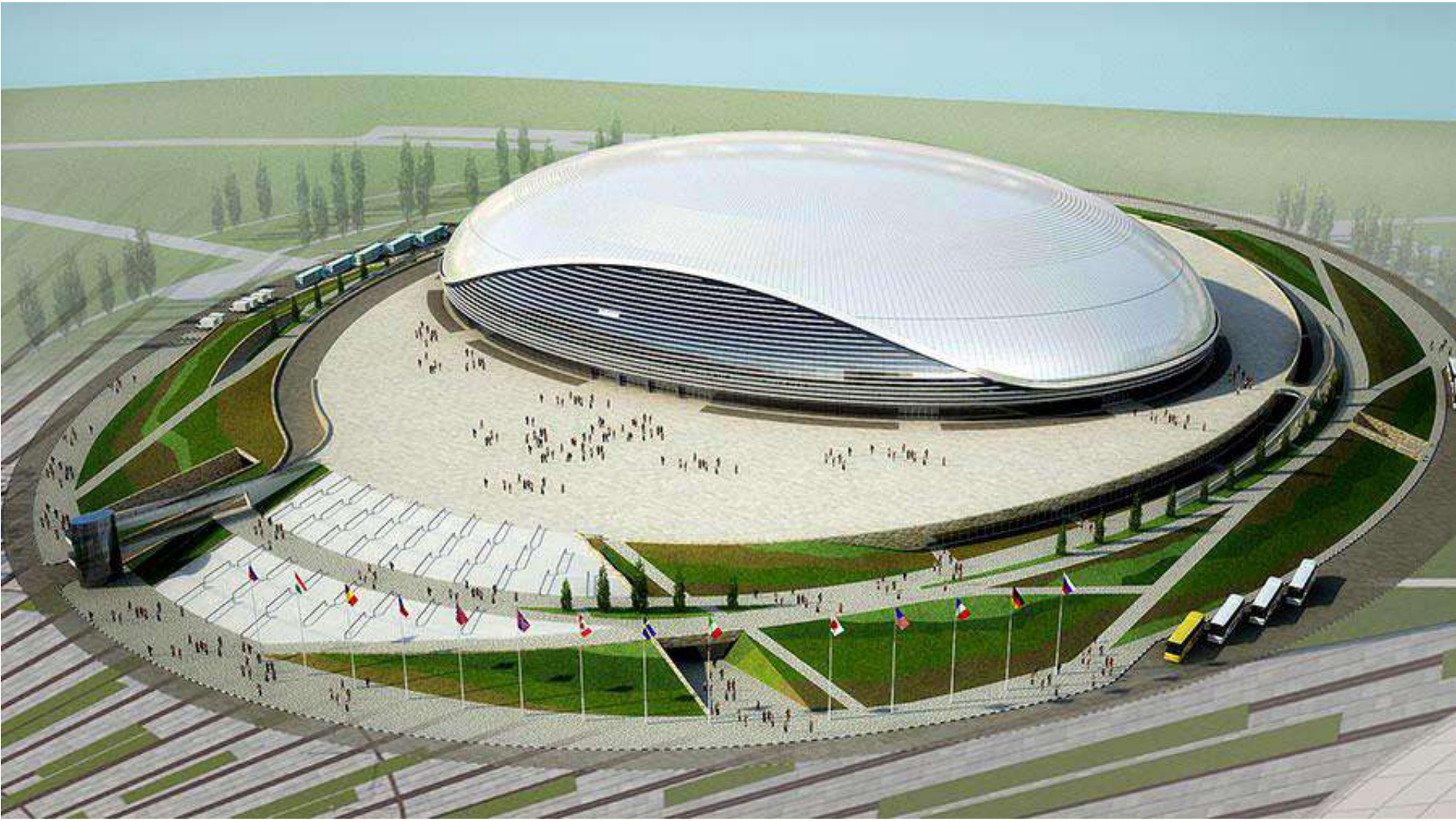






ICE rink “Shaiba"

FISHT OLYMPIC STADIUM



BIG ICE PALACE "BIG"

ADLER ARENA

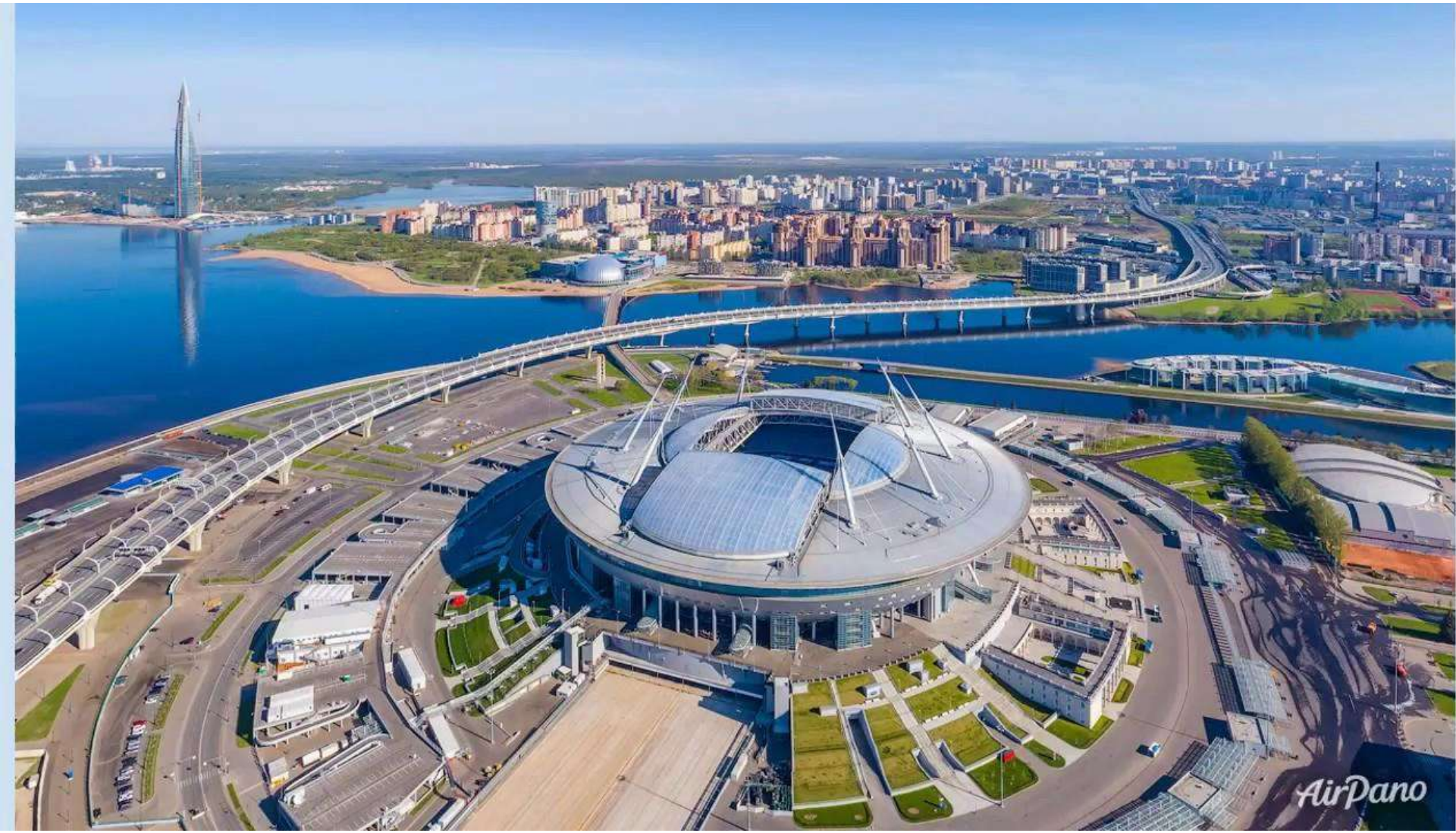
Ice Cube Curling Center

2018 WORLD CUP

FOOTBALL STADIUM "NIZHNY NOVGOROD" for 45 THOUSAND. SPECTATORS, PI US "ARENA"

LUZHNIKI STADIUM, MOSCOW

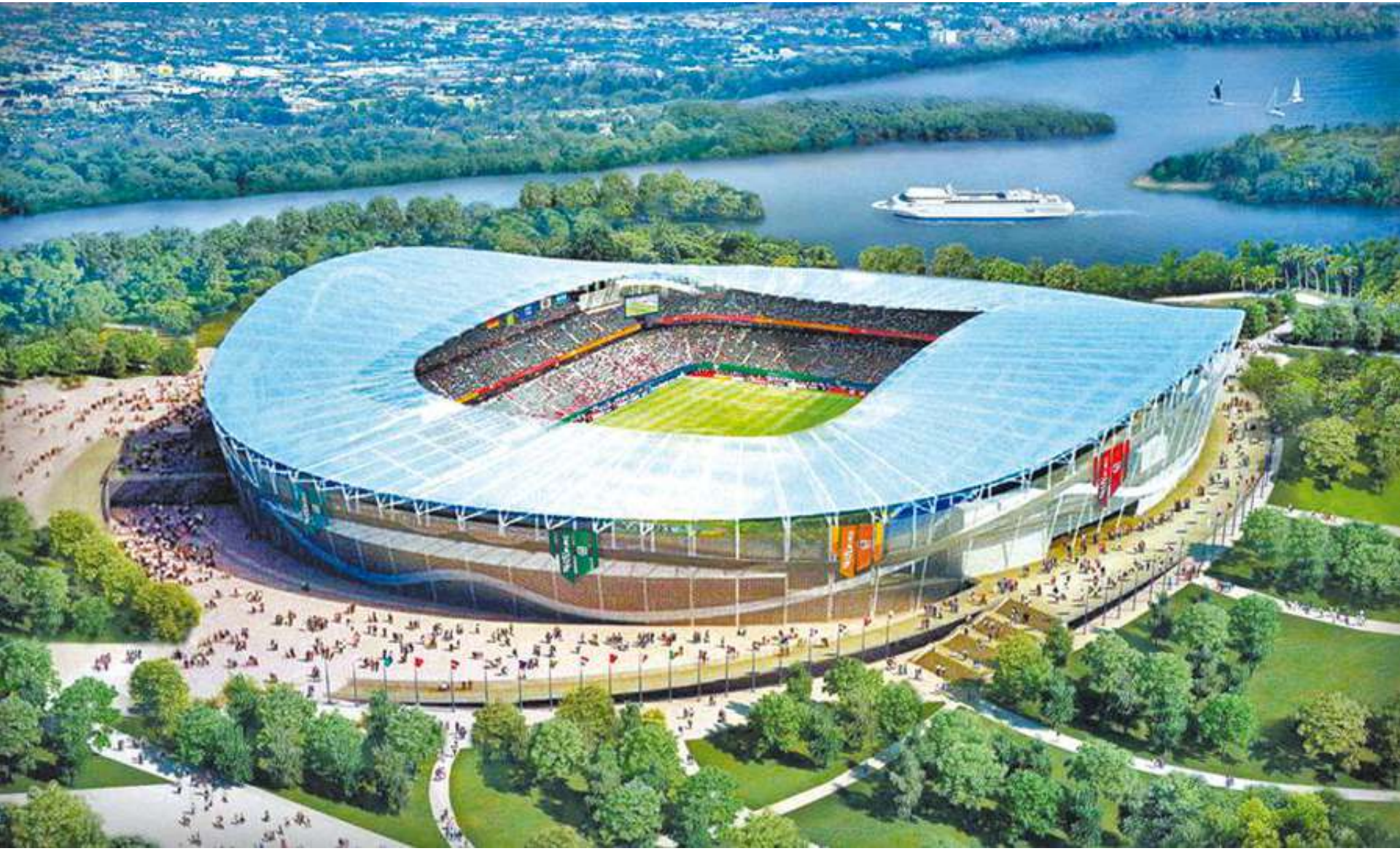
SPARTAK STADIUM, MOSCOW



FOOTBALL STADIUM "ST. PETERSBURG"

FOOTBALL STADIUM FOR 45 THOUSAND SPECTATORS IN VOLGOGRAD

SARANSK ARENA



KAZAN ARENA

FOOTBALL STADIUM YEKATERINBURG ARENA

FOOTBALL STADIUM KALININGRAD

FOOTBALL STADIUM SAMARA ARENA

FOOTBALL STADIUM ROSTOV ARENA

FISHT STADIUM IN SOCHI

FIRE SAFETY REQUIREMENTS TO STRUCTURES AND DEVICES FOR SPECTATORS

In facilities intended for competitions in the presence of spectators, it is necessary to provide stands - places for spectators. The slope of the stands is no more than 1: 1.5. It is allowed to design stands with a slope of 1: 1.25, if additional safety conditions for the evacuation of spectators are provided for the building. Seats for spectators should be separated by transverse passages.

The number of spectator seats in the stands in the row:

- at filling on both sides - not more than 50;
- at filling on one side - not more than 25.

Evacuation of spectators from the stands should be provided through numbered hatches. The width of the escape exits from the building should be at least the total width of the exits from the gyms.

The width of the escape route will be at least:

- 1 m - for horizontal passages, ramps and stairs;
- 1.2 m - for doors and hatches in indoor sports facilities;
- 1.5 m - for hatches in open sports facilities.

The width of the escape routes for spectators on the land plot should be accepted at a rate of 1 m per 500 spectators.

In sports and spectacular and universal halls, spectator seats should be divided into blocks of rows of places from which people are evacuated through one hatch or exit from the arena of the hall according to instructions. Total number of spectators per evacuation hatch, must not exceed:

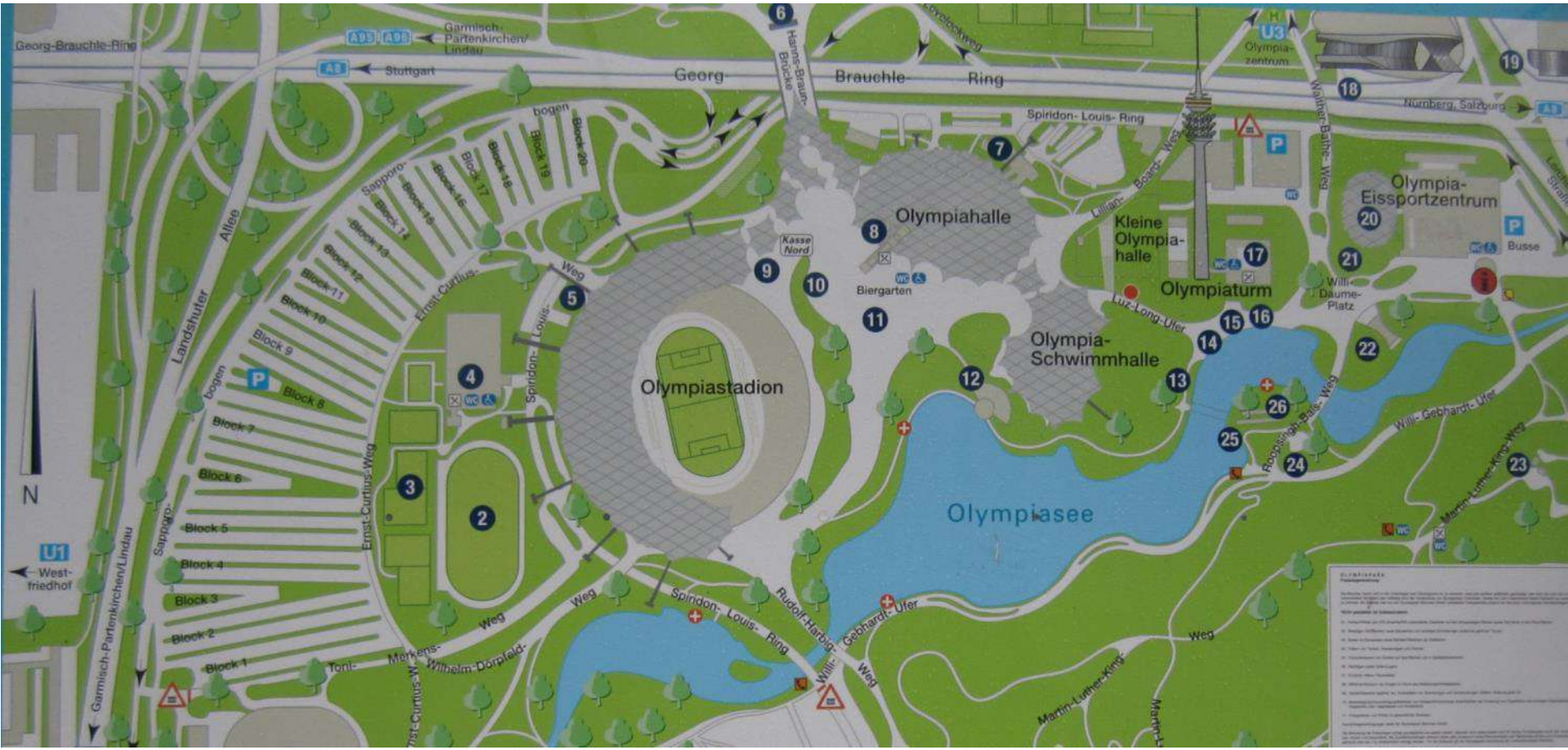
- 1500 people - at stands with fire resistance limit of ceilings under stands REI 60;
- 1000 people - at stands with fire resistance limit of ceilings under stands REI 45;
- 750 people - at stands with other fire resistance limits.

In indoor sports facilities, the estimated number of spectators, passing through each exit (hatch, door) from the floor there must be no more than 600 people. When arranging a parterre in the sports arena with only two exits standing between them must be at least half the length of the hall. At calculated width of stairs, passages or hatches in stands open and indoor sports facilities more than 4 m should be pre-keep separation handrails not less than 0.9 m high.

Olympic villages

The *Olympic Village* is a complex of buildings in which members of the delegations of the participating countries of the Olympic Games are located. The Olympic village must meet all the requirements of the International People's Olympic Committee.

Athletes, coaches, team leaders, technical and maintenance personnel live in the Olympic Village; members of inter-
international organizations, judges, journalists do not belong to them. Olympic village includes three main functional
zones: residential, management and international. First floors
buildings are usually equipped for headquarters premises. To the composition Olympic village includes residential buildings, necessary facilities infrastructure, food, trade, cultural and leisure centre, service institutions, information centre, car parking, car inspection and maintenance station. The sports complex of the village should provide all the conditions for training athletes and their comfortable living. Thus, it is a whole town that should be located close to the Olympic stadiums and places
sporting events.



Olympic Stadium in Munich, F. Otto, G. Benish, 1971

An important professional issue is the possibility of using the structures of the Olympic village after the Olympics. The buildings of the Olympic Village can be used as residential buildings for residents of the city, as student dormitories, apartments, as well as for other needs. The infrastructure of the Olympic villages is constant. Thus, they are currently being built taking into account environmental requirements, as well as the requirements of the Paralympic Games. To create a barrier-free environment, all architectural objects and their equipment take into account the characteristics of various groups of people with disabilities.

LECTURE 12.

TRADE BUILDINGS

Due to a number of social and economic factors, the growth of the population of large cities, the development of construction technologies, business and financial activity, as well as the improvement of forms of retail and wholesale trade, there are new types of buildings and retail establishments. The main directions of this process: the emergence of the network market has led to the emergence of one of its main components — super-and hypermarkets closed retail spaces for universal use. Their architecture is often reduced to the form of the simplest parallelepipeds, having mainly utilitarian goals. The second component of the network market are malls, or warehouse stores. Having appeared at the intersections of highways and turning peripheral areas into attractive places from the point of view of visiting these institutions. They influenced the formation of the universal commercial building typology. In addition, new types of temporary retail structures have been formed in the form of small-scale wholesale and retail markets and minimarkets that have the character of temporary pavilions. And finally, the most relevant direction is the formation of large multifunctional shopping centers-structures that perform a number of related functions along with the dominant shopping center: business, entertainment, catering and financial.


HERMÈS
HERMÈS
HERMÈS
HERMÈS


Türkei
INFORMATION
SINGERSTRASSE 2
ROLEX


ZARA
ZARA
ZARA
ZARA
ZARA
ZARA
EIS
EIS


ТВОЕ
CROSS
ВЕТЕР ПЕРЕМЕН


МНОГОЗАЛЬНЫЙ КИНОТЕАТР
ФОРМУЛА КИНО
ТРЦ "ШОКОЛАД"
БРАТЬЯ ГРИММ
С 15 СЕНТЯБРЯ
НОЧНОЙ РЕЙС
С 25 АВГУСТА
ПЕРЕВОЗЧИК 2
С 8 СЕНТЯБРЯ
БАНК УРАЛСИБ
ГОРЯЧИЙ ЮЖНЫЙ ВЕТЕР КАН
22 РУБЛЯ
3 ЭТАЖ
Reebok
НОВАЯ КОЛЛЕКЦИЯ

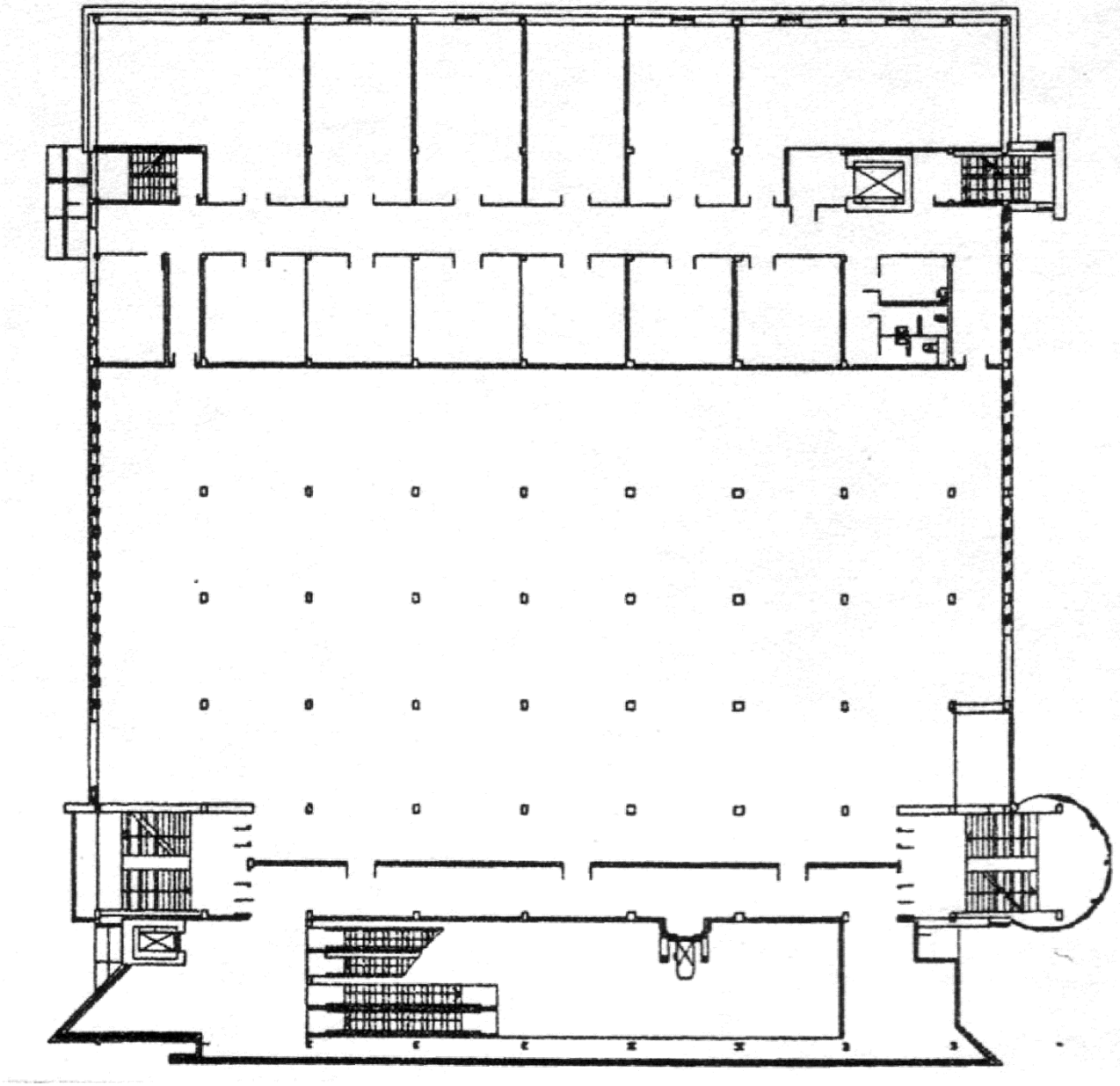

СЫЛКО

MASTER PLAN

The site of a store or shopping center includes two functional zones:

- a shopper's zone with recreation areas, free-standing storefronts, and other means of advertising;
- an economic zone for the entrance and unloading of cars.

Parking areas for buyers ' cars should be provided at a distance of no more than 150 m from commercial establishments. It is recommended to provide parking lots on the sections of retail buildings at the rate of 15-20 parking spaces per 100 m2 of retail space of the store, but due to the increased level of motorization, the design is usually carried out according to the design task. In the case of space-planning decisions of the store, a built-in and attached to a house, loading areas from the yard of the house, where there are no apartments windows and entrances to the residential part of the house. Loading of public premises built into residential buildings should be carried out: from the ends of residential buildings that do not have windows; from underground tunnels; from the streets in the presence of special loading rooms. It is allowed not to provide the specified loading rooms when the area of the built-in public premises is up to 150 m2.



Buildings and retail establishments include the following groups of premises:

- retail premises;
- premises for receiving and storing goods, for preparing them for sale;
- utility rooms;
- administrative and domestic premises;
- technical premises.

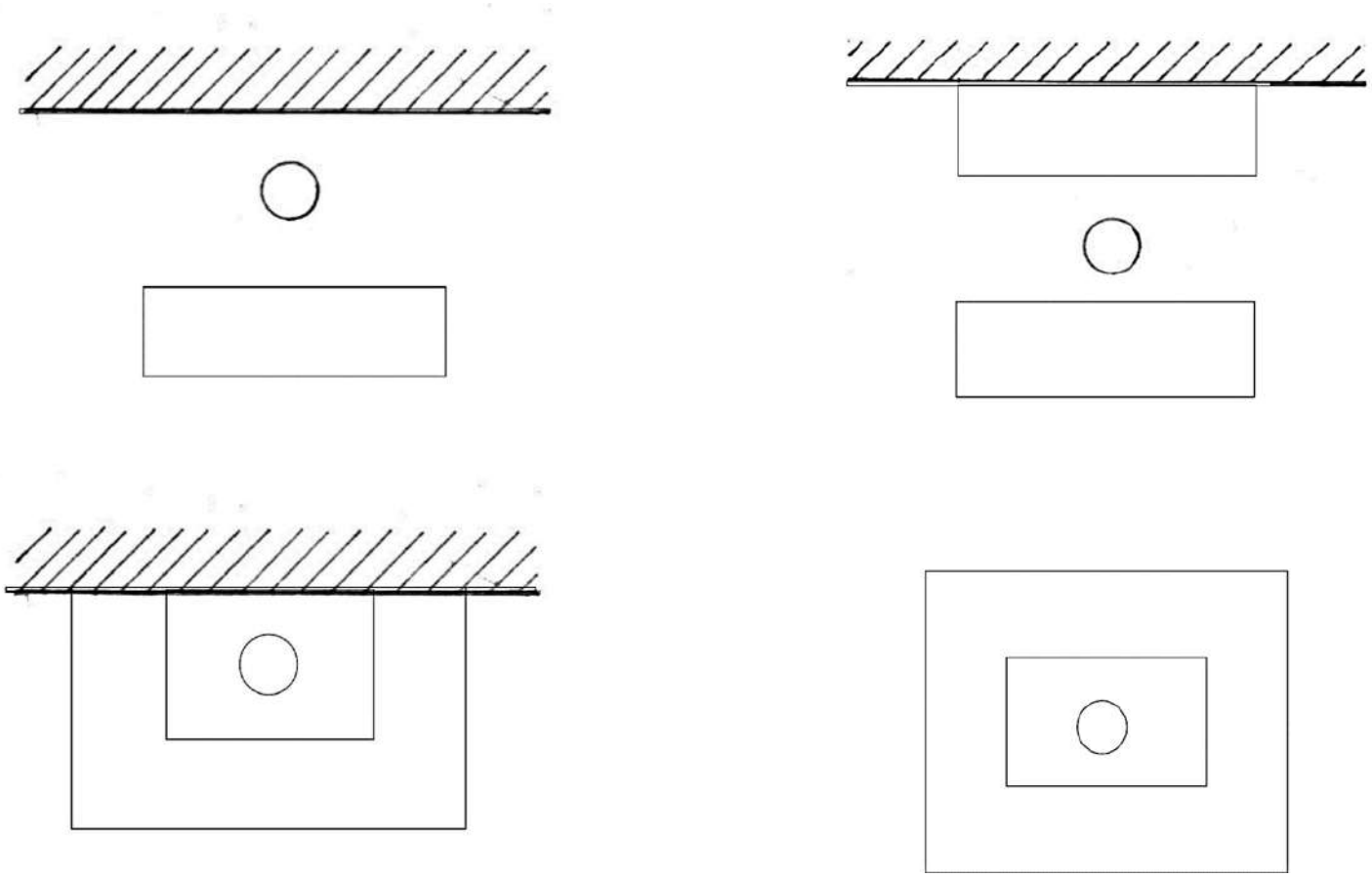
RETAIL PREMISES — RETAIL HALLS

Retail halls of stores should have, as a rule, natural lighting, but it is allowed to place retail halls in the basements for the sale of food products, dishes and other non-combustible materials.

The floor height of the sales halls is 3.3 m with an area of up to 1000 m2; 4.2 m - with an area of more than 1000 m2. With suspended ceilings, it is allowed to lower the height of the trading floor to 2.7 m to the bottom of the protruding structures.

Evacuation ways must be provided from the trading floor directly to the outside or to the stairwell in calculation, but not less than two. To calculate the evacuation ways, the number of customers who are at once in the trading floor should be determined based on the calculation of 1.35 m2 of the trading floor area per person. In this case, it is allowed to take into account the service stairs connected by the corridor with the sales hall. The main open stairs or ramps in the trading floor are only considered for the evacuation of no more than half of the buyers from the second floor. The width of the main evacuation ways in the trading floor is not less than 2.5 m; the width of the flights of open stairs is not less than 1.5 m. Passage to storerooms, premises for preparing goods for sale, office, household, utility, technical premises through the sales halls is not allowed.

Retail equipment primarily includes counters and display cases. Non-food storefronts are designed with a depth of up to 1.5 m, department storefronts — up to 2.5 m. Above the sidewalk, the showcase should rise by 60 cm.



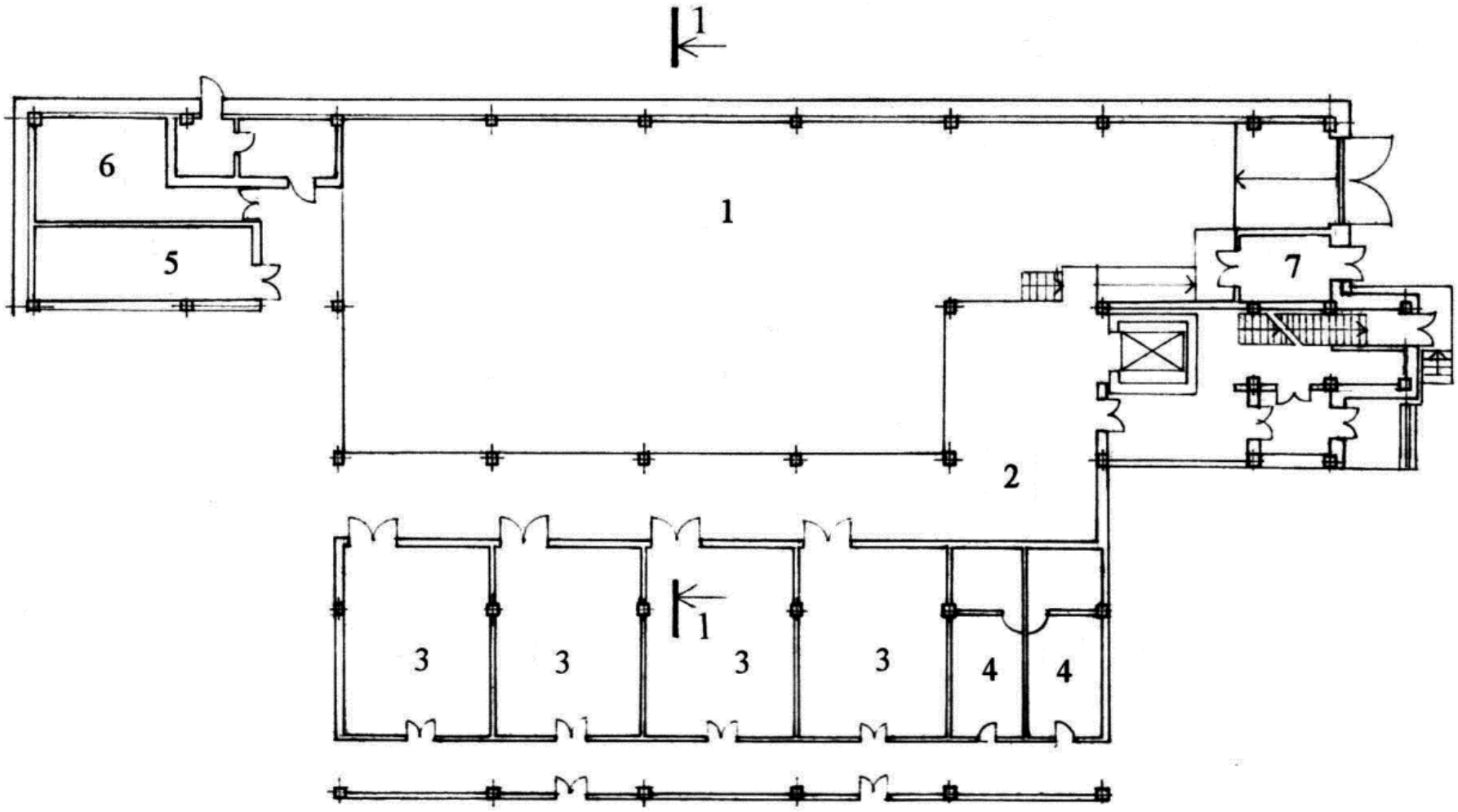
The main layout of retail equipment, depending on the type of store: linear (one-line and two-line), island, box and salon.

PREMISES FOR RECEIVING AND STORING GOODS TO PREPARE THEM FOR SALE

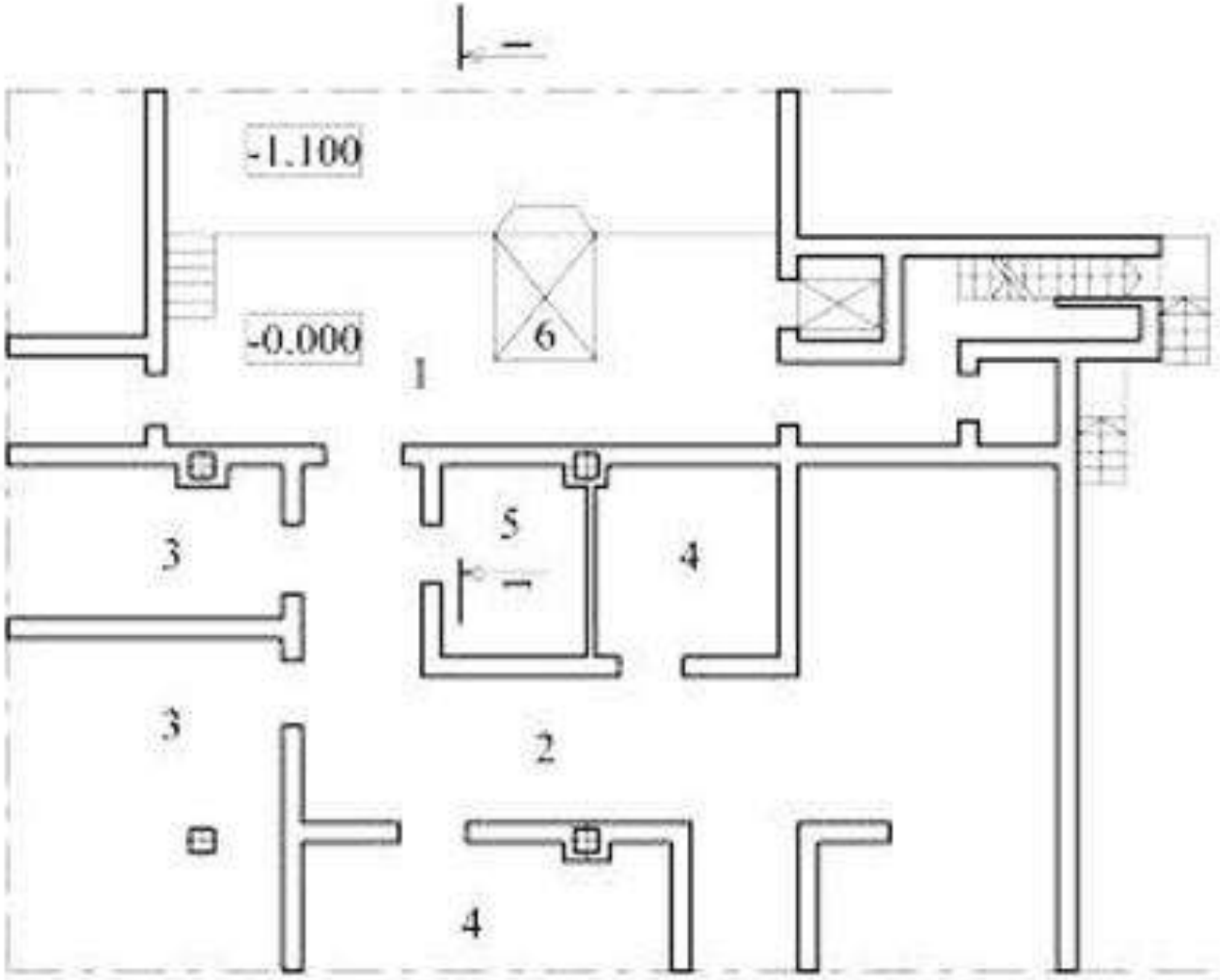
To the premises for the acceptance and storage of goods, for the preparation of their sales include:

- unloading platforms;
- loading platforms;
- storerooms of goods;
- refrigerated chambers — in food stores.

Unloading platforms should be 1.1–1.2 m above the level of the platform for cars. The width of the platform should be 4 m, in some cases it can be reduced to 3 m and increased to 6 m. Platforms should be designed on the condition of unloading vans from the rear or right sides. In this case, the unloading platforms are placed either indoors or under canopies.

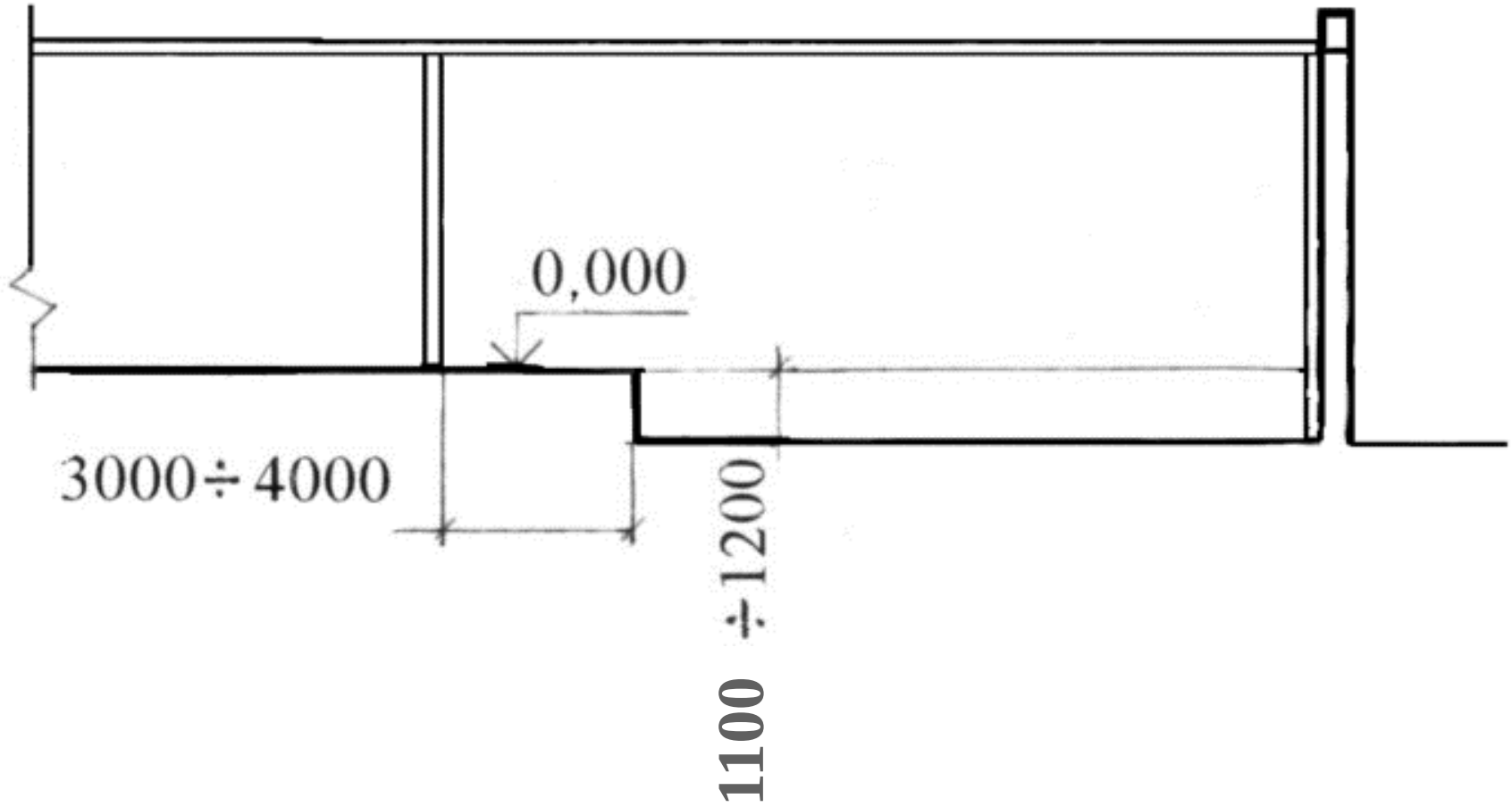


Example of premises solution for receiving and storing goods to prepare them for sale



Plan of the covered yard:

1 - unloading platform under a canopy; 2 - loading room; 3 - cooled chambers; 4 - storerooms; 5 - storekeeper's room; 6 - stationary equalization platform PUS-3000


0,000
3000÷4000
1100 ÷1200

The area and purpose of the storerooms depend on the purpose of the store. For example, in grocery stores per 10 m2 of floor space designed: pantry meat and cooled camera; pantry fish and cooled camera; pantry gastronomy and cooled camera; pantry milk and cooled camera; pantry fruit and cooled camera; pantry vegetables and cooled camera; pantry wine and drinks and cooled camera; the bread pantry, grocery, pantry confectionery. Storage rooms and cooling chambers may be located in the basement o cellar. The cooled chambers should not be placed near boiler rooms, showers and other rooms with high temperature and humidity. Storerooms, as a rule, should be located near the outer walls.

UTILITY ROOMS

The utility rooms include:

— storage rooms for containers and packaging materials;
— washing and laundry facilities;
— storage room for cleaning equipment;
— small repair shops;
— food waste chamber (for food stores);
— the garbage chamber.

INDOOR MARKETS

When placing indoor markets in the city structure, it is necessary to take into account the following specific features:
— the market should be close to the consumer, the maximum distance of the market from housing is 1.5 km;
— when organizing convenient entrances and ways to the covered market, it is necessary to observe the isolation of external cargo flows from the buyers ways;
— sanitary regulations dictate the removal of the indoor market from warehouses and industrial organizations that pollute the atmosphere, not less than 500 m.
Markets can be located:
— in residential buildings;
— on the market square (island location);
— as part of shopping centers.
The normal area of the covered market area is 1.2-1.5 hectares.
The territory of the market includes:
— pre-market area for the approach of buyers and the entrance of cars;
— plot for the market building;
— a platform for summer and autumn seasonal trade;
— utility yard with convenient entrances to the loading areas.

The market consists of one-time and stationary retail spaces, separated by passageways for visitors. The width of the main passages — from 4 to 10 m; side — from 2.5 to 7 m; cross — from 1.5 to 5 m.
One-time seats — open counters located in the central part of the trading floor in the form of rows and islands. Stationary places — specially equipped small tents that have a connection with warehouses and sanitary control stations. Warehouses and refrigerators can be located in separate buildings (in the pavilion scheme) on the first and second floors and in the basement.
Internal vertical transport (stairs and cargo elevators) for the goods and for the buyer should be designed separately.
The main types of space-planning solutions for indoor markets:
— pavilion — decentralized;
— combined — communication between individual pavilions is carried out through covered passages;
— centralized — the most compact type, it is a single space with retail space.

MULTIFUNCTIONAL SHOPPING AND ENTERTAINMENT CENTRES

Multifunctional shopping centers (here and after referred to as MSC) are currently one of the actively developing types of commercial structures, in which the key principle of securing large areas is the choice of functions designed for the widest possible range of visitors. Attendance as a key point of economic efficiency has identified the ways of placing such complexes:
— in the city center as the place of the greatest concentration of people;
— along transport highways (including in the suburbs) ;
—- in residential areas.
In the first case, the main visitor is a pedestrian, in the second - a driver or passenger of the car, in the third - a resident of the nearest residential areas. In the centers of cities and settlements, large MSC should be designed taking into account the requirements of the existing historical and architectural environment, they often play a subordinate urban planning role. The location of the MSC along transport highways provides great opportunities for a multifunctional organization. MSC in the peripheral residential areas are used as family entertainment centers. In each of the cases considered, MSC are integrated into all levels of service: primary, daily, periodic and episodic.

Entertainment centres of the day should include, according to modern concepts:

- retail premises with a full set of functions;
- cinema center for several halls, including multi-dimensional projection;
- cafes and mini-restaurants — usually on the third or fourth floor floors;
- facilities for working with children;
- outdoor terraces for relaxing in the summer;
- the recreation area, with the winter gardens and fountains;
- sports facilities;
- mini-water park, swimming pool;
- universal spaces-exhibition areas for organization of temporary exhibitions;
- play areas for children and teenagers;
- offices;
- conference rooms;
- electronic libraries;
- parking lots.


1st floor plan
3 floor plan


real

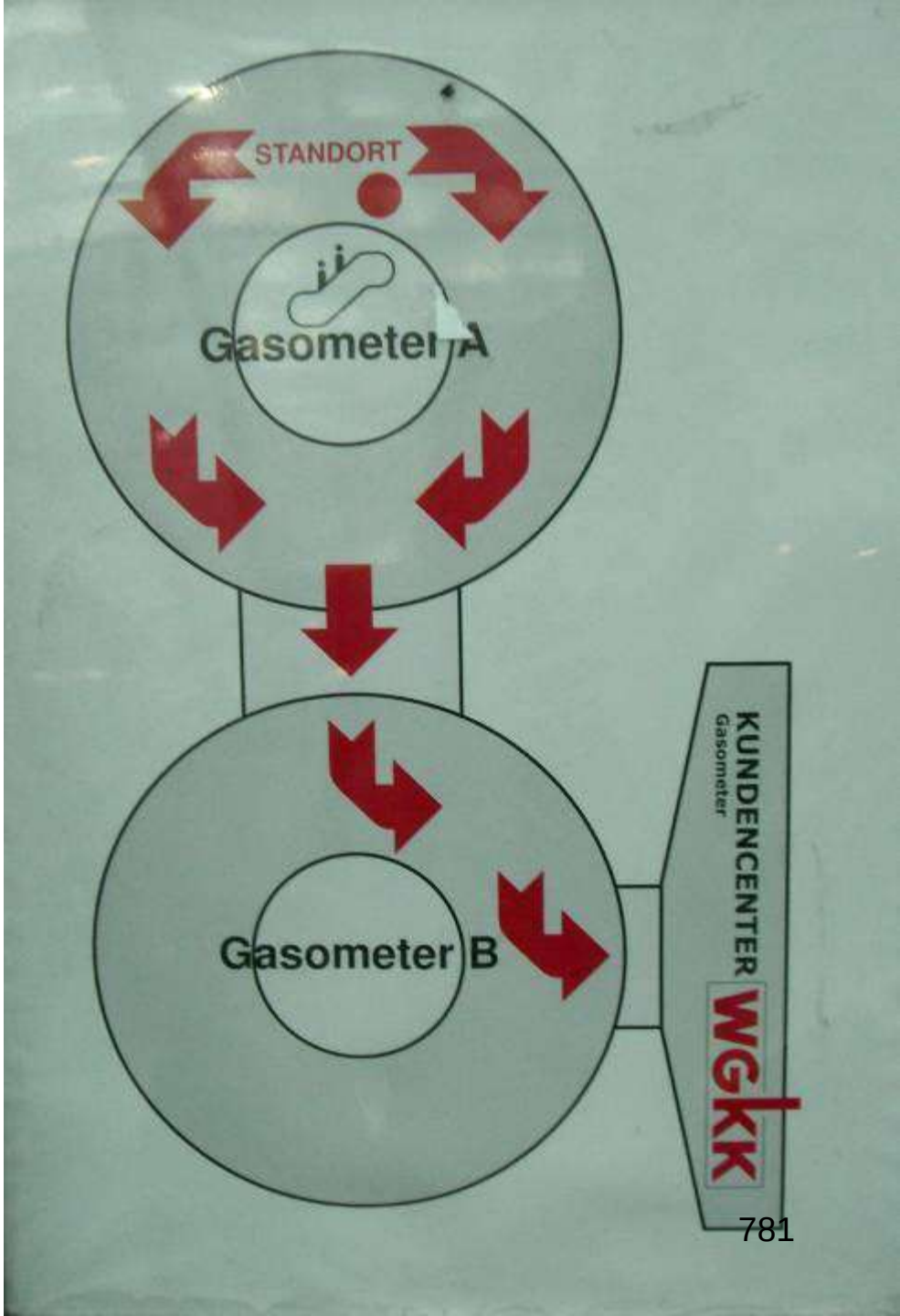

real.
777


zolla


oysho


780


D
E
C
B
A
Hollywood
Halle


STANDORT
Gasometer A
Gasometer B
KUNDENCENTER
Gasometer
WGKK


Hollywood
MEGAPLEX
Hollywood MEGAPLEX
Hollywood
MEGAPLEX


A LOUER
BUREAUX RENOVES
4 465 m²
à partir de 630 m²
KEOPS
01 47 59 38 40


BALLY


STEFANEL
CALIDA
STEFANEL


GALERIES LAFAYETTE
GUCCI
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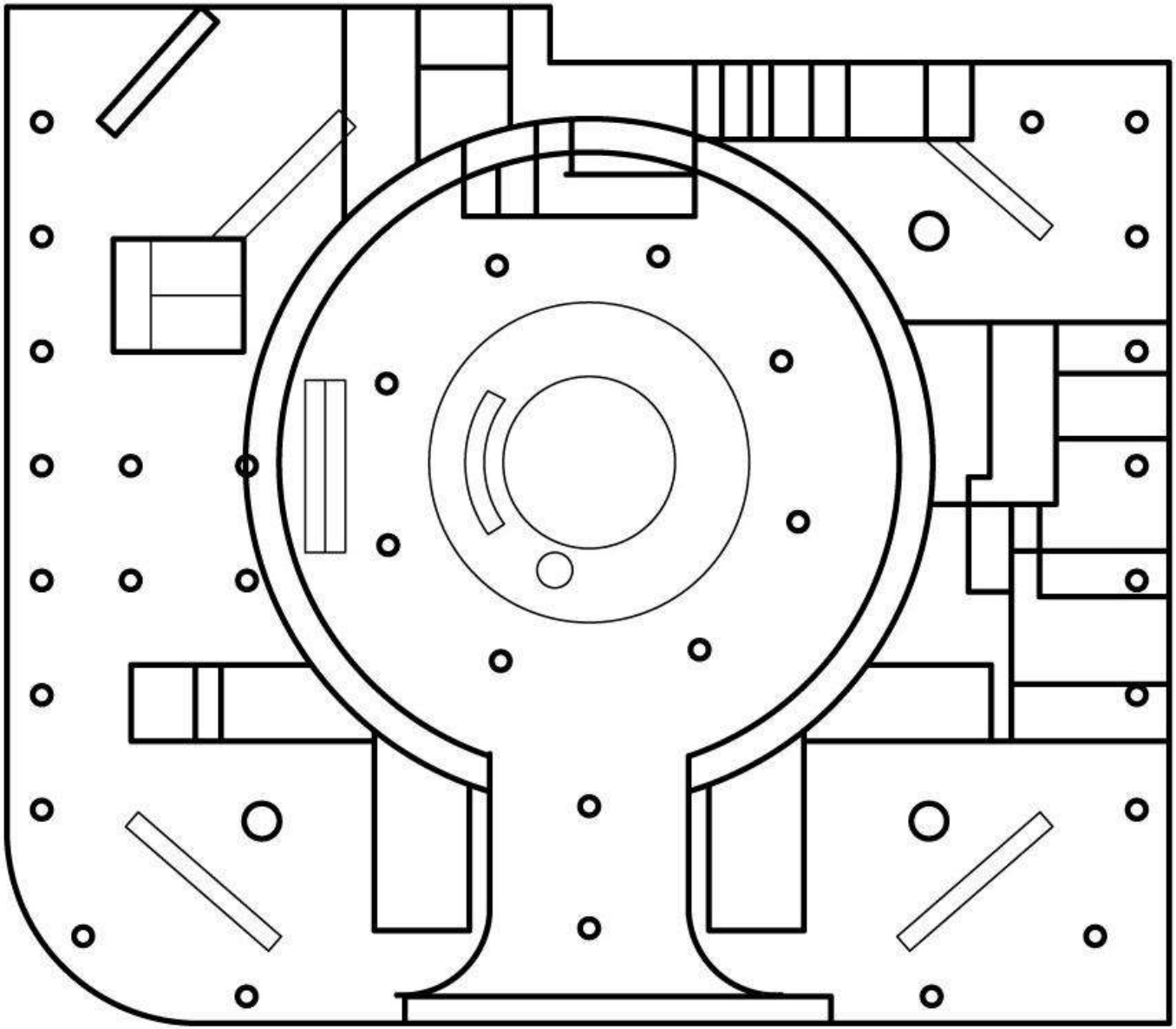
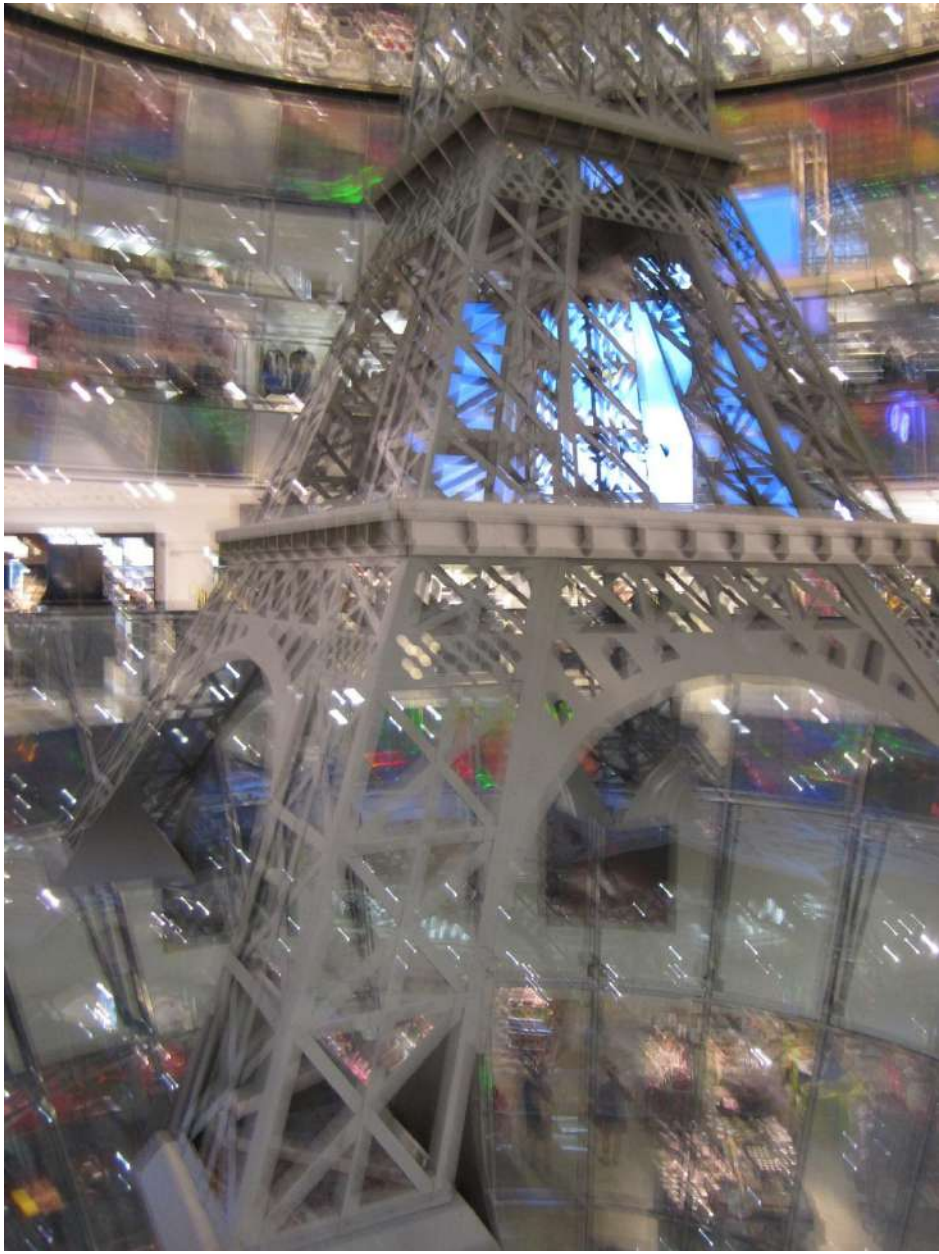




LECTURE 13.

CATERING BUILDINGS

CLASSIFICATION OF CATERING BUILDINGS

Catering establishments can be designed:
— in separate buildings specially designed for them;
— as part of public and shopping centers, market complexes, railway stations;
— as built-in or attached to areas of residential and public buildings, including underground spaces.
The land plot of catering buildings is divided into two zones: for visitors (meaning the organization of recreation for visitors and additional places for eating outdoors in the summer) and an economic zone. In this case, the household yard must have access roads for trucks and an unloading area a site adjacent to a group of storage areas of the building, a garbage collector, a recreation area for staff, parking for cars; in rural settlements, areas for storing solid fuel are provided in the economic yard. The economic zone and unloading areas of public catering enterprises built into residential buildings should be designed from the ends of these buildings that do not have window and door openings. It is necessary to provide Parking for cars on the site. At the same time, they must be located at a distance of no more than 150 m from the building of the catering enterprise.

Groups of premises of catering buildings :

1. Facilities for visitors:

- a lobby with a cloak room;
- washing, restrooms;
- dining halls;
- buffet;
- premises for the sale of lunches and semi-finished products at home.

2. Production facilities:

- Production facilities:
- transfer case;
- washing of kitchen and dining utensils;
- the bread slicer.

3. Rooms for receiving and storing food:

- loading rooms;
- storage areas: dry food storage room
- vegetable storage room, inventory and packaging storage room;
- cooled chambers.

4. Administrative and domestic premises:

- office premises;
- office of the director and accountant;
- staff offices;
- medical office;
- dressing rooms, showers and sanitary units for staff.

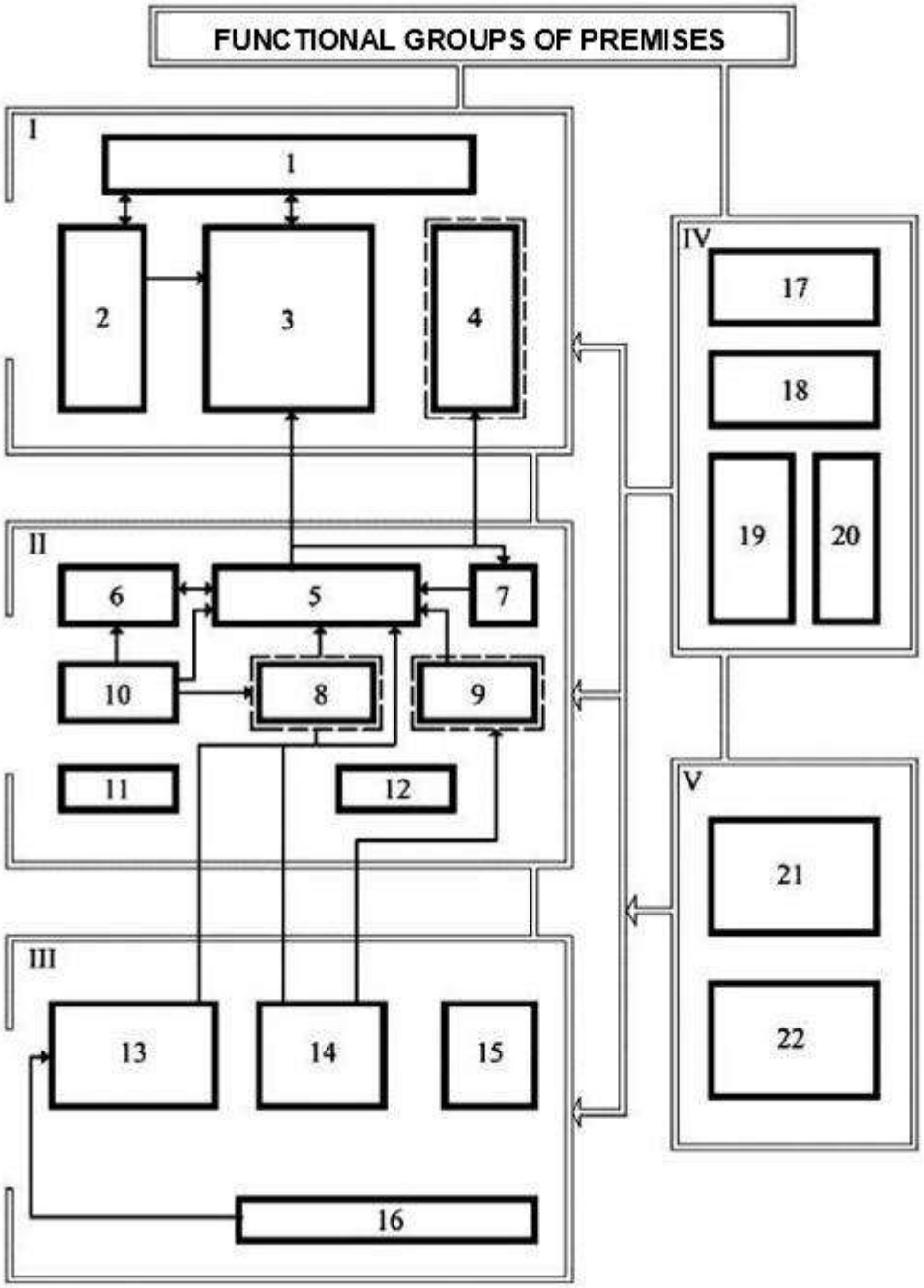
5. Premises for engineering services.

Rooms for visitors can be defined as commercial, and all other groups — as non-commercial. The following general requirements apply to the space-planning solutions of buildings of catering enterprises of all types:

— rational placement of commercial and non-commercial premises relative to each other: location of premises should ensure their shortest interconnections, eliminate the intersection of the flows of visitors and staff, clean and unwashed dishes, semi-finished products, raw materials and waste;

— the possibility of transformation in the process is necessary;

— it is necessary to ensure the possibility of sharing the service premises in order to reduce their area when combining several public catering enterprises in one building of a complex enterprise.


FUNCTIONAL GROUPS OF PREMISES
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III
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V
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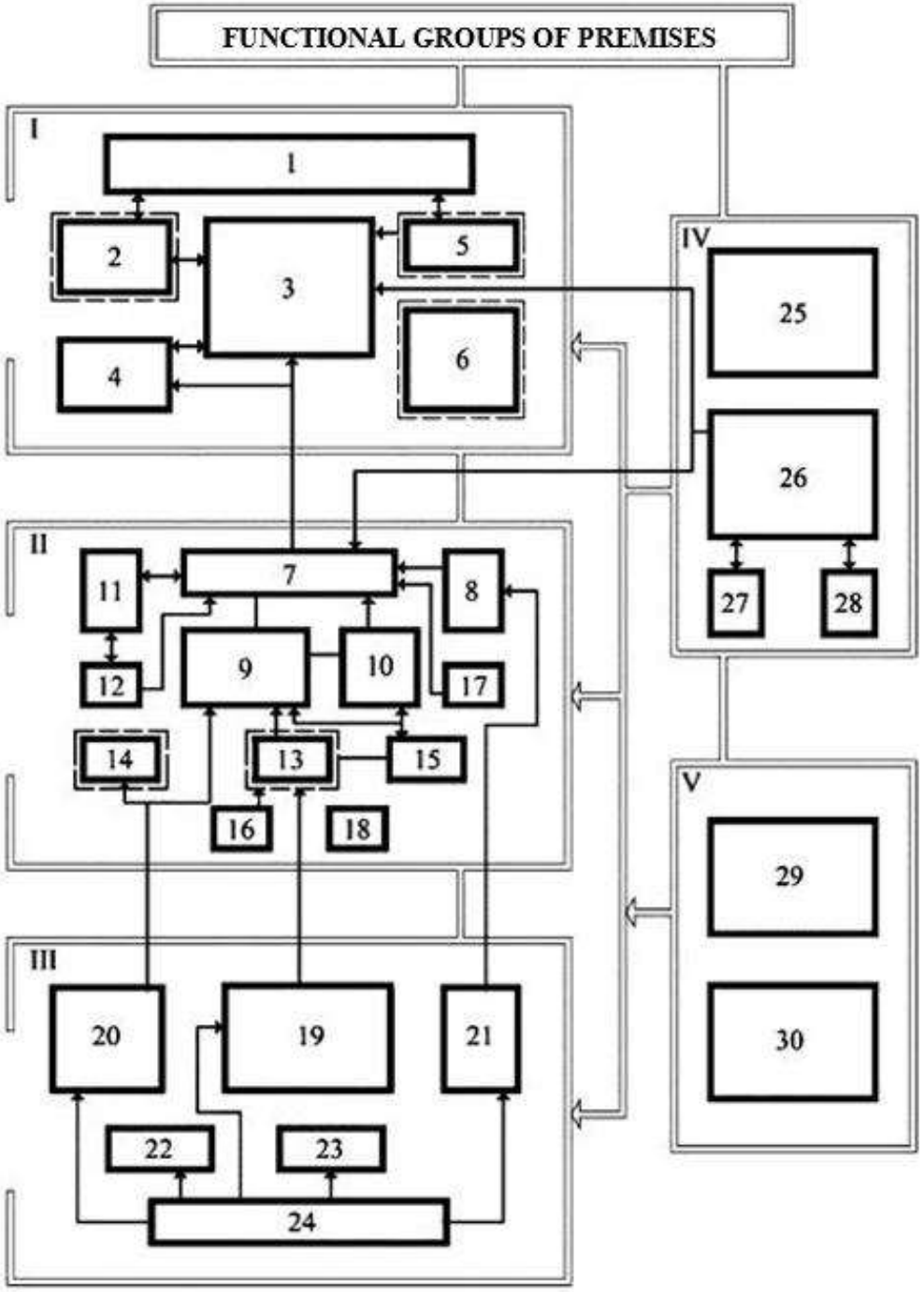
22

Diagram of the relationship between the functional groups of premises of catering enterprises with self-service:

- I — premises for visitors; II — production premises; III — premises for receiving and storing food; IV — office and household premises; V — technical premises;

1 — vestibule with cloak room, washbasin, sanitary units; 2 - buffet; 3 — dining room with a serving; 4 — store cooking; 5 — hot shop; 6 — cold workshop; 7 — washing tableware; 8 — pre-cooking shop; 9 — pastry workshop; 10 — washing pots and pans and containers of semi-finished products; 11 — the space cutting bread; 12 — the space head of production; 13 — cooled camera engine room; 14 —dry foods pantry; 15 —containers and equipment pantry; 16 — loading; 17 — office space; 18 — closet for personnel; 19 — showers and the sanitary for staff; 20 - laundry room; 21 - ventilation chambers; 22-switchboard


FUNCTIONAL GROUPS OF PREMISES
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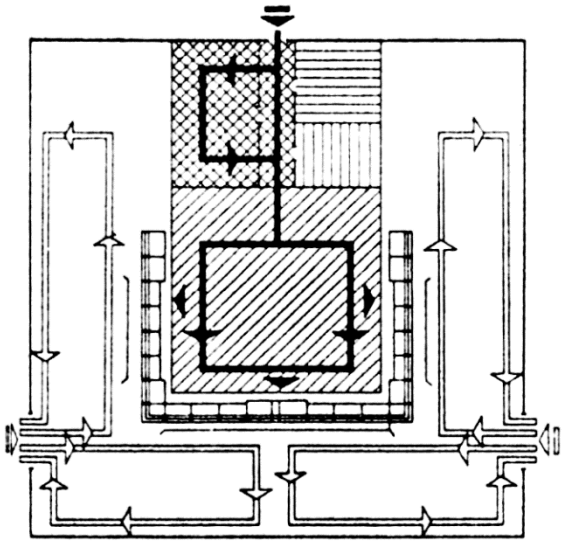
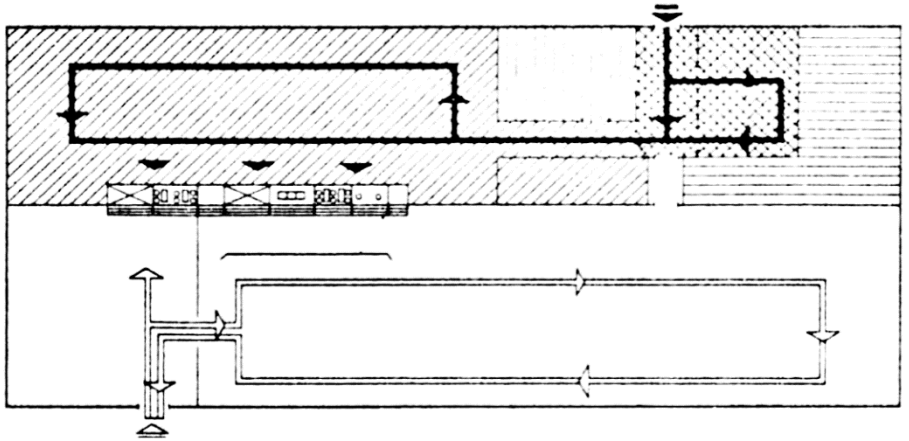
30

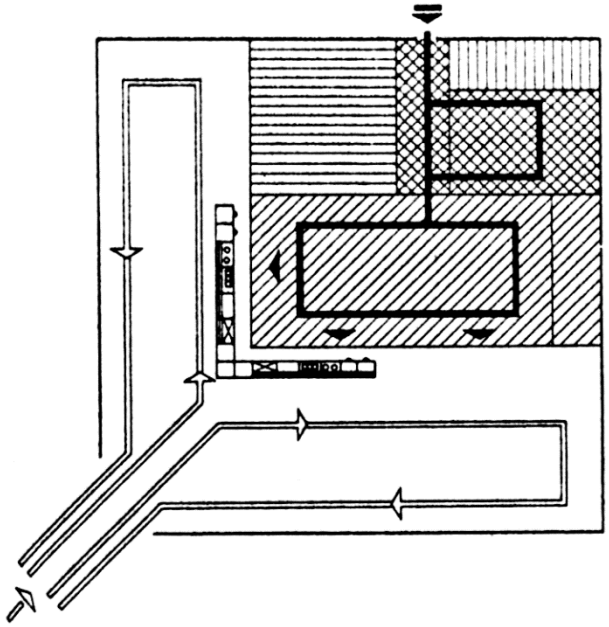
Diagram of the relationship between the functional groups of premises of pre-catering establishments served by waiters:

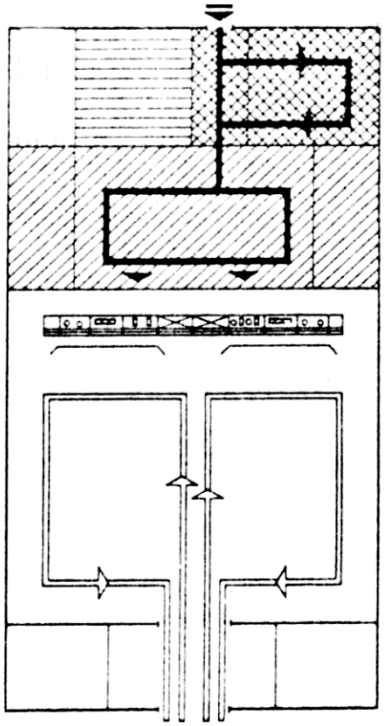
I — premises for visitors; II — production premises; III — premises for receiving and storing food; IV — office and household premises; V — technical premises;

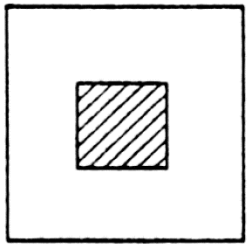
1 — vestibule with cloak room, washbasin, sanitary blocks; 2 — antechamber; 3 — dining room; 4 — Banquet hall; 5 — bar; 6 — store cooking; 7 — handout; 8 — cupboard; 9 — hot shop; 10 — cold workshop; 11 — washing tableware; 12 — service; 13 — shop with greenery separation processing; 14 — pastry shop; 15 — washing of kitchen utensils; 16 — washing packaging of semi-finished products; 17 — cutting bread premises; 18 — the room of the head of production; 19 — cooled camera engine room; 20 — dry foods pantry; 21 —beverages pantry; 22 —inventory pantry; 23 — storage room and washing containers; 24 — loading room; 25 — director's office and office premises; 26 — cloak rooms for staff and waiters; 27 — showers and sanitary units for staff; 28 — laundry room; 29 — ventilation chambers; 30 — switchboard

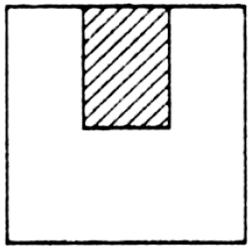


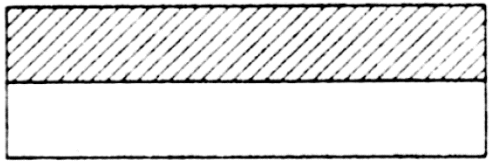


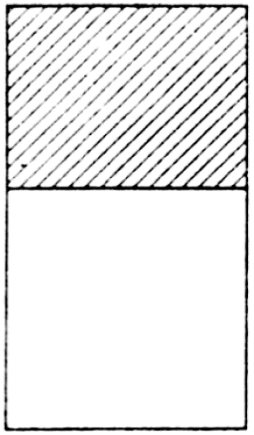


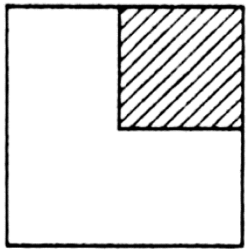


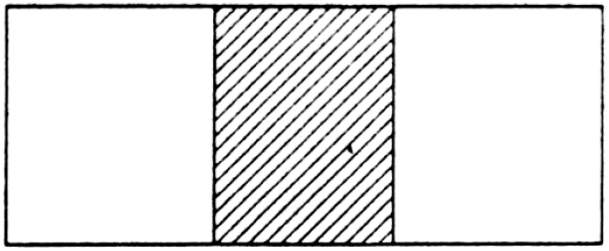












FACILITIES FOR VISITORS

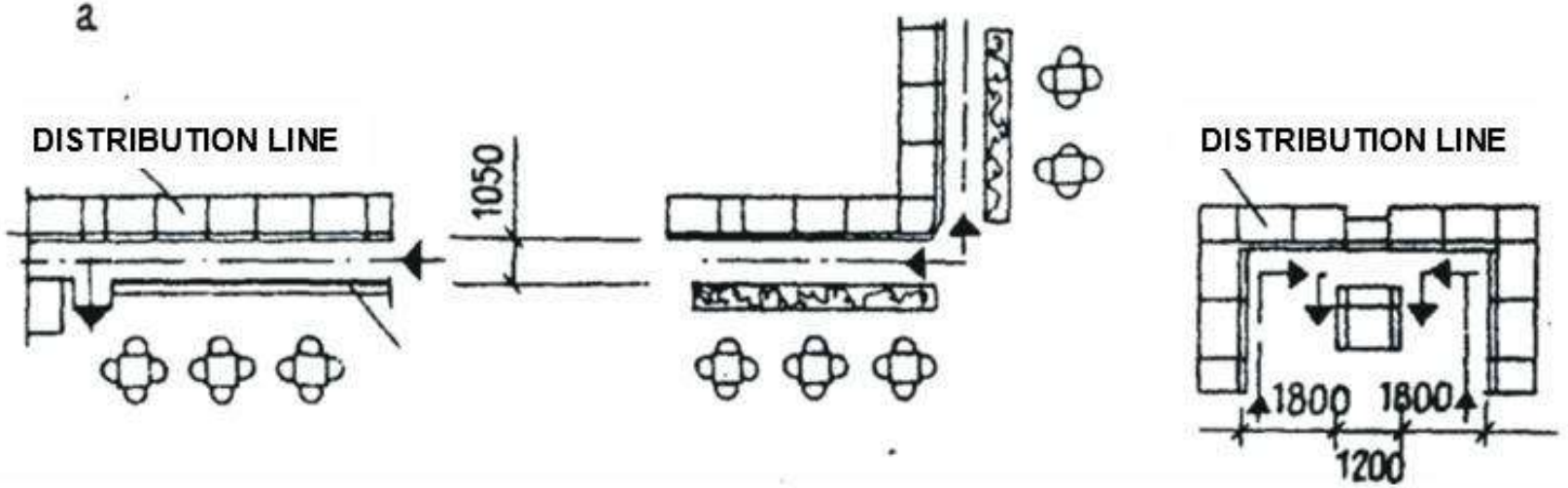
Rooms for visitors, as a rule, are recommended to be located on the above-ground floors, on the side of the main entrance or side facades, since these rooms form the spatial composition of the building and affect its artistic image.

The height of the floor should be 3.3 m, with a large size of the trading floor - 4.2 m.

It is recommended that the dining rooms and the hot and cold workshops serving them, as well as the washing of tableware, are located on the same level.

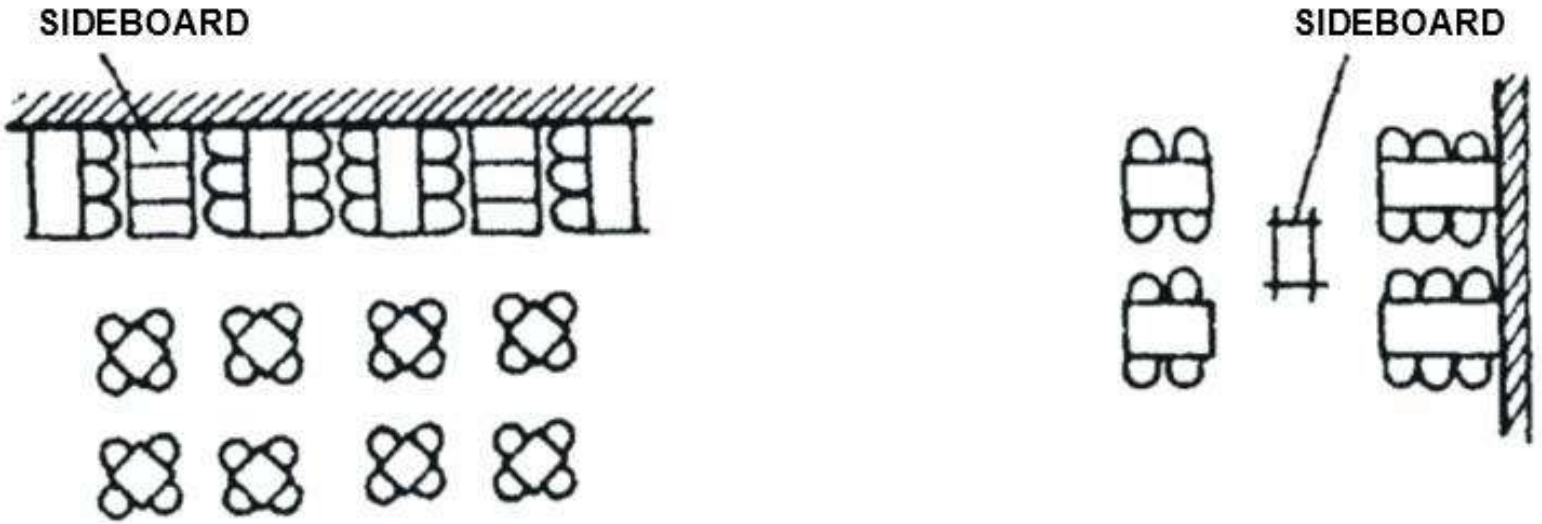
Determining factors in the design of dining rooms the halls are the form of customer service and the nature of the catering business. Self-service enterprises— canteens, snack bars, specialized fast-food cafes are usually focused on meeting utilitarian food needs, while enterprises with waiter service — restaurants, bars, cafes — are focused on selective requests with the function of leisure activities. Customer service can be carried out through waiters, through a barman or bartender, on the basis of the principle of self-service through distribution lines and counters.

a



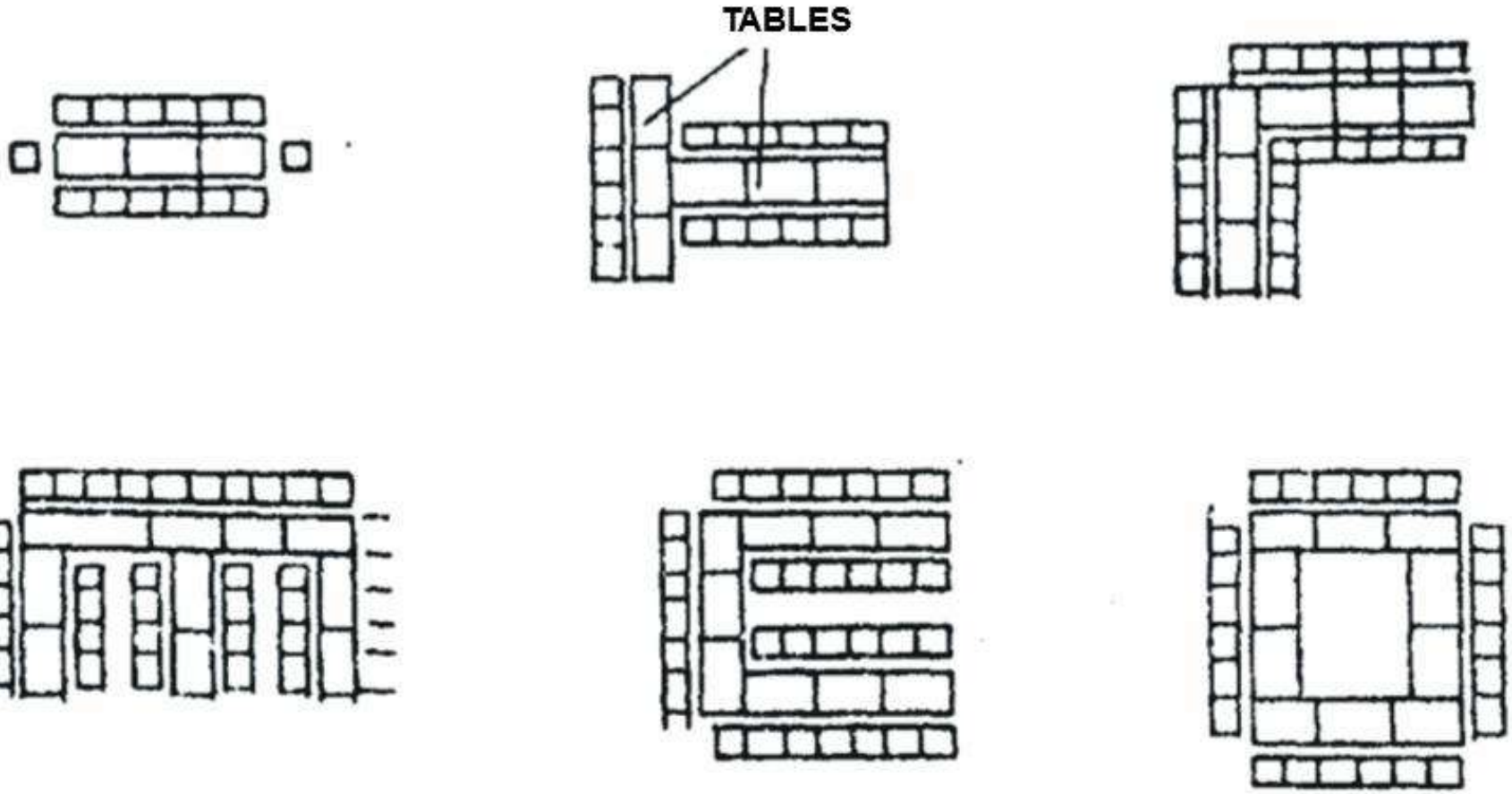
In self-service enterprises, functional dining rooms include food reception areas and food reception areas

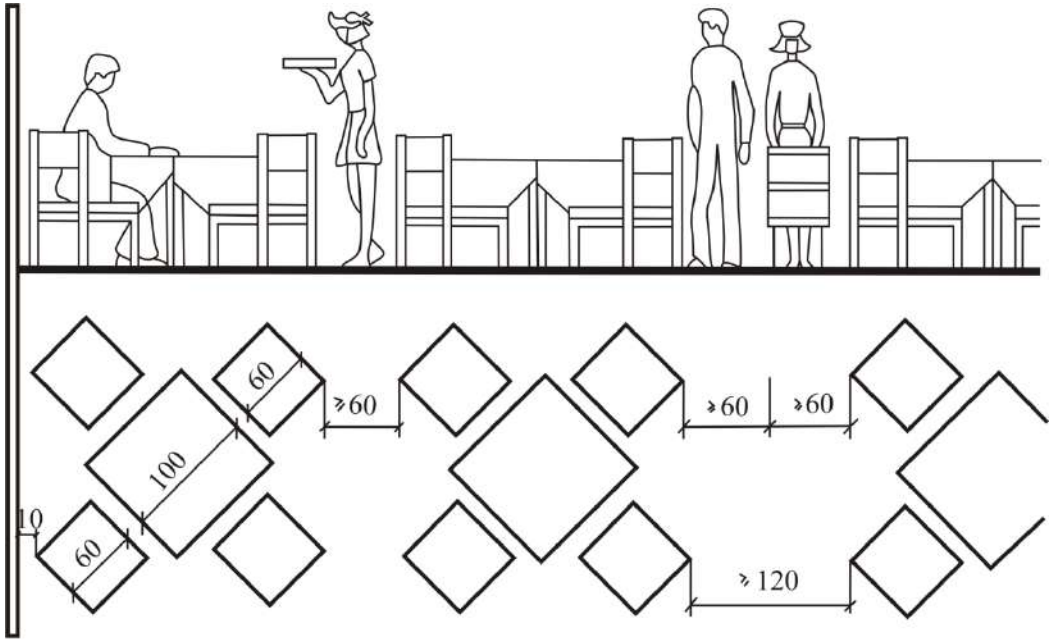
b



Functional areas in dining and banquet halls:
a — for self-service; b — for waiter service; c — in banquet halls

C

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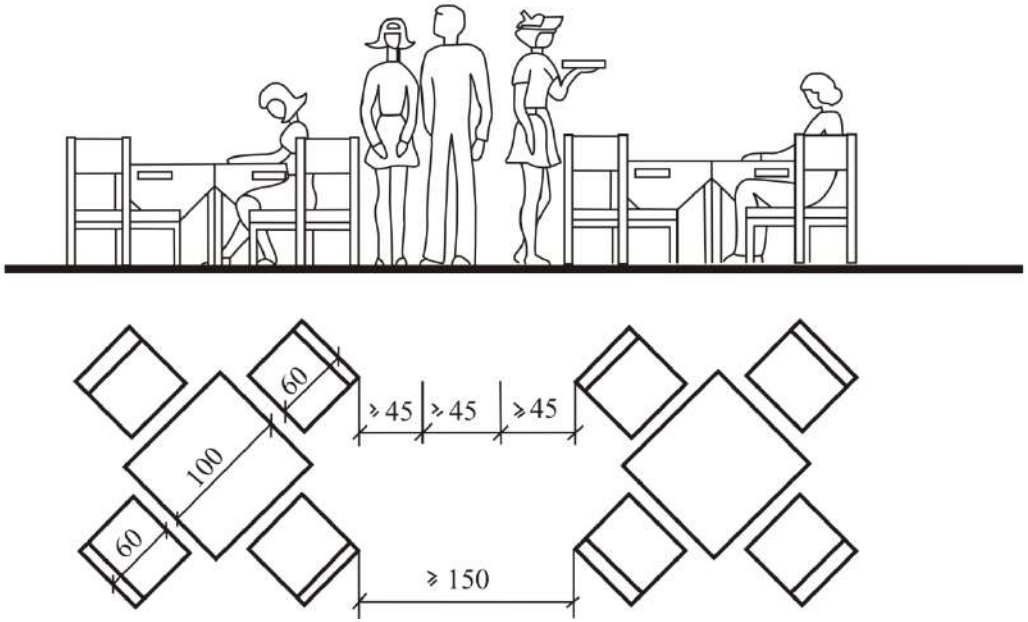
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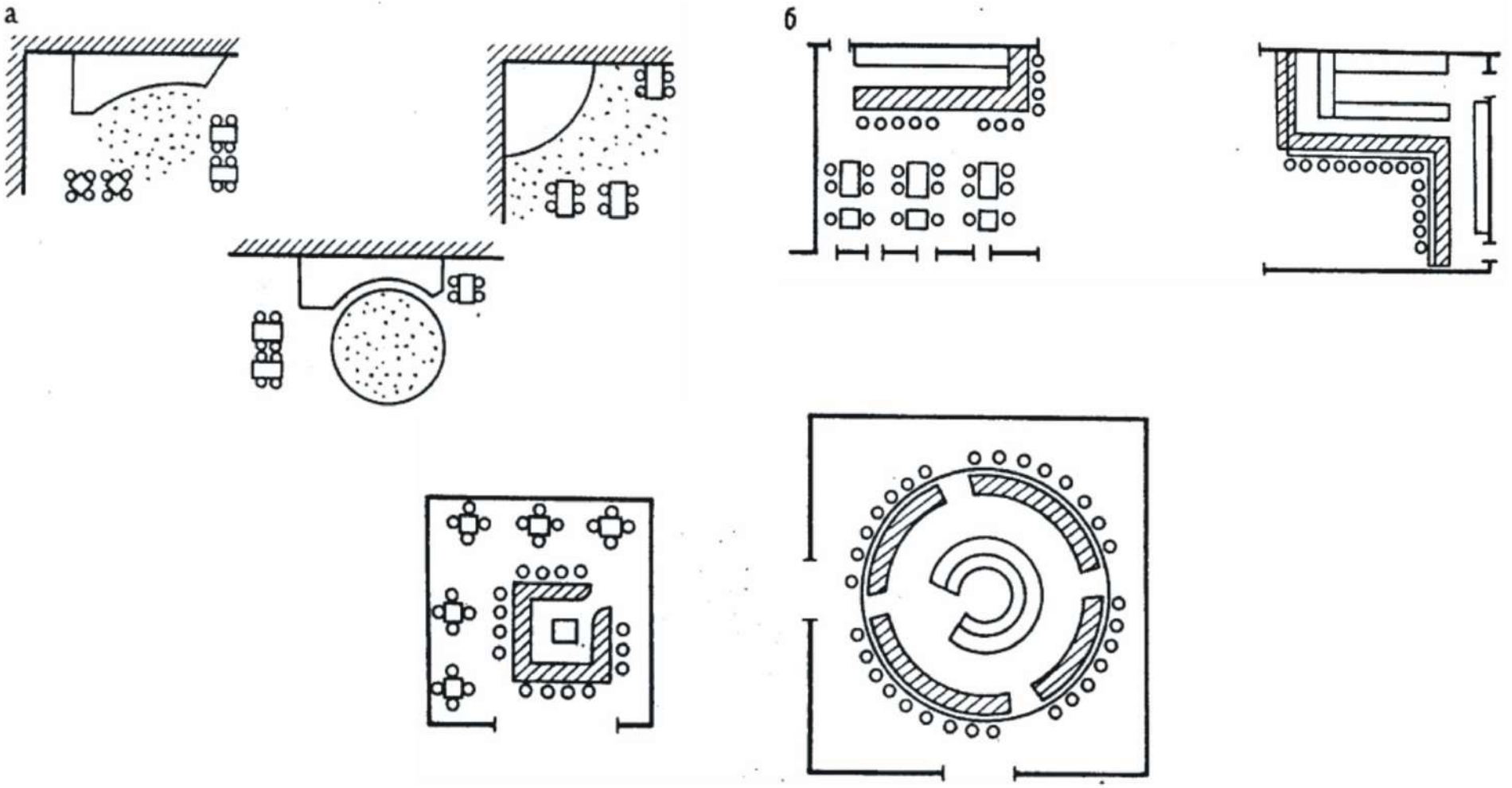


Principles of placement and compositional solutions of bandstands, places for dancing (a); bar counters (b)

AISLES IN THE DINING ROOMS

Passageways	The width of the aisles in the halls , m		
	Canteens	Restaurants	Cafe
Main page	1,35	1,5	1,2
Additional features:			
To distribute the flow of visitors	1,2	1,2	0,9
For the approach to the individual places	0,6	0,6	0,4

It is recommended to take the area of the dining room (without a handout) at the rate of one seat in the hall (m2):

• in restaurants 1,8
• in public canteens and at higher educational institutions 1,6
• in cafes, eateries and beer bars 1,4
• in vending machines, fast food outlets and non-alcoholic bars, in tourist huts and shelters 1,2
• in children's health camps (summer) and health camps for high school students 1,0
• in sanatorium children's health camps 1,4
• in schools and boarding schools: up to 80 seats in the hall 0.75, over 80 seats in the hall 0,7
• in vocational schools 0,8
• in secondary specialized educational institutions 1,3
• in sanatoriums , sanatoriums-preventive clinics, houses (boarding houses) recreation centers, youth camps, tourist camps: for self-service (including the distribution line) 1,8 for waiter service 1,4

PRODUCTION FACILITIES

A group of production facilities should be planned in a single functional area in order to preserve the continuity of production processes. The location of production shops is usually provided in separate rooms. At the same time, at enterprises with up to 50 seats, production workshops (hot, cold, pre-finishing workshops for enterprises working on semi-finished products; hot and cold workshops for enterprises working on raw materials) are allowed to be placed in the same room according to a shopless system. This gives you flexibility and the ability to transformations when changing the technological process. The placement of workshops in the structure of the building should ensure the consistency of product processing and product manufacturing with a minimal length of functional connections and no intersection of technological and transport flows. Production workshops should have the shortest possible connection with storage facilities, as well as with the distribution and washing of table ware. The height of the premises of hot shops and washing rooms is not recommended to be designed below the height of the adjacent dining halls and above 3.6 m.

AISLES IN CATERING ESTABLISHMENTS

Passageways	Width m, not less than
Aisles 1. Between the technological lines of the equipment (tables, washing baths, etc.) when the working places are located in the aisle in two rows with the length of the equipment line, m:	
up to 3	1,2
more than 3	1,5
2. Between the wall and the equipment processing line (co workplace sides)	1
3. Between the technological lines of the equipment (tables, washing baths, etc.) and equipment lines that emit heat	1,3
4. Between the process lines of the equipment that emit heat, as well as between these lines equipment and distribution line	1,5
5. Between the wall and the stove (from the side of the furnace opening):	
with solid fuel	1,5
for other types of fuel	1,25

The distribution room in the enterprises with office service is located in such a way that through the technological and doorways it has a direct connection with the hot and cold shops, the room for cutting bread, the kitchen, washing dishes and the buffet.

Washing of dining room, kitchen utensils, containers of semi-finished products is allowed to be placed in one room; in this case, the washing rooms are separated by barriers with a height of at least 1.6 m. They have free access from the hall and from the distribution conveyor. The path of the service personnel to the washing room should not intersect with the main flow of visitors.

FACILITIES FOR LOADING AND STORING PRODUCTS

The rooms for loading and storing products — storage rooms that are cooled and uncooled — must be designed as a single unit — a functional area that has a direct connection with freight elevators and a connection with other rooms through production corridors. In front of the loading room there is an *unloading platform*, which has a height of 1.1-1.2 m, a width of 3 m, and a length calculated to be at least 3 m. Platforms are designed based on the condition of unloading vans from the rear and right sides. A canopy with a height of 3.6 m should be provided above the unloading platforms completely covering the platform and the van by at least 1 m. *Storage facilities* should be located on the ground floor or in the basement on the side of the utility area and the loading area. At the same time, it is necessary to organize the shortest possible connections with the production premises. The height to the bottom of the protruding vent blocks in industrial, warehouse and household premises is allowed to be equal to 2.5 m.

The food storage rooms **must have a direct connection to the loading room and must not be passageways. They are not allowed to be placed under washing and sanitary units, as well as under production facilities with ladders. When designing storage facilities, it should be possible to unload vegetables directly into the vegetable storeroom, bypassing the loading room.**

The cooled chambers **must be placed in the form of a single unit with an entrance through the vestibule with a depth of at least 1.6–1.9 m. The dimensions of the cooled chambers in the plan should be at least 2.2 × 2.4 m, height — at least 2.7 m. They are not allowed to be placed near co-boilers, boilers, showers and other rooms with high temperature and humidity, above or below these rooms. Cooling chambers should be designed in large catering establishments — with a dining room capacity of 300 or more seats. In canteens, restaurants and cafes of smaller capacity, large refrigerators are used.**

LECTURE 14.

CAR PARKING LOTS

CLASSIFICATION OF CAR PARKING LOTS AND BASIC DEFINITIONS

Car parking lots include:

- facilities for storing cars (garages and parking lots);
- facilities for car maintenance (car washes, gas stations, service stations).

Car parking lot is a building, part of a building structure or a special open area intended only for storing cars.

Garage for cars is a building that includes three groups of premises: a parking lot, production and storage facilities (premises for technical repairs, service, car wash, tire repair, paint and varnish materials warehouse) and administrative and household premises (cloak rooms for drivers, showers, sanitary units, a dining room or buffet, administration offices).

Garages and parking lots are classified according to various characteristics:
— depending on the enclosing structures: closed and open;
— relative to the earth's surface: underground and aboveground;
— on devices for moving cars between floors: ramp and mechanized;
— according to the internal layout of the car storage area: box and manege types;
— by type of storage: permanent or temporary.

Closed-type aboveground parking is a parking lot with external wall fences.

Underground parking is a room associated with the storage of cars in the basement, as well as in the basement with the mark of the top of the ceiling not higher than 2 m from the level of the planning mark of the ground.

Open-type parking is a parking lot without external wall fences. An open-type parking lot is also a structure that is open from at least two opposite sides of the longest length.

Parking lots with ramps is parking lots that use a series of constantly rising (falling) floors or a series of connecting ramps between the floors that allow the car to move on its own traction from ground level to the top and back.

Mechanized parking is a parking lot where cars are transported to storage areas (cells) by special mechanized devices (without the participation of drivers).

PARKING GARAGE IN HANOVER

SALVATORE-GARAGE IN MUNICH

GARAGE IN YEKATERINBURG

GARAGE IN VOLGOGRAD

PLACEMENT OF GARAGES AND PARKING LOTS ON THE PLOT

Garages and open parking lots for permanent storage of cars are provided in residential and adjacent industrial areas at the rate of at least 90% of the estimated number of individual cars with a pedestrian accessibility of no more than 800 m. Open parking lots for temporary storage of cars are provided near the objects of periodic or episodic visits and are carried out at the rate of at least 70% of the estimated fleet of passenger cars. The length of pedestrian approaches from parking lots for temporary storage of passenger cars to objects in public recreation areas should not exceed 1000 m.

The size of land plots of garages and parking lots of cars, depending on the number of floors per 1 parking space, m2 :
— single-storey garages — 30 m2;
— two-storey buildings — 20 m2;
— three-storey buildings — 14 m2;
— four-storey buildings — 12 m2;
— five-storey buildings — 10 m2.
The shortest distance from the entrance to the garages to the intersections of main streets is 50 m, to local streets — 20 m, to passenger transport stops — 30 m.
Distances from ground and ground-underground garages, open parking lots intended for permanent and temporary storage of passenger cars, and service stations to residential buildings and public buildings, as well as to the sites of schools, kindergartens, and medical institutions of stationary type located on residential territories, should be taken at least as shown in the table.

Buildings to which the distance is determined	Distance, m					
	from garages and open parking lots with the number of passenger cars				from service stations with the number of posts	
	10 or less	11 – 50	51 – 100	101 – 300	10 or less	11 – 30
Residential buildings	10	15	25	35	15	25
The ends of residential buildings without windows	10	10	15	25	15	25
Public buildings	10	10	15	25	15	20
General education schools and children's educational organizations (up to sections)	15	25	25	50	50	
Medical institutions with inpatient facilities (up to sites)	25	50			50	

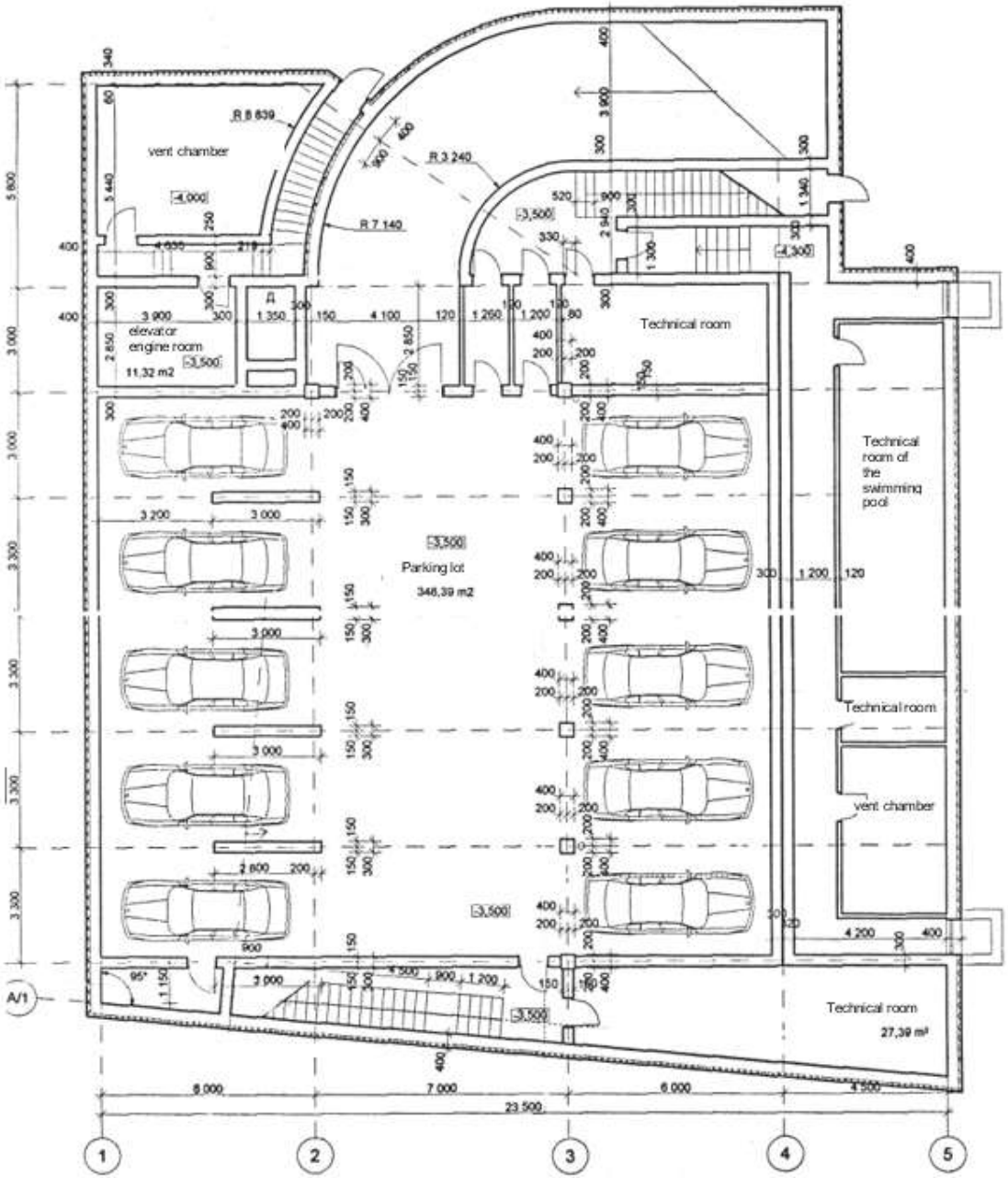
SPACE-PLANNING SOLUTION

Parking car lots can be placed above or below ground level, consist of underground and aboveground parts (underground and above-ground floors, including using the roof of the building). They must be attached to the buildings for other purposes or embedded under these buildings in the underground, a basement, ground floor or lower floors above ground. Also they are posted on a specially equipped outdoor area on the ground level. The underground floors of parking lots should include floors with the floor mark of the premises below the planning ground level by more than half the height of the premises.

Dimensions of passenger cars

Car class	Models of representatives	Overall dimensions, mm			Min.external. Overall size radius, mm
		length	width	height	
1	2	3	4	5	6
Passenger cars especially small class	"Oka", " Tavria"	3800	1400 1600	1450	5500
Passenger cars small class	"Zhiguli", "Moskvich", "Ford-Escort", "Volkswagen", etc.	4400	1500 1700	1500	5500
Passenger cars middle class	"Volga", "Audi", "BMW", "Mercedes-Benz"(C200, C320)	4950	1800 1950	1500	6200
The vans are very small class	"RAF", "UAZ", " GAZ "(Autoline), " Jeep»	4500 6000	2000 2100	2200	6900

Parking lots are allowed to be built into buildings of other functional purposes of I and II degrees of fire resistance, with the exception of children's educational organizations, schools and medical and preventive institutions. Above-ground parking can be provided with a height of no more than 9 floors, underground-no more than 5 underground floors. The parameters of the car storage locations depend on the car class. From a planning point of view, depending on the type of car storage, there are manege and box parking types. The dimensions of parking spaces are determined depending on the nature of the placement of cars and the type of storage.


vent chamber
R 8.839
R 3.240
R 7.140
-4,000
-3,500
-4,300
elevator engine room
11,32 m2
Technical room
Technical room of the swimming pool
Parking lot
346,39 m2
Technical room
vent chamber
Technical room
27,39 m²
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2
3
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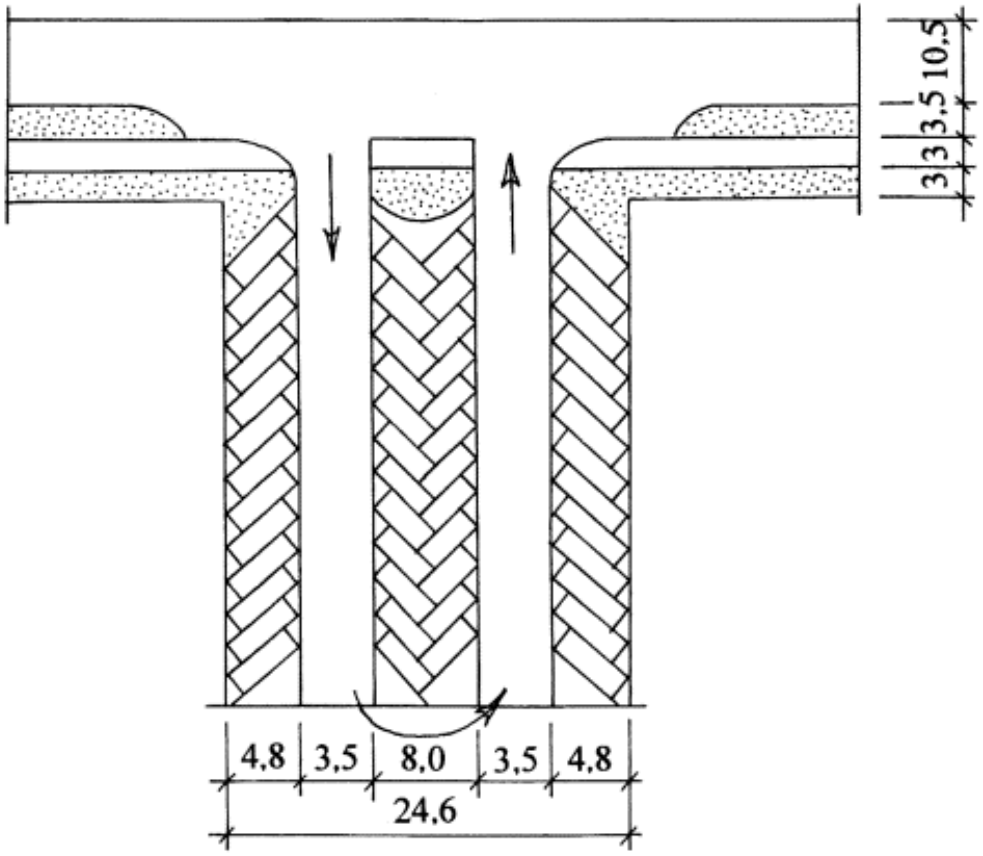
6 000
7 000
6 000
4 500
23 500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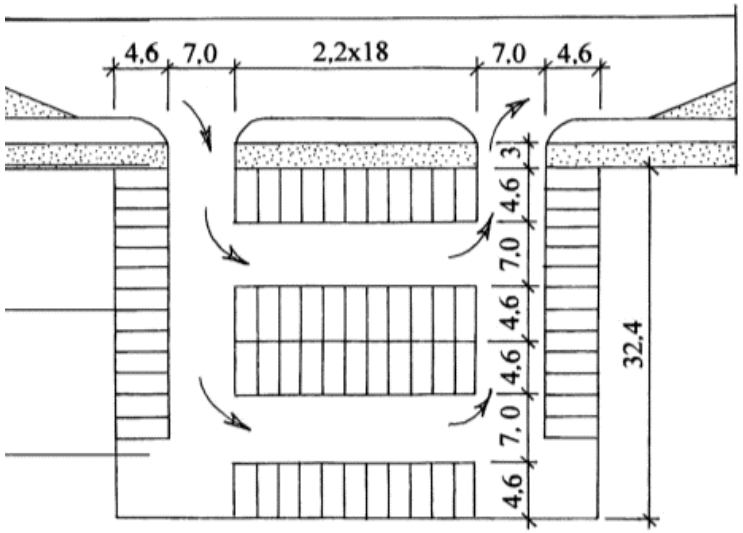
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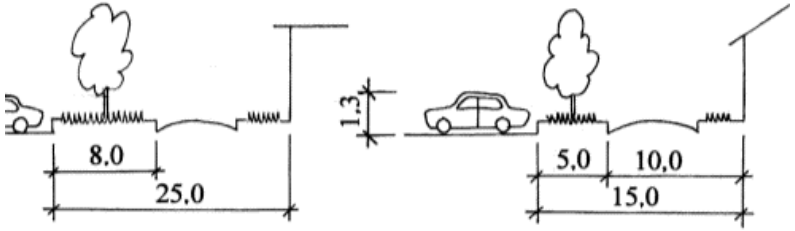
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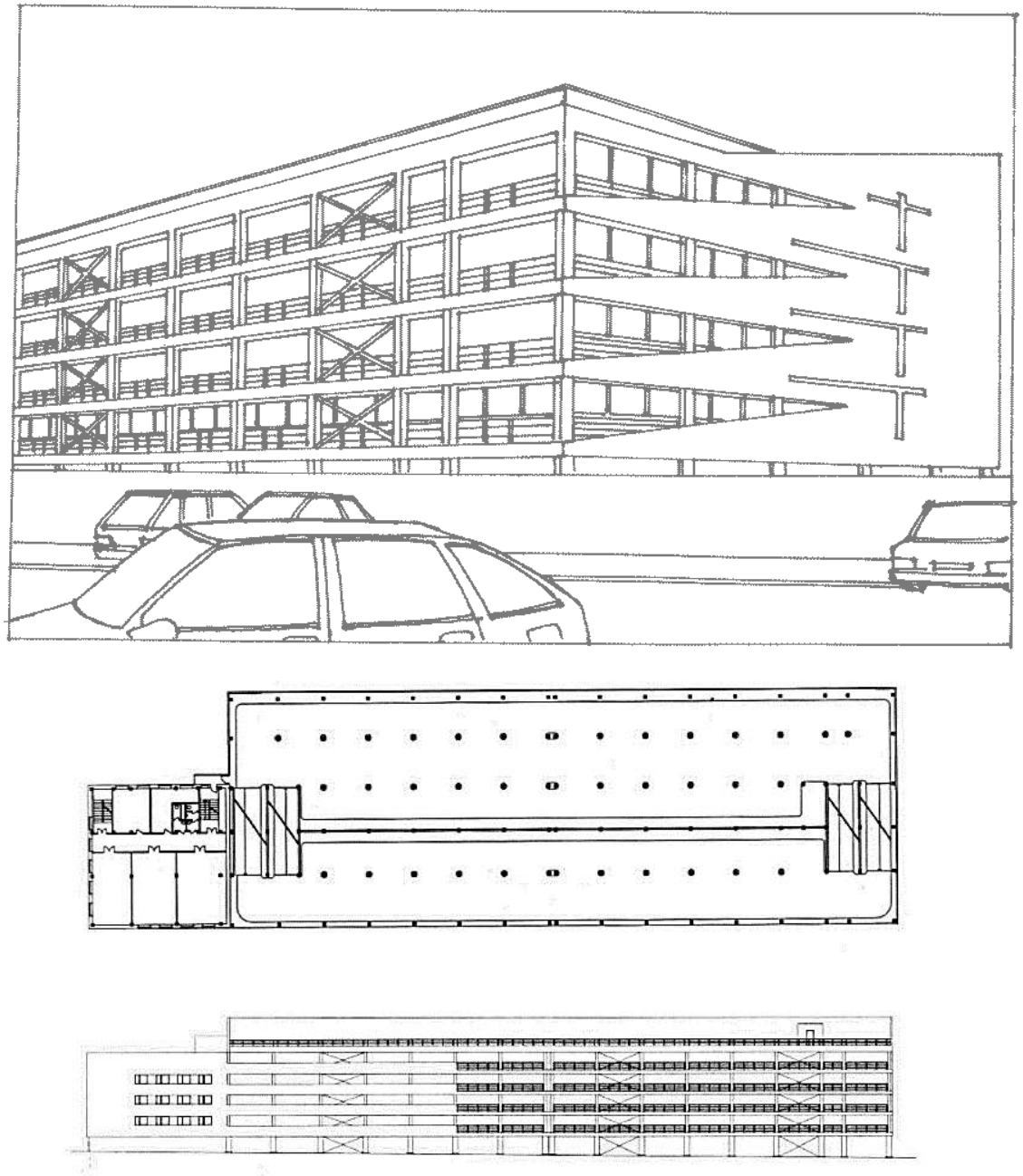
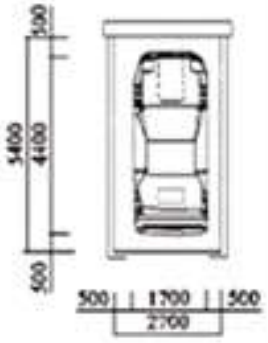
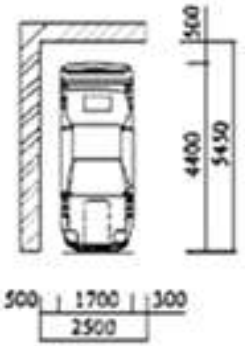
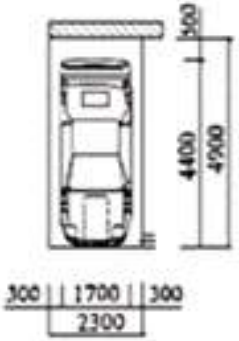
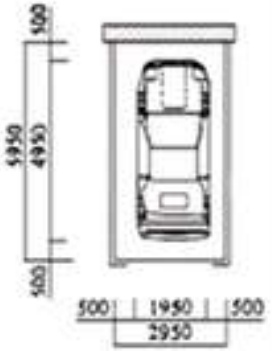
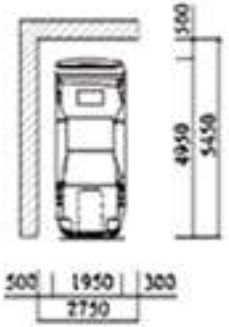
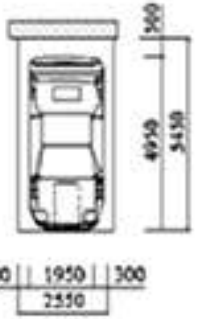
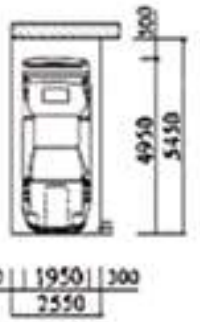
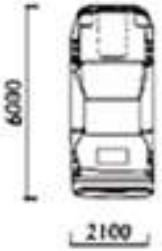
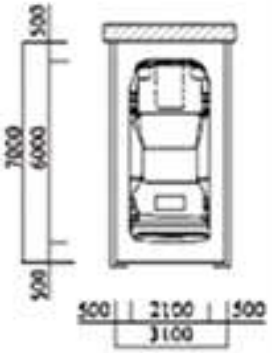
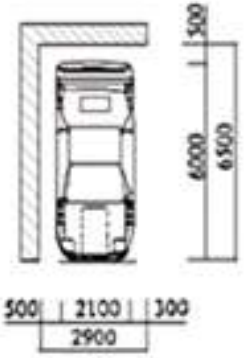
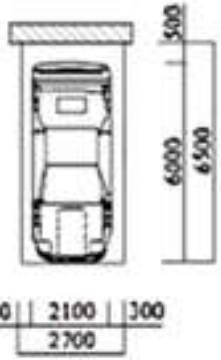
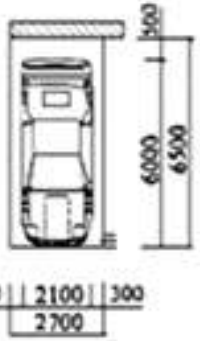
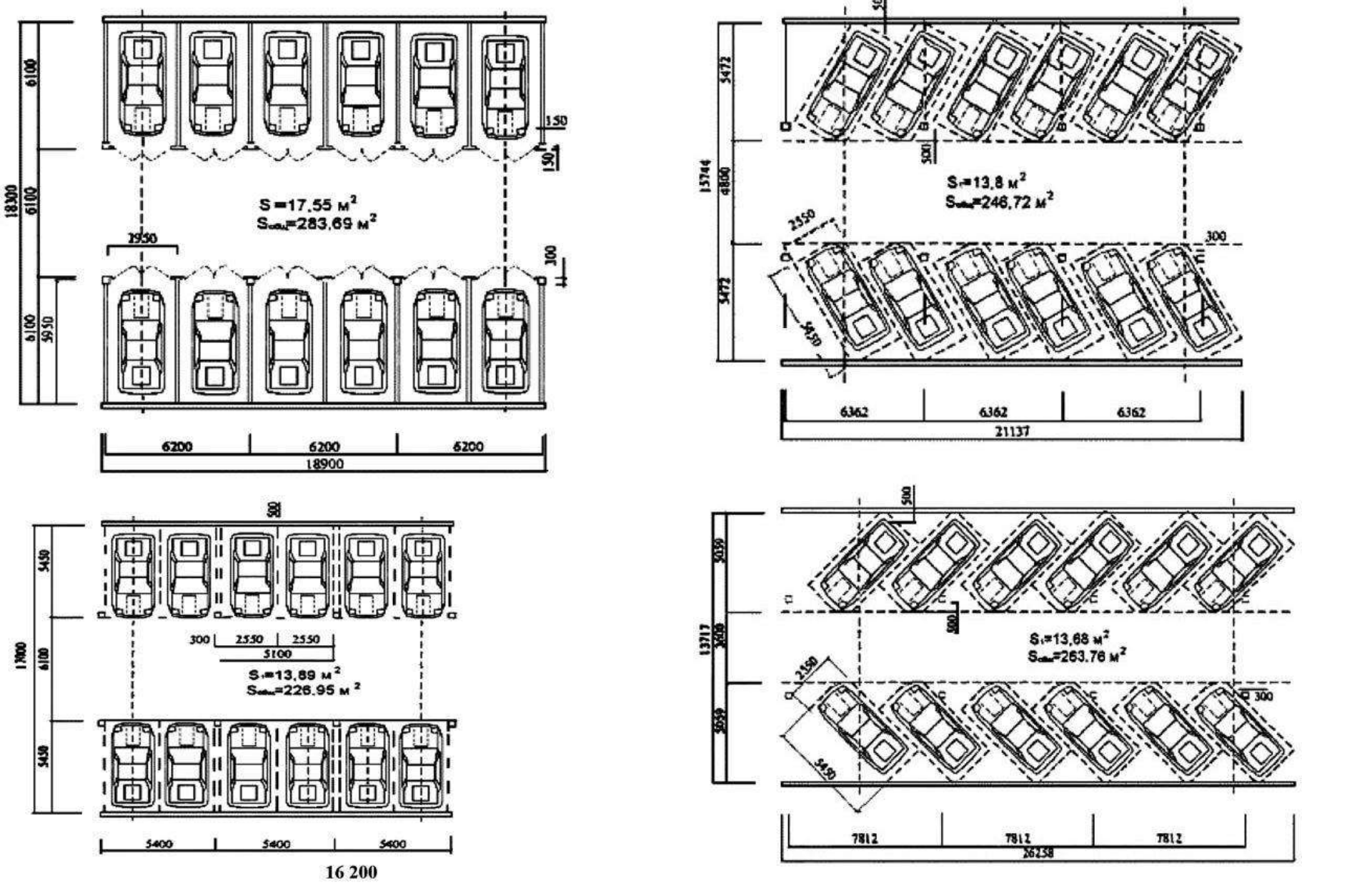
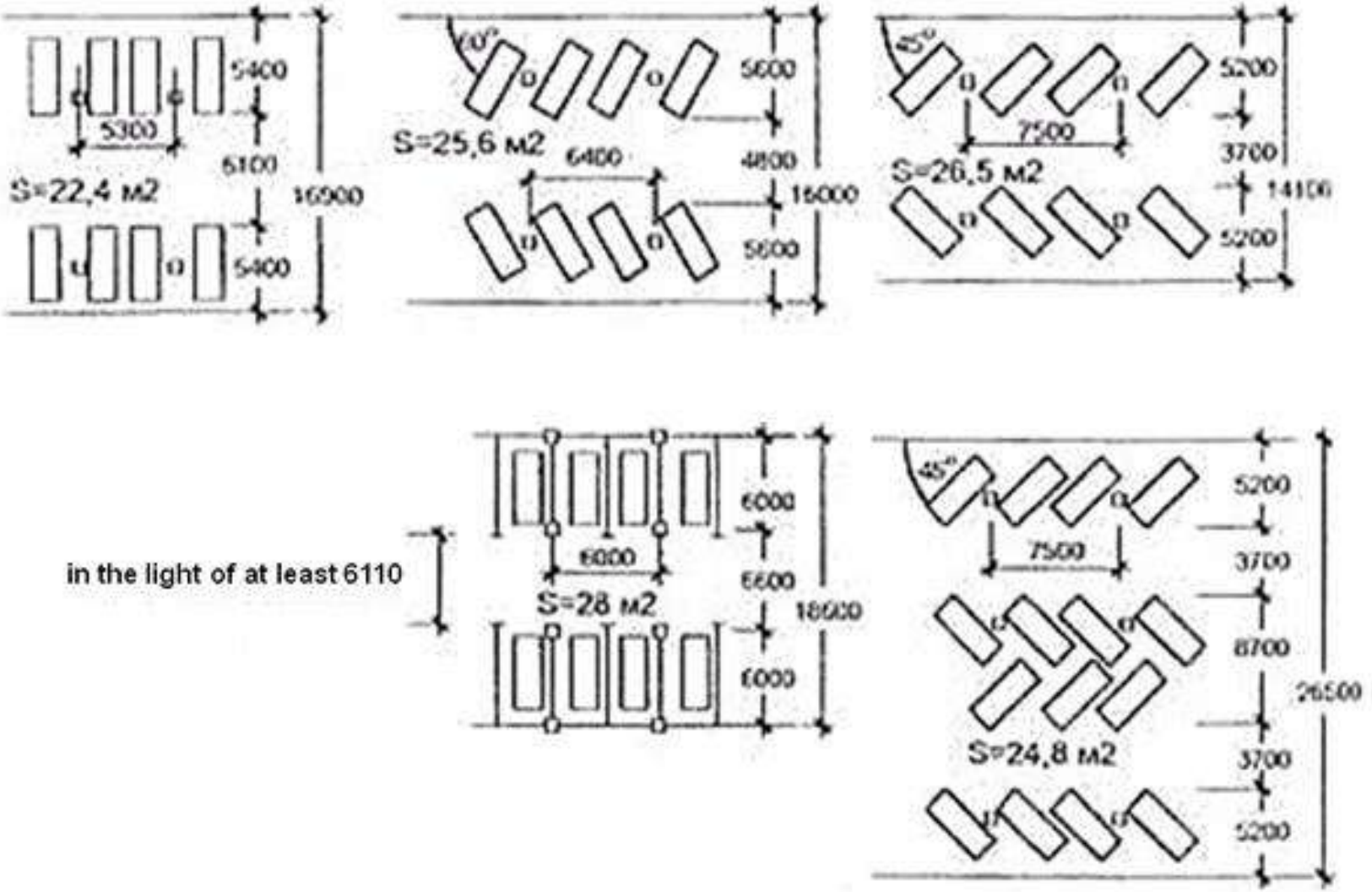


Garage on the 9th Park Street in Moscow,
architect N. Lyzlov, O. Kaverina, A. Krasnov, 2000-2003

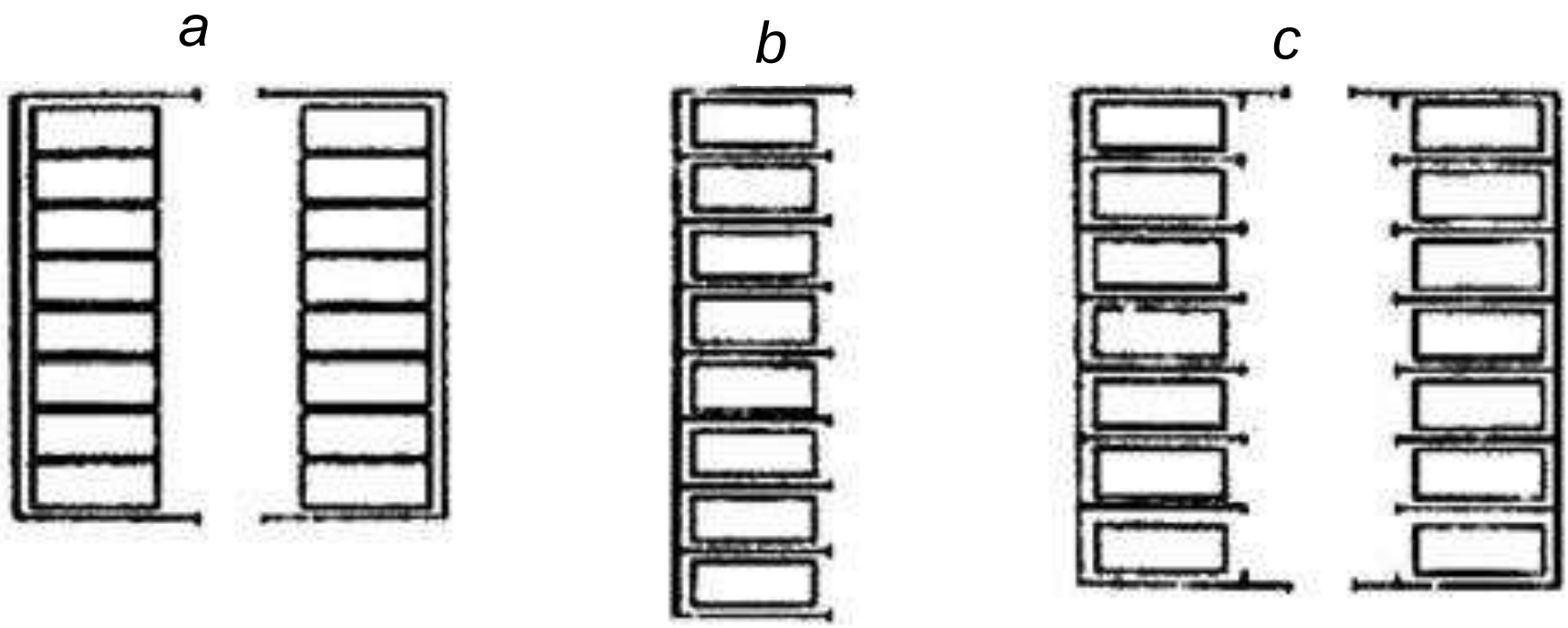
Car class	Vehicle dimensions, mm	Dimensions of the parking space, mm			
		Box storage	Arena storage		
			Angular location	Rank-and-file location	Rank-and-file arrangement at the column
Small					
Average					
«Jeep»					



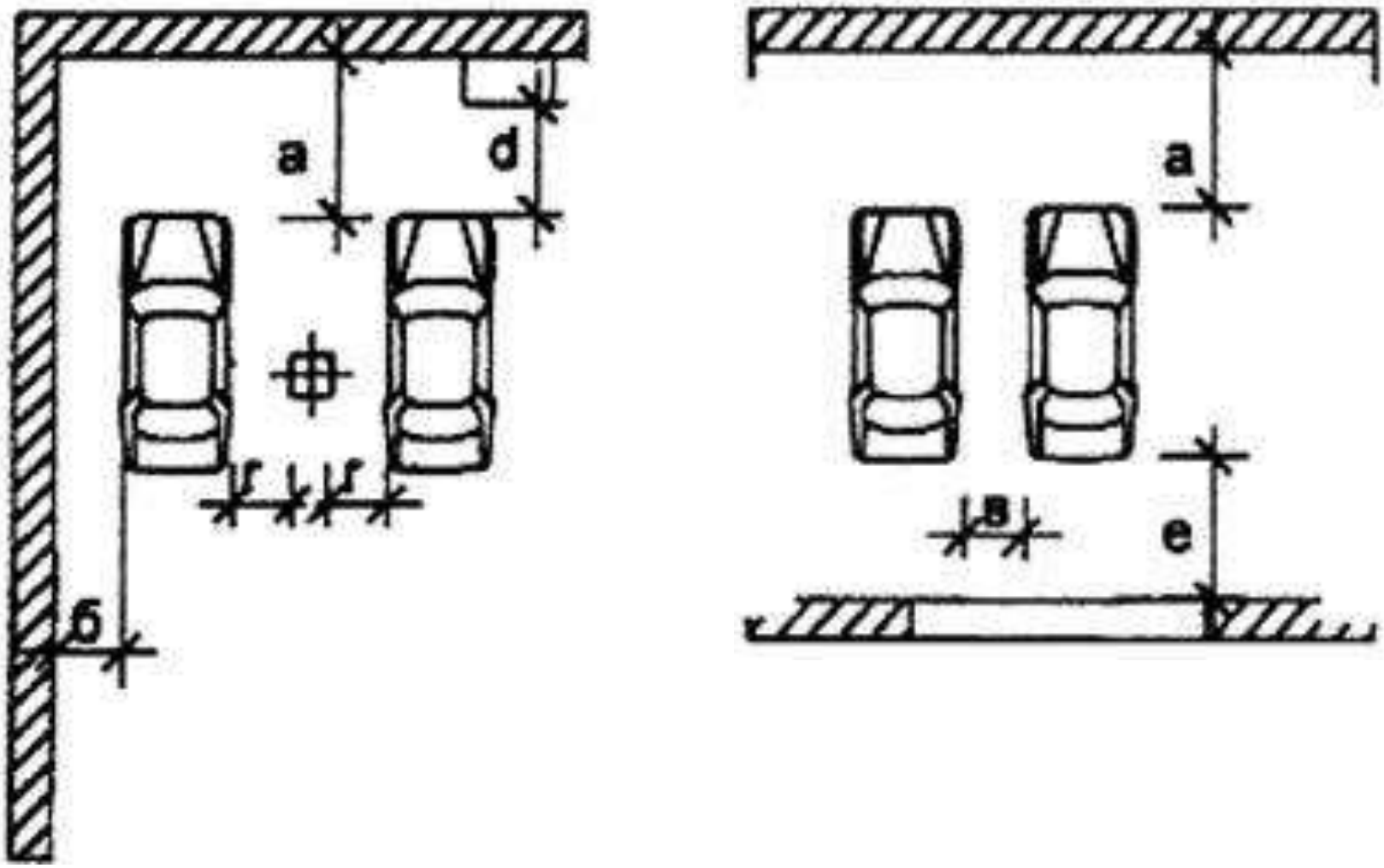
Fragments of plans for the placement of middle-class cars:
1 — box storage; 2 — arena storage, placement at an angle of 90°; 3 — arena storage, placement at an angle of 60°; 4 — arena storage, placement at an angle of 45°



The location of the storage locations and the internal passages for middle class car (dimensions are shown in millimeters)



Planning types of parking lots:
a — manege; b — box; c - box in an enclosed space



Protection zone in places of car storage. The distance from cars

In the buildings of car parking lots, it is allowed to provide service rooms for service and on-duty personnel (control and cash points, control room, security), technical purposes (for engineering equipment), sanitary blocks, a storage room for customers ' luggage, rooms for the disabled, elevators for people.

If it is necessary to set up premises for car service and repair posts, diagnostics, washing, etc. as part of a parking lot, a separate building, room or group of rooms should be provided for this purpose. These entrances must be isolated from the entrances to the parking lot, and the height of these premises must be at least 2.8 m. In parking lots built into constructions of other purposes, it is not allowed to provide common conventional stairwells and common elevator shafts. To ensure the functional connection of the parking lot and other buildings stairwells of the parking lot are usually recommended to be provided in the lobby of the main entrance of the specified building with the installation of air-lock vestibules on the floors of the parking lot in case of fire.

It is necessary to provide ramp (ramps) inter-floor floors, or special elevators (mechanized devices) for moving cars in multi-storey buildings of parking lots. The number of ramps and, accordingly, the number of necessary exits and entrances in parking lots are determined depending on the number of cars located on all floors, except the first (for underground parking — on all floors), taking into account the mode of use of the parking lot. As a rule, the type and number of ramps can be accepted for the number of cars:

— up to 100 — one single-track ramp with the use of appropriate signaling;

— up to 1000 — one double-track ramp or two single-track ramps;

— over 1000 — two double-track ramps.

Ramps in parking lots must meet the following requirements:

- the width of the roadway of single — track ramps should be:

for straight-line-the width of the car + 0.8 m, but not less than 2.5 m;

- for curved — the width of the lane formed in the plan by the projection of a moving car, + 1 m, but not less than 3.5 m;

- the longitudinal slope of closed straight ramps along the axis of the traffic lane should be no more than 18%, curved ramps — no more than 13%, the longitudinal slope of open ramps (not protected from snow and rain) — no more than 10%;

- the transverse slope of the ramps should not be more than 6%;on ramps with pedestrian traffic, a sidewalk with a width of at least 0.8 m must be provided.

From each floor of the fire compartment of parking lots (except for mechanized parking lots), at least two dispersed evacuation exits must be provided directly to the outside or to the stairwells. It is allowed to provide one of the evacuation exits on an isolated ramp. The permissible distance from the most remote storage location to the nearest evacuation exit should be taken from the table:

Type of parking lot	Distance to the nearest evacuation exit at the location of the vehicle storage area, m	
	between evacuation exits	in the dead-end part of the room
Underground Aboveground	40 60	20 25

In buildings of parking lots in which the ramp at once serves as an escape route, a sidewalk with a width of at least 0.8 m is arranged on one side of the ramp. Stairs as escape routes must have a width of at least 1 m.

In places of passage and storage of cars, the height of the premises and gates from the floor to the bottom of the protruding structures and suspended equipment must be at least 0.2 m higher than the maximum height of the car and be at least 2.2 m; on the ramp, it is allowed to reduce it to 2.0 m. Minimum dimensions of storage places:

the length of the parking lot is 5.0 m, width is 2.3 m (for disabled people using wheelchairs — 3.5 m).

Car storage facilities may be provided without natural light or with insufficient natural light due to biological effects.

MECHANIZED PARKING LOTS FOR PASSENGER CARSCARS

The composition and area of the premises, storage cells (places), and parameters of parking lots are accepted in accordance with the technical features of the car parking system used. The control of the mechanized device, control over its operation and fire safety of the parking lot should be carried out from the control room located on the landing floor.

A parking block with a mechanized device can have a capacity of no more than 50 parking spaces and a building height of no more than 28 m.

Each of the blocks of the mechanized parking lot must be provided with an entrance for fire trucks and the possibility of access for fire departments to any floor.

Underground parking in the residential complex "Champion-Park" in Michurinsky Prospekt in Moscow, "Archproekt-2", 2012

For underground parking, the following requirements must be met:

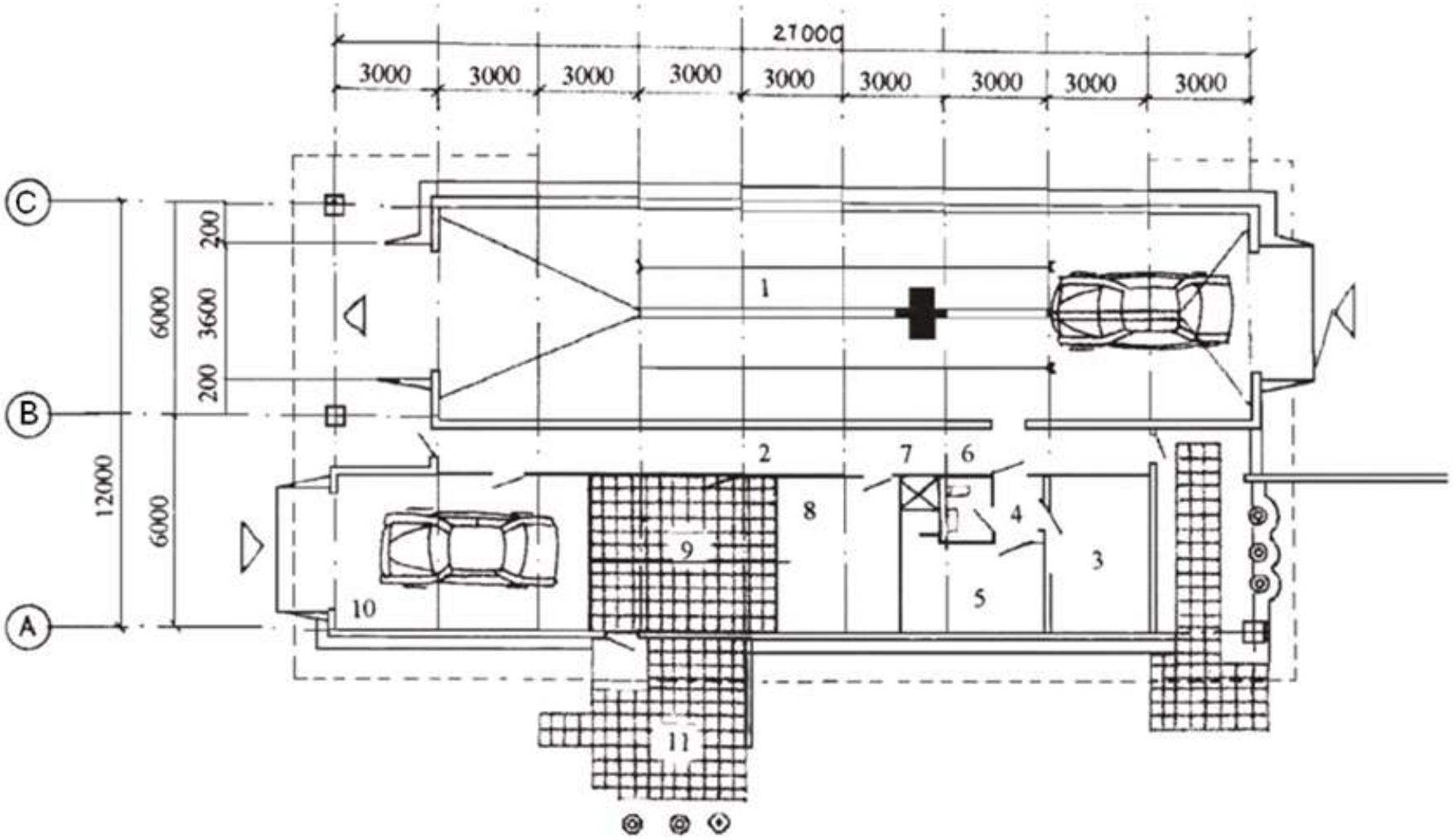
- they are only allowed to accommodate rooms for storing cars;

- garages of the manege type should be divided into sections with a capacity of no more than 100 cars in each;

- each section of the underground parking lot must have two dispersed entrances and exits;

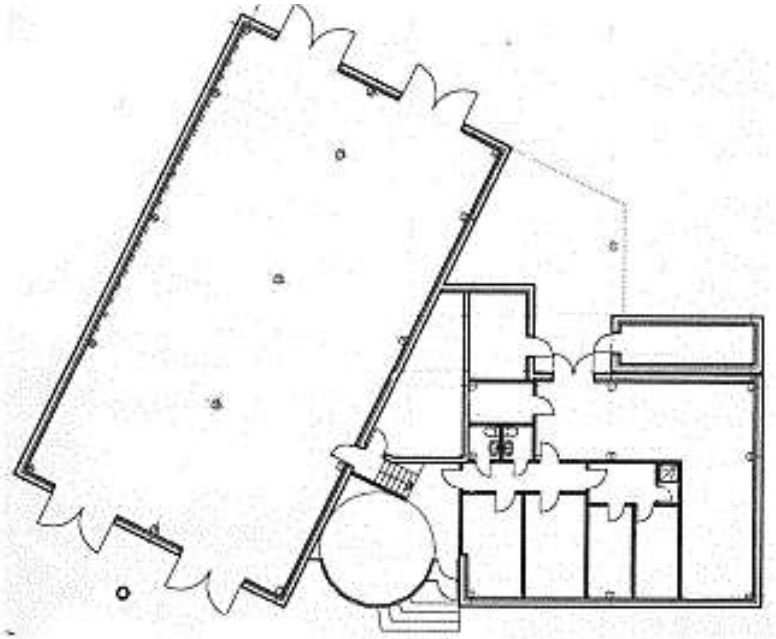
-each section of the underground parking lot must have two evacuation exits for people; in underground parking lots, it is not allowed to divide the parking spaces by partitions into separate boxes;

- in underground parking lots with two or more underground floors, exits from underground floors to stairwells and exits from elevator shafts should be provided through floor-level vestibule-locks with air supply in case of fire.



Washing car station


ФАВОРИТ • МАГАЗИН • КАФЕ • АВТ
МОЙКА



LECTURE 15.

ARCHITECTURAL DESIGN OF PUBLIC BUILDINGS TAILORED TO THE NEEDS OF THE DISABLED AND LOW-MOBILITY GROUPS OF THE POPULATION (LMG)

When designing public buildings and structures, as a rule, equal opportunities for obtaining services should be created all population groups, including those with limited mobility. List of facilities (buildings, structures, facilities, service areas) available for persons with disabilities, set design task, approved in the prescribed manner by agreement with the local authority social protection of the population and taking into account the views of public associations of persons with disabilities. Design solutions, designed devices and activities designed for low-mobility visitors should not reduce the efficiency of the operation of buildings, as well as the comfort of receiving services for other categories of visitors.

Disabled people with disabilities of the skeletal system, visual and hearing impairments, people with temporary health problems, pregnant women, elderly people, people with prams, etc. should be included in the low-mobility population groups. These are people who experience difficulties when moving independently, receiving services, the necessary information or when navigating in space. It should be noted that the buildings of specialized institutions for the disabled and the elderly are designed according to special standards.

The quality of design solutions for public buildings accessible to people with limited mobility should be got if the following mandatory requirements are met:

- accessibility of the service area, ensuring the smooth movement of visitors;
- safety of traffic routes, places of service and recreation for visitors;
- ensuring complete and high-quality information;
- comfort of the environment of stay and service of visitors.

ACCESSIBILITY REQUIREMENTS

The accessibility criterion requires the creation of the following conditions in the project:

— unhindered access to the building;

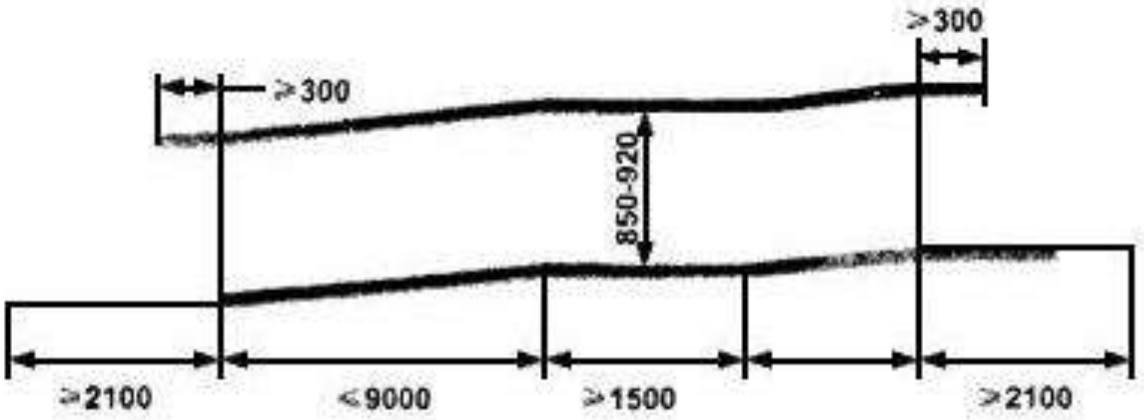
— unhindered movement along the communication paths in the building;

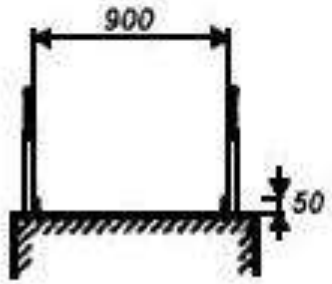
— reaching the destination or service location and using the provided features.

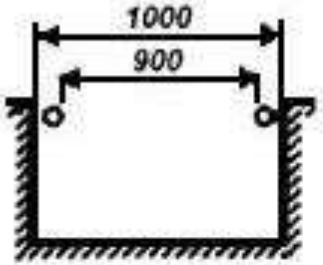
Entrances to buildings and premises on the paths of disabled people should not have thresholds, and if necessary, the device thresholds their height should not exceed 0.014 m. The entrance doors to the building must have a width in the light of at least 1.2 m. The depth of the vestibules and draft lobby for direct movement and one-way opening of the doors must be at least 2.3 m with a width of at least 1.5 m.

In places where the levels differ, it is necessary to provide ramps with a slope of no more than 1 : 20 (5%). The length of the ramp march should not exceed 9.0 m. Every 8.0–9.0 m of the length of the straight ramp march, a horizontal platform should be arranged, the length of which should be at least 1.5 m. At the upper and lower ends of the ramp, a free zone of at least 1.5 x 1.5 m should be provided, and at least 2.1 x 2.1 m in areas of heavy use. Free zones should also be provided for each time the ramp direction changes, the ramp width for one-way traffic must be at least 1 m, and for two-way traffic — at least 1.8 m. The maximum height of one ramp should not exceed 0.8 m. At the difference in the height of the floor on the tracks 0.2 m or less is allowed to increase the slope of the ramp to 10%. On temporary structures or temporary facilities, the maximum ramp slope is 1 : 12 (8%), provided that the vertical rise between the platforms does not exceed 0.5 m, and the ramp length between the platforms does not exceed 6.0 m.

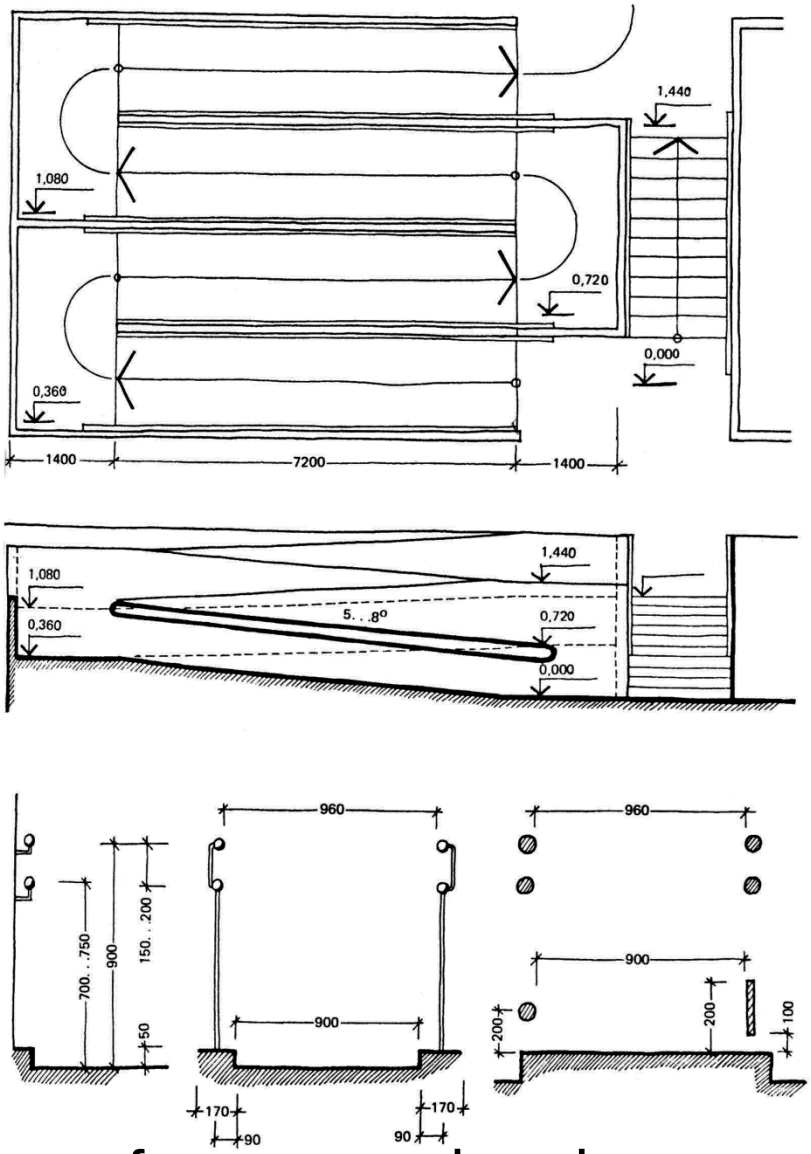
The platform for turning should be the same width as the flight of stairs or ramps and have a depth on the horizontal section of at least 1.5 m. The transverse slope of the steps, ramps and entrance platforms should not exceed 2%. Ramps with a height difference of more than 3.0 m and an estimated length of 36.0 m should be replaced with lifting devices. The ramp that serves as an escape route from the second and higher floors must have an exit outside of the building to the adjacent territory.
Along the ramps, there are 5 cm high sides with handrails. Height to the bottom of the protruding structures shall be not less than 2.1 m. the Area to accommodate wheelchairs must have a minimum width of 0.9 m and a minimum length of 1.5 m. the Width between the handrails of the ramp should be in the range of 0.9–1.0 m. The ramp surface must be non-slip, clearly marked with color or texture, and contrasting with the adjacent surface.



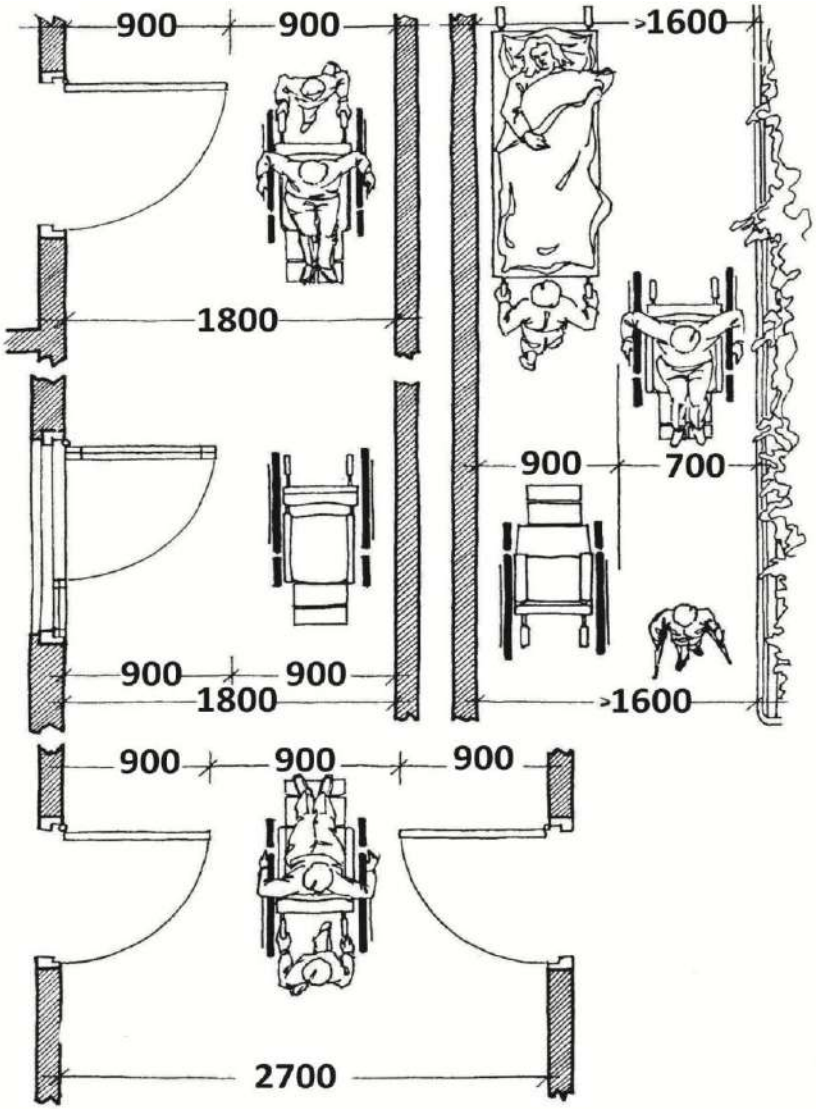




The main overall dimensions of ramps on the paths of LMG traffic (dimensions are given in millimeters)



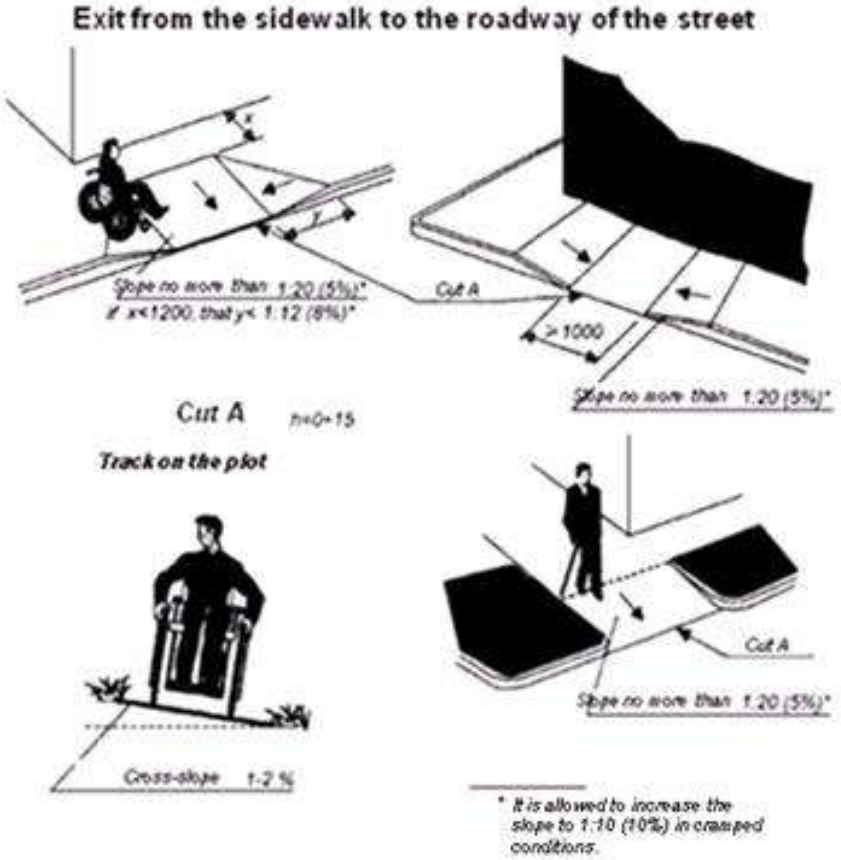
Geometric parameters of ramps and undergroundpassageson the path of movement of disabled people in wheelchairs(dimensions are given in millimeters)

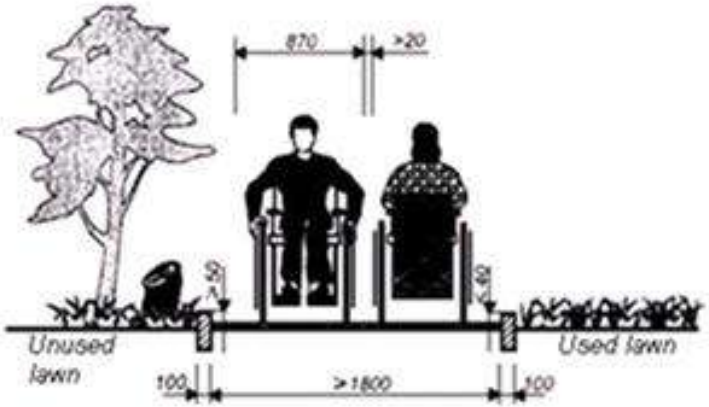


Passageways in public buildings on the path of movement of disabled people in wheelchairs (dimensions are given in millimeters)

The width of the traffic lane of the communication passage in the cleanliness of both the building and the site should be at least 1.5 m when the wheelchair is moving in one direction, and at least 1.8 m when oncoming traffic. Approaches to various equipment and furniture used by visitors with limited mobility should have a width of at least 0.9 m. The dimensions of the space for maneuvering wheelchairs when turning at 90° must be at least 1.3 × 1.3 m, for turning at 180° — 1.3 × 1.4 m, for turning at 360° - 1.4 × 1.4 m. In dead-end corridors, it is necessary to ensure the possibility of a full turn of the wheelchair with a turn radius of at least 0.7 m. The depth of the space for maneuvering the wheelchair in front of the door when opening "from yourself" should be at least 1.2 m, and when opening "to yourself"-at least 1.5 m. The height of the corridors along their entire length and width should be at least 2.1 m in light. The premises, areas and service locations visited by the LMG should generally be located at the level closest to the ground surface. Stairs should be duplicated by ramps or lifting devices. Elevator cab designed for use a wheelchair user with an accompanying person must have an internal dimension of at least 1.7 m wide and 1.5 m deep, and a doorway width of at least 0.95 m.

SECURITY REQUIREMENTS





The safety criterion requires the creation of conditions for visiting public buildings without the risk of trauma.
The ramp that serves as an escape route from the second and higher floors must be directly connected to the exit from the building to the outside. If it is not possible to ensure the timely evacuation of all LMG in the required time, then for their rescue on the escape routes, security zones should be provided in which they can be located until the arrival of rescue teams or from which they can evacuate for a longer time. The safety zone should be an isolated room to protect people with limited mobility from the hazards of extreme events during the time until the rescue work is completed. It is recommended to provide safety zones in the halls of elevators for the transportation of fire departments, as well as in the halls of elevators used by LMG.

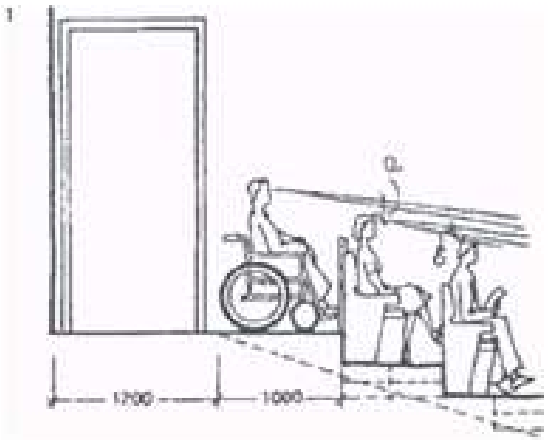
The area of the security zone must be designed for all disabled persons remaining on the floor, based on the specific area per person, provided that it can be maneuvered, m2 / person:

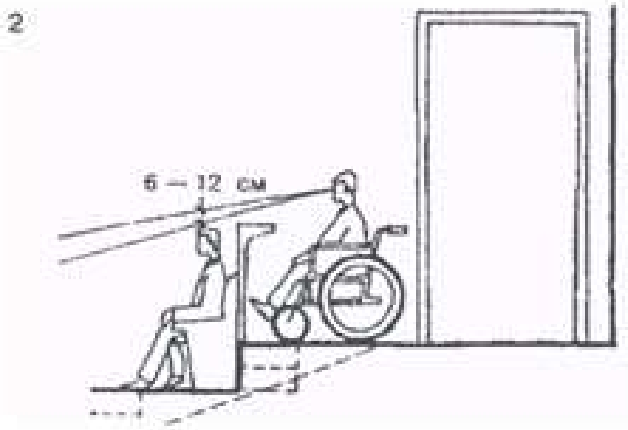
- disabled person in a wheelchair 2.40;
- disabled person in a wheelchair with an accompanying person 2.65;
- disabled person moving independently 0.75;
- disabled person traveling with an accompanying person 1.00.

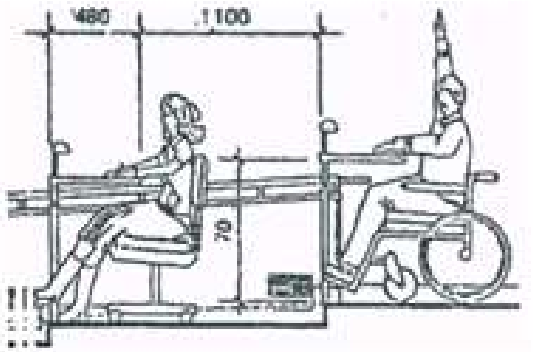
Fences with handrails should be installed along both sides of stairs and ramps, as well as at all height differences of more than 0.45 m. Handrails of ramps, as a rule, are recommended to be placed at a height of 0.7 and 0.9 m, and at stairs — at a height of 0.9 m. The handrail of the inside of staircase must be continuous throughout its entire height. The final parts of the handrail should be longer than the march or the inclined part of the ramp by 0.3 m. All steps within the walkway and stairwell, as well as external stairs, must be of the same geometry and size in the width of the tread and the height of the ascent. Along the longitudinal edges of marches, ramps, along the edge of the height difference of the horizontal surface of more than 0.45 m, bumpers with a height of at least 0.05 m should be provided to prevent the foot, cane, crutch or stroller from slipping. The estimated number of people — employees and visitors, including LMG, in rooms facing a dead-end corridor, should not exceed 30 people.

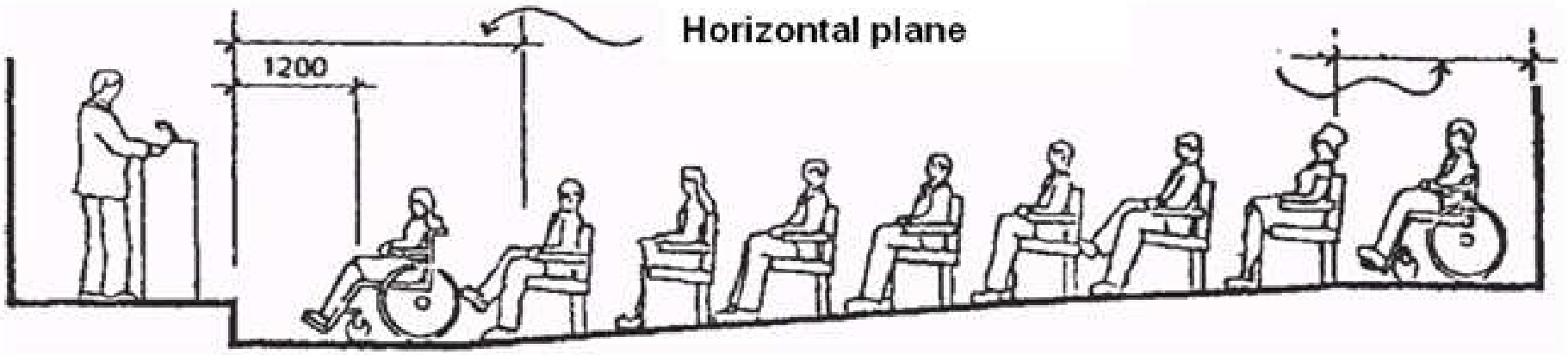
INFORMATION CONTENT REQUIREMENTS

The criterion of information requires the possibility of obtaining and understanding by the consumer of diverse information. The information should be available to all categories of users with limited mobility. It should be continuous, ensuring timely orientation of the visitor, as well as good identification of the objects and places of the visit. The information systems of a public building should be unified within a building or a complex of buildings in a residential area. Entrance points, communications, premises and service areas accessible to visitors with limited mobility, as well as places intended for parking disabled vehicles, must be marked with signs of the established international standard. Visual, audible and tactile information systems should be provided in these locations for the type and location of services provided and for possible hazards.

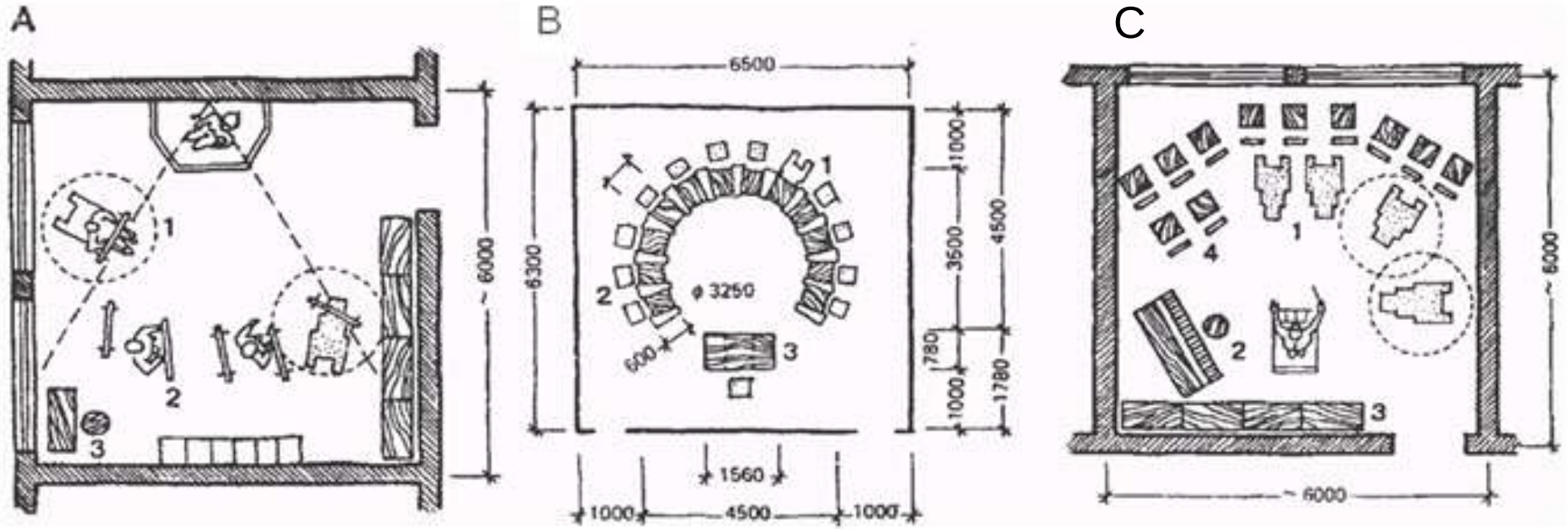




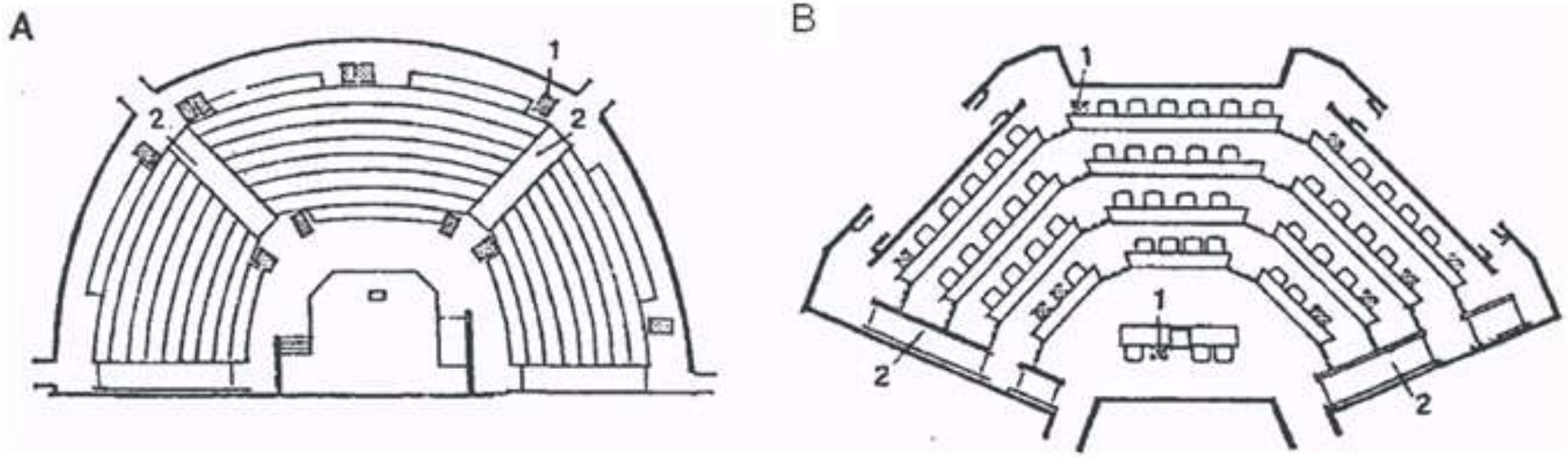




Equipment for wheelchair users in lecture halls and auditoriums



Club rooms:
a — painting studio;
b — universal room; 1 — places for the disabled; 2 — ordinary club places; 3 — teacher's place;
c — music class: 1 — places for the disabled; 2 — piano; 3 — shelves for music; 4 — music stands

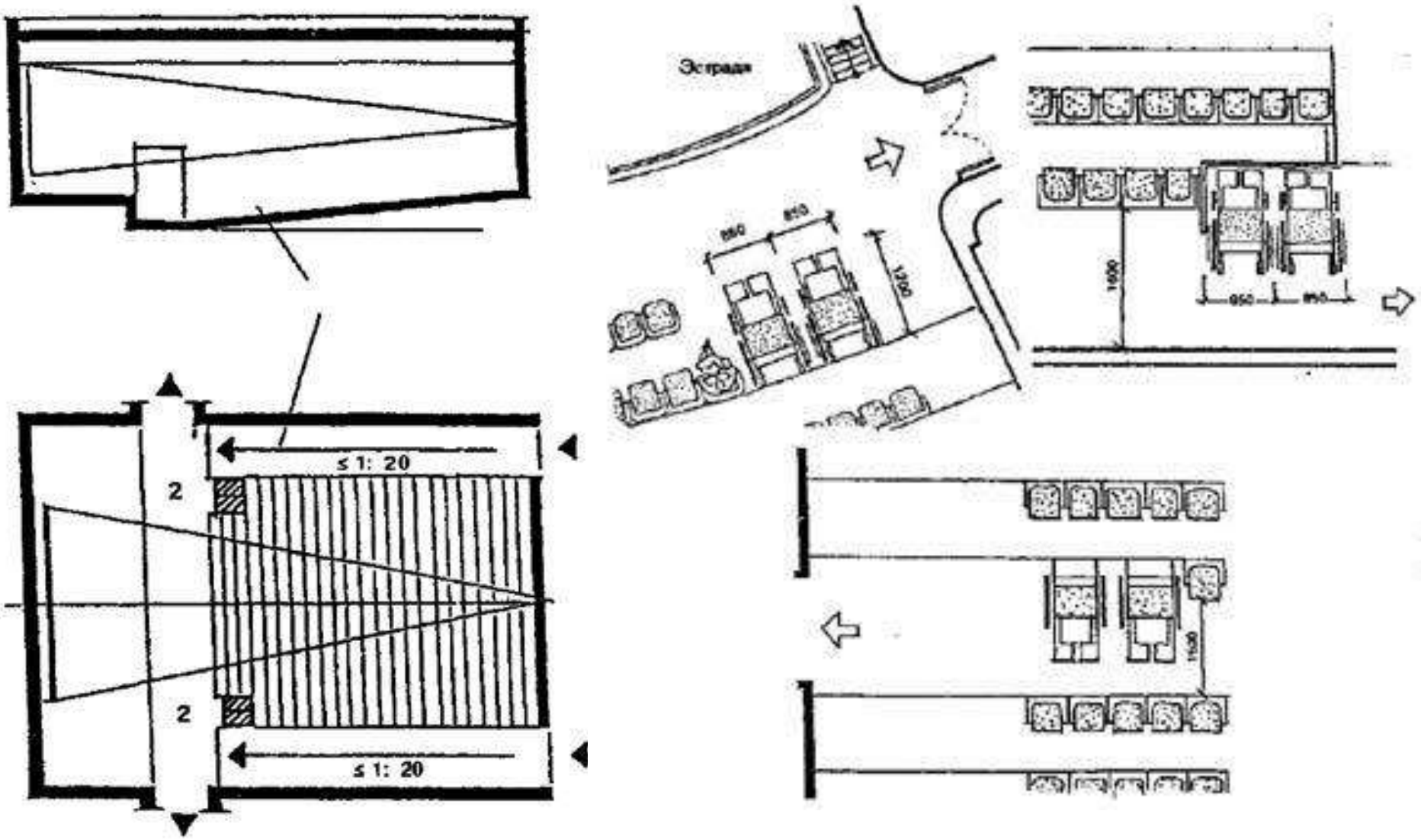


Possible forms of lecture halls and recommended places for wheelchair users:

a — amphitheater with seating and descents in the form of ramps;

b — amphitheater with desks and side ramps;

1 — places for disabled people; 2 — ramps



Example of a solution for loading and evacuating wheelchair users in cinema halls with a ramp slope of less than 1: 20

COMFORT REQUIREMENTS

The comfort criterion implies the following basic requirements:

— creating conditions for minimizing the costs and efforts of the LMG to receive various types of services;

— ensuring timely recreation opportunities;

— reducing the time and effort to obtain a variety of information;

— exclusion of conflict situations between different groups of LMG, taking into account the specifics of the adapted objects.

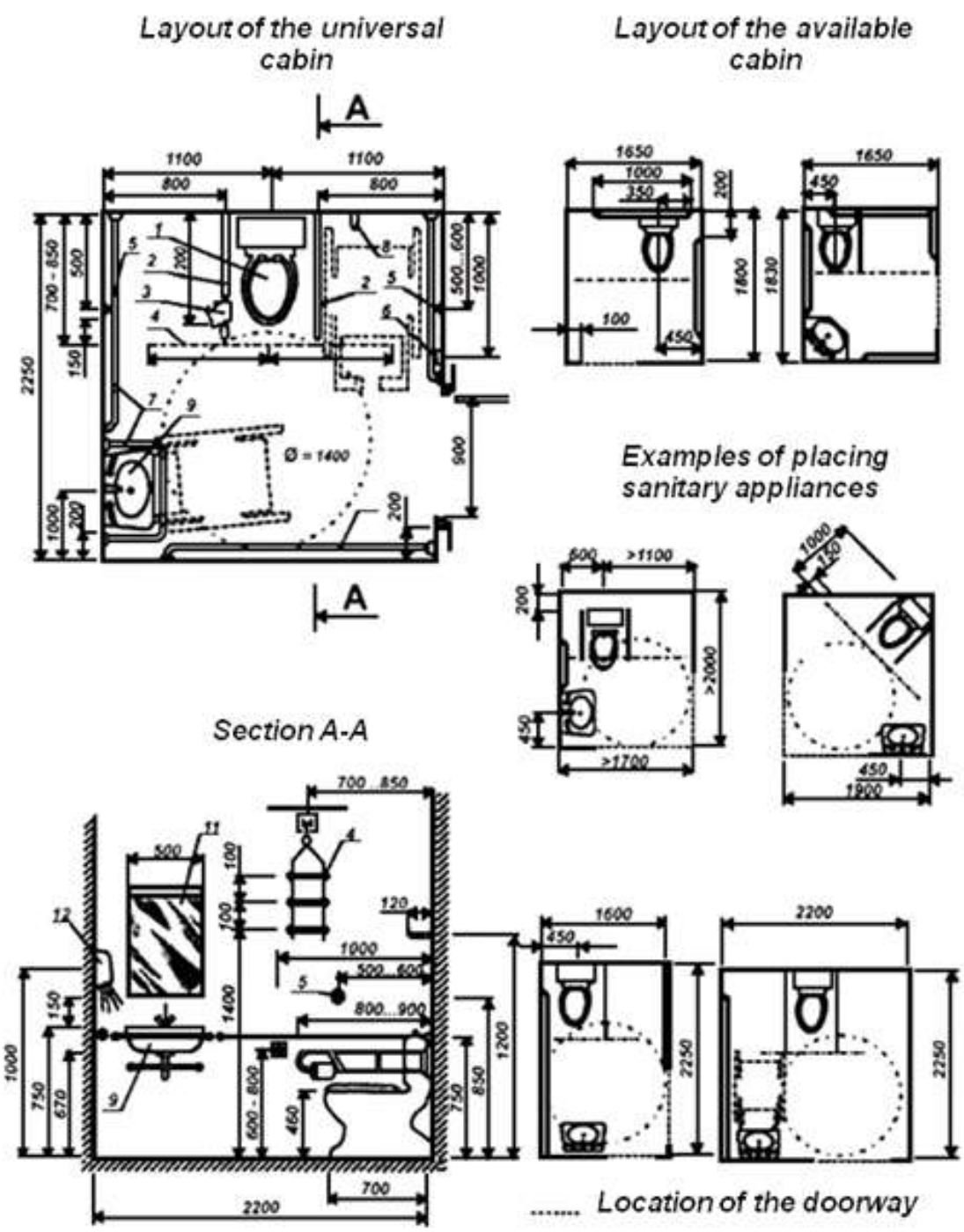
In the visitor service area of public buildings and structures for various purposes, it is necessary to provide places for the disabled at the rate of at least 5%, but not less than one place from the estimated capacity of the institution or the estimated number of visitors, including allocated areas for specialized LMG services in the building.

On each floor, accessible to visitors with limited mobility, it is necessary to provide recreation areas for 2–3 seats, including for the disabled in wheelchairs. If there are several identical places (devices) for servicing visitors, 5% of their total number, but not less than one, should be designed so that the disabled person can use them.

Near tables, counters and other places of service, at wall devices, equipment and devices used by low-mobility visitors, it is necessary to provide free space with dimensions in the plan of at least 0.9 x 1.5 m. When designing interiors, selecting and placing technological equipment and devices it should be assumed that the area of reach for the visitor in the wheelchair should be located at the side of the visitor — not higher than 1.4 m and not lower than 0.3 m from the floor; with a frontal approach — not higher than 1.2 m and not lower than 0.4 m from the floor.

The geometric parameters of the areas used by disabled people, including in wheelchairs, in sanitary facilities of public and industrial buildings, should be taken according to the table:

Name of the company	Dimensions in plan (clean), m
Shower cabins:	
closed,	1,8×1,8
co-open and with a through passage	1,2×0,9
Women's personal care booths	1,8×2,6


Layout of the universal cabin
Layout of the available cabin
A
A
1100
1100
800
800
700 - 850
500
150
2250
1000
200
500...600
1000
900
200
Ø = 1400
1650
1000
350
200
1800
100
450
1650
450
1830
Examples of placing sanitary appliances
600
>1100
200
>3000
450
>1700
1000
120
450
1900
Section A-A
700...850
500
11
100
100
4
120
12
1000
500...600
5
800...900
1400
150
1000
750
670
9
600 - 800
460
1200
850
750
700
2200
1600
450
2200
2250
2250
..... Location of the doorway

In auditoriums, sports and entertainment facilities with fixed seats, seats for people in wheelchairs should be provided at the rate of at least 1% of the total number of spectators, as well as the availability of LMG on the stage.
It is recommended to provide for the service of disabled waiters in the dining halls of catering establishments or in areas intended for service of LMG. The area of such dining rooms should be determined based on the standard area of at least 3 m2 per place. It is recommended to allocate at least 5% of seats in self-catering establishments. If the hall has a capacity of more than 80 seats — at least 4%, but not less than one for people who move in wheelchairs and people with visual impairments with an area of each seat of at least 3 m2.

It is necessary to provide at least 4% of the seats with built-in individual listening systems in classrooms, auditoriums and lecture halls with a capacity of more than 50 people, equipped with fixed seats.

The standard of illumination of places, rooms and communications accessible to low-mobility visitors should be increased by one step. The difference in illumination between adjacent rooms and zones should be no more than 1 : 4.

All passageways (except one-way) must provide the possibility of turning 180° with a diameter of at least 1.4 m or 360° with a diameter of at least 1.5 m, as well as front (along the aisle) service for wheelchair users together with an accompanying person. It is recommended to provide for widening with a depth of 1.8 m and a length of 3.0 m every 10–15 m of the length of the corridor, but not less than one per corridor if the width of the passage is not more than 1.8 m.

LECTURE 16.

TRAIN STATION BUILDINGS

PLACEMENT OF RAILWAY STATIONS ON THE CITY PLAN. GENERAL SITE PLANS

The site for the construction of a railway, sea, river or bus station, as a rule, is recommended to choose from the largest built - up areas of the city due to its relative distance in relation to the main functional areas (labor, life and recreation) of the city and region.
Train stations should be connected by convenient transport routes to residential areas of the city, areas and objects of mass traction of urban or regional importance, industrial zones, since the passenger does not finish his trip at the station, and, as a rule, only changes one type of transport to another — most often external transport to intra-city or vice versa.

Railway stations are classified according to a number of characteristics:
— by the purpose or types of vehicles used and the corresponding types of passenger services: long-distance, sea, river and bus stations, as well as air terminals at airports and city air terminals;
— according to the terms of placement on highway: terminal or dead-end stations, where the majority of passengers end their trip on external transport; junction stations, located at the intersection of external transport lines, where a significant part of passengers make transfers, and intermediate stations, located between terminal and hub stations (ports, airports);
— by the prevailing categories of passengers served in accordance with the main types of passenger services: international, long-distance, local, suburban, intra-city;
— by capacity and the corresponding one-time capacity: small, medium, large and huge.
The arrangement of combined stations is recommended in the presence of significant flows of passengers transferring at a particular node from one type of mainline, local or suburban transport to another. Combined stations: railway — bus; river — bus; sea — bus; sea — railway.

The station complex consists of the following interconnected elements:
— the station square with public transport stops, parking lots and other facilities;
— main passenger, service-technical and facility buildings and structures, landscaping elements, small architectural forms;
— passenger platforms for receiving and sending railway passengers, berths and piers of sea and river ports, internal transport territory of bus stations and passenger bus stations, airport platform. Passenger platforms is a part of a passenger railway station territory, a passenger area of a sea or river port, an airport, intended for boarding and disembarking of passengers, parking and maneuvering of appropriate vehicles, as well as loading or unloading luggage, mail, etc.

Within the station complexes, the basic rules for organizing the main pedestrian paths should be observed:
— the paths of pedestrians (passengers and visitors) should be convenient, short and straight, without unnecessary ascents and descents; the average length of the pedestrian path of passengers from the stopping points of urban public transport to a place in a train compartment, a cabin of a sea or river vessel, a seat in an intercity bus or the cabin in the aircraft should not exceed 300 m in huge, large and big cities, 200 m in medium and small cities;
— the pedestrian paths (passengers and visitors) should be safe, with a minimum number of intersections with the paths of all types of urban, service and additional transport and external transport;
— there must be a complete or partial separation of the main oncoming and intersecting passenger flows in the building itself, on the station forecourt and on the platform;
— it is necessary to provide special facilities-access ramps with handrails in addition to the stairs (for small ascents and descents); when boarding and disembarking from a vehicle, access ladders for the disabled and the elderly, as well as passengers with small children in prams;

— to reduce the time spent by passengers on any operation, the area, size and capacity of all the rooms and elements of the station should be proportional to its estimated capacity, with the exception of the so-called “bottlenecks” and the risk of congestion and queues;
— the premises and devices necessary for passengers and visitors (in the square, in the passenger building itself, or in a group of buildings and on the platform) must be located taking into account their consistent visibility, which excludes return traffic.


DB
Europacity
DB
Berlin Hauptbahnhof


Tallinna Bussijaam


LUX
Tallinna Bussijaam

SPACE-PLANNING SOLUTION

The space-planning solutions of railway station buildings must meet the following general requirements:

— provide a mutually coordinated organization of passengers and visitors movement with the separation of the arrival and departure flows, as well as the flows of long-distance, local, transit and suburban passengers;

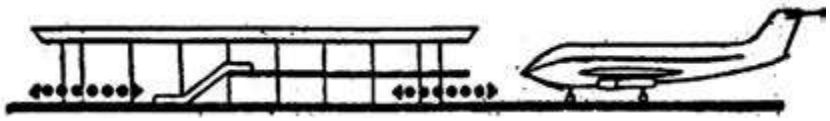
— provide for the location of operating rooms and devices (information desk, ticket and baggage counters, cameras storage, etc.) approximately to the main ways of movement of passengers main flows;

— provide for the location of premises intended for waiting for passengers, as well as public catering and commercial and consumer services for passengers, close to the platform with the separation of the corresponding premises and zones from the main routes of passenger traffic;

— provide for the location of long-term waiting rooms, including those intended for the disabled, as well as mother and child rooms, isolated from the most noisy rooms and areas of the station, possibly with the arrangement of special exits to the platform for the corresponding categories of passengers;

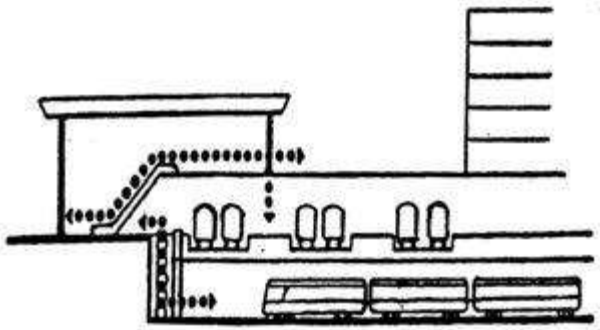
— to provide convenient operation for personnel, as well as for platform crews, with the arrangement of separate exits to the platform for them.

A. SINGLE-TIER SOLUTION



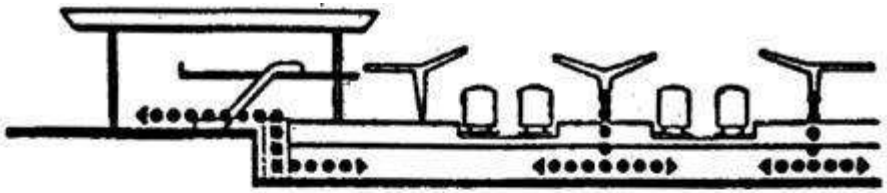
Option associated with the presence of crossing paths of pedestrians and transport

B. MULTI-TIERED SOLUTION

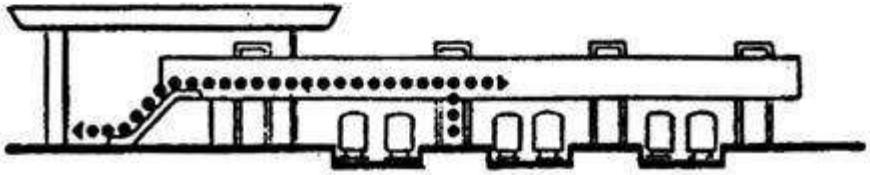


The option that provides the most complete separation of transport and passengers paths

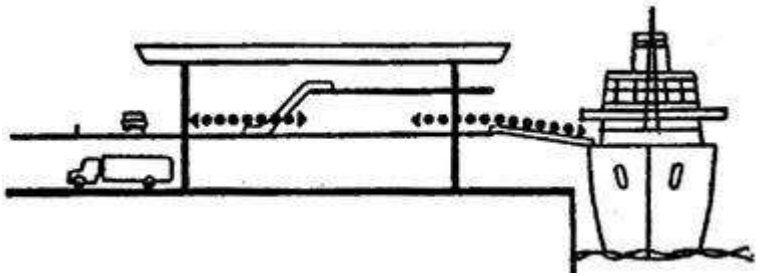
B. TWO-TIER SOLUTIONS



A variant of the arrangement of pedestrian paths in tunnels under the platform or under the station square



A variant of the arrangement of pedestrian paths above the platform



Option with separation of levels of passenger and cargo operations

The premises of railway stations are divided into four groups: passenger as main purpose; additional passenger service; administrative-service and utility-technical.

1. *Group of passenger rooms for the main purpose:*

— lobby;
— operating rooms;
— waiting rooms;
— ticket halls — ticket and baggage counters;
— distribution halls;
— rooms for passengers with children;
— facilities for baggage collection and storage;
— storage for hand baggage;
— sanitary blocks.

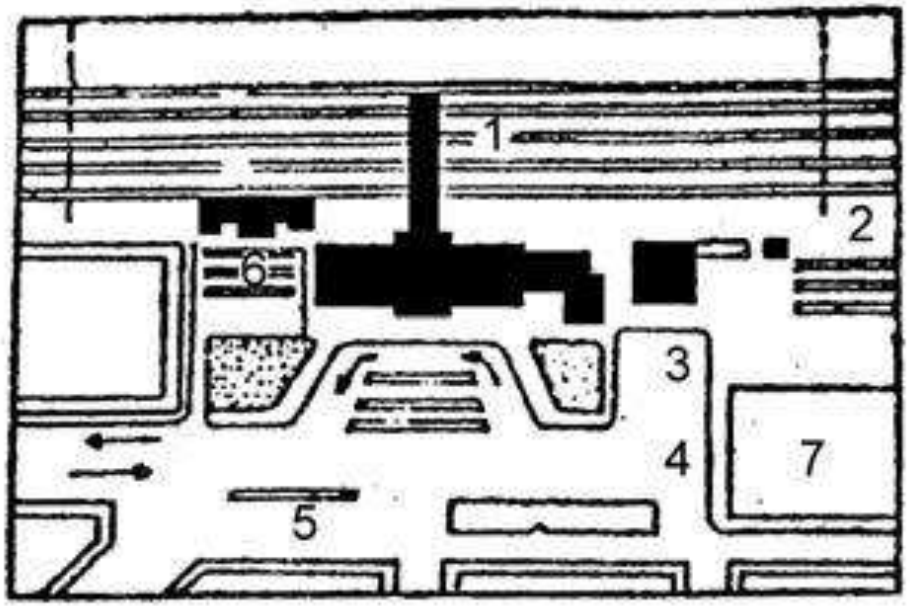
2. Group of additional passenger service facilities:

— restaurants, cafes, buffets;
— passenger lounges;
— retail premises;
— information bureaus;
— bank branch;
— post office, telegraph;
— hairdressers;
— sanitary blocks.

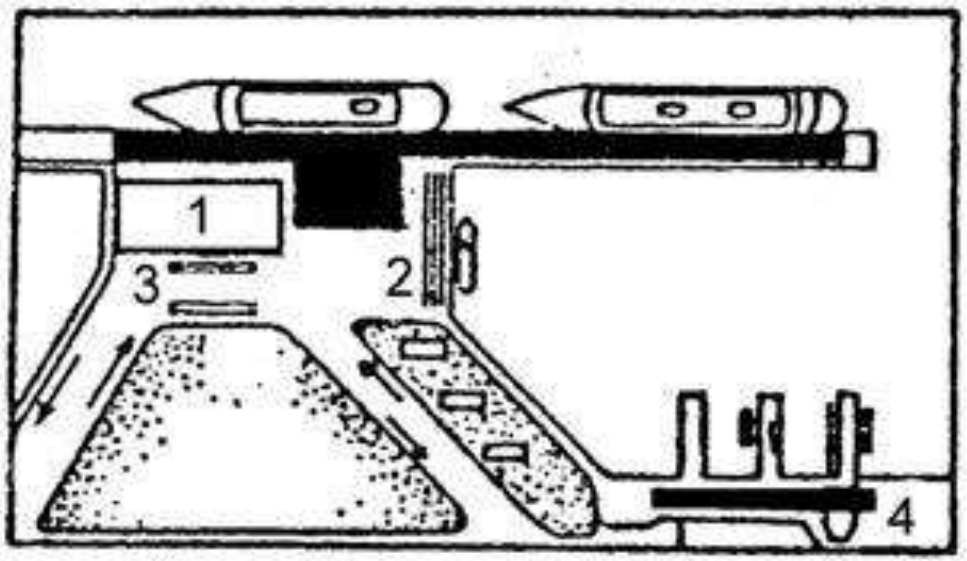
3. *Group of administrative and service premises:*
— controller’s offis;
— station duty rooms;
— line staff rooms;
— communication devices.
4. *Group of utility rooms:*
— warehouses;
— depot;
— boiler rooms;
— transformer systems;
— ventilation chambers.

It is recommended to have rooms for receiving and issuing baggage, as well as storage rooms, close to the main routes of traffic flows of arriving and departing passengers. Points of reception and delivery of baggage sent by tickets should have a convenient connection with the station square (for unhindered access, unloading and loading of special cargo transport)and with the platform. It is recommended to place the baggage compartments on the same level with them when installing tunnels for baggage. A large group of rooms is designed for waiting and relaxing passengers-waiting rooms and long-stay rooms, mother and child rooms, VIP rooms. It is recommended to place them in a relatively quiet, non-moving area with good visibility from the main halls of the platform. The reserve for increasing station capacity is the use, especially in the southern areas, of open green yards, terraces protected from the sun and weather, flat roofs and large balconies. The hall can have the character of a cozy impassable hall in small and medium-sized passenger buildings.

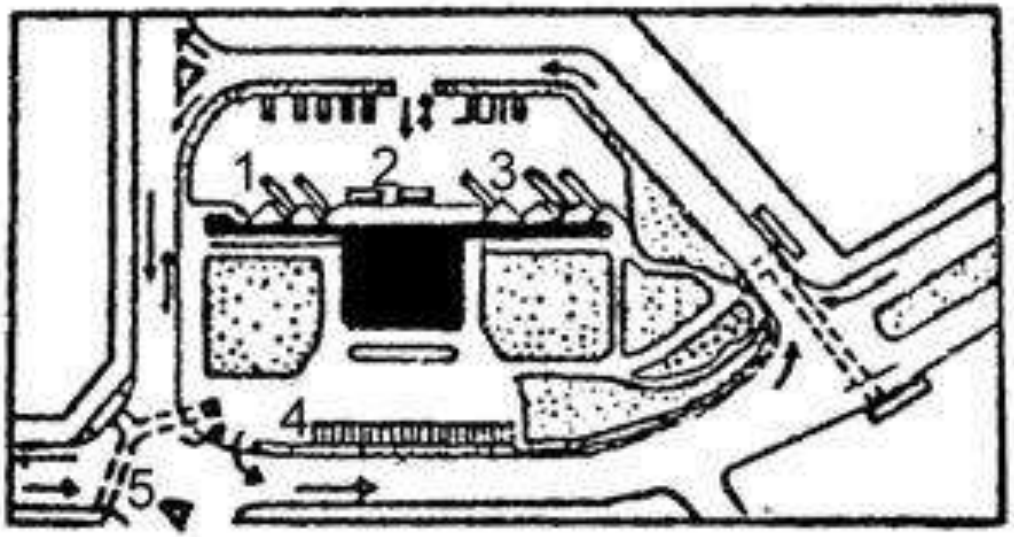
A. BANK AND DEAD-END TYPE RAILWAY STATION:
1 — platforms of long-distance and local trains; 2 — platforms of local trains; 3 — bus stops; 4 — trolleybus stops; 5 — tram stops; 6 — bus station; 7 — parking lots



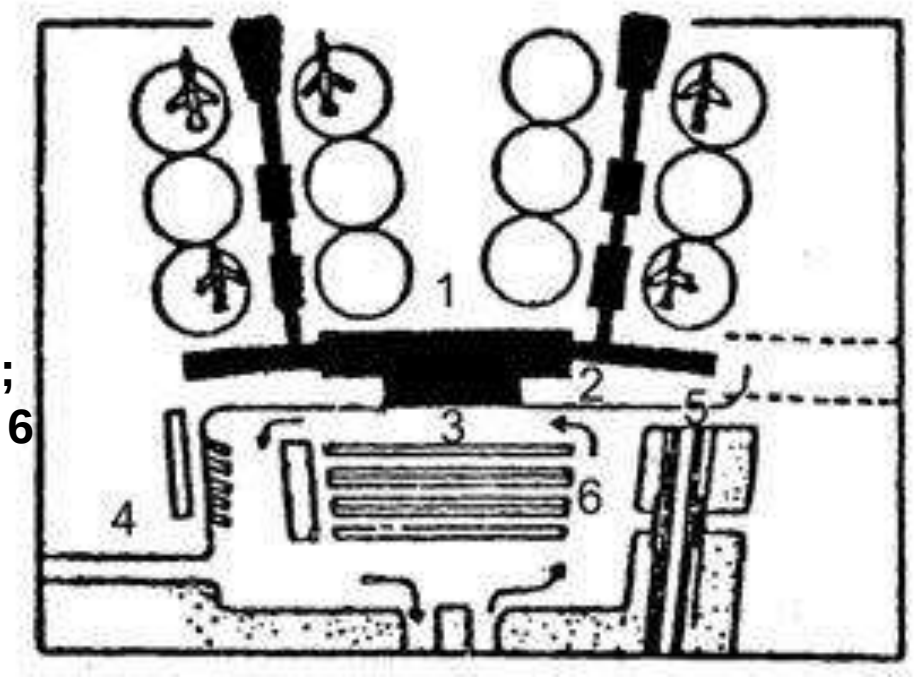
B. SEA AND RIVER STATIONS:
1 — bus and trolleybus stops; 2 — parking lots, tourist bus stops;3 — solemn meetings square;4 — river station platform



B. BUS STATION:
1 — departure platforms;2 — arrival platforms; 3 — bus stop; 4 — parking for intercity and city taxis; 5 — pedestrian tunnels



G. AIRPORT TERMINAL WITH BOARDING GALLERIES ON THE PLATFORM:
1 — passenger departure hall; 2 — passenger arrival halls; 3 — bus stops; 4 — bus station; 5 — railway platform; 6 — parking lots

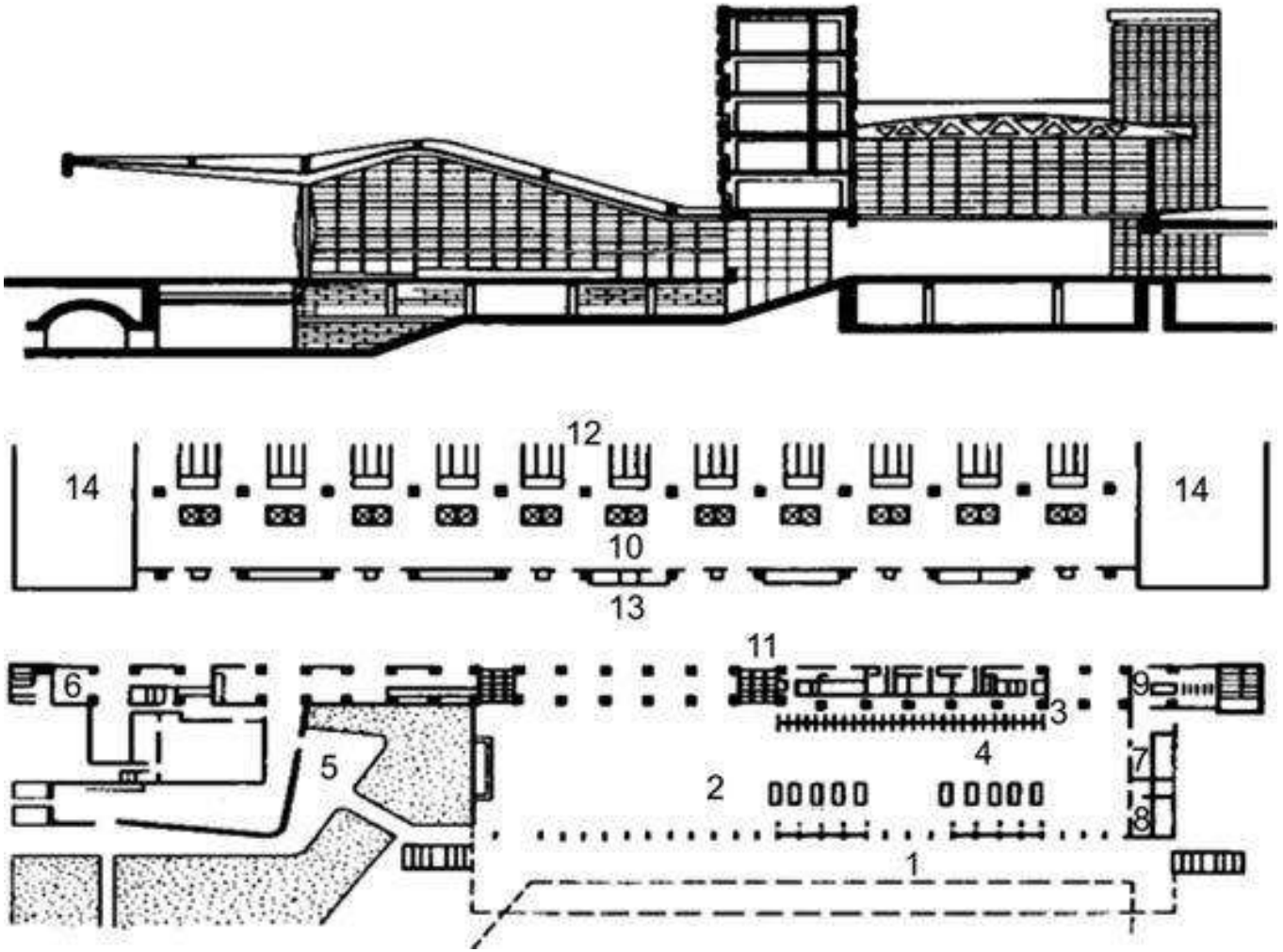


Directly at the waiting rooms, you should also place public catering establishments — a cafe-buffet, snack bars, a restaurant. They are calculated for at least 10% of the station capacity. Waiting rooms usually have sanitary blocks, sometimes small tailor's offices for consumer services and hairdressers, and arrival halls have a medical center with rooms-boxes for sick and weakened passengers. Sometimes there are halls for watching movies and TV shows in the largest structures that serve transit passengers. Thus, along with the dominant functions (passenger service, administrative-service and facility-technical), the station complex performs related functions: trade, food, hotel, entertainment, recreational, exhibition, consumer services, car maintenance. The peculiarity of the mutual placement of complex functional groups consists in the most convenient organization of connections between them; the most important thing is the absence of intensive flows intersection and the close placement of premises that require constant interconnection.

RAILWAY STATION COMPLEXES

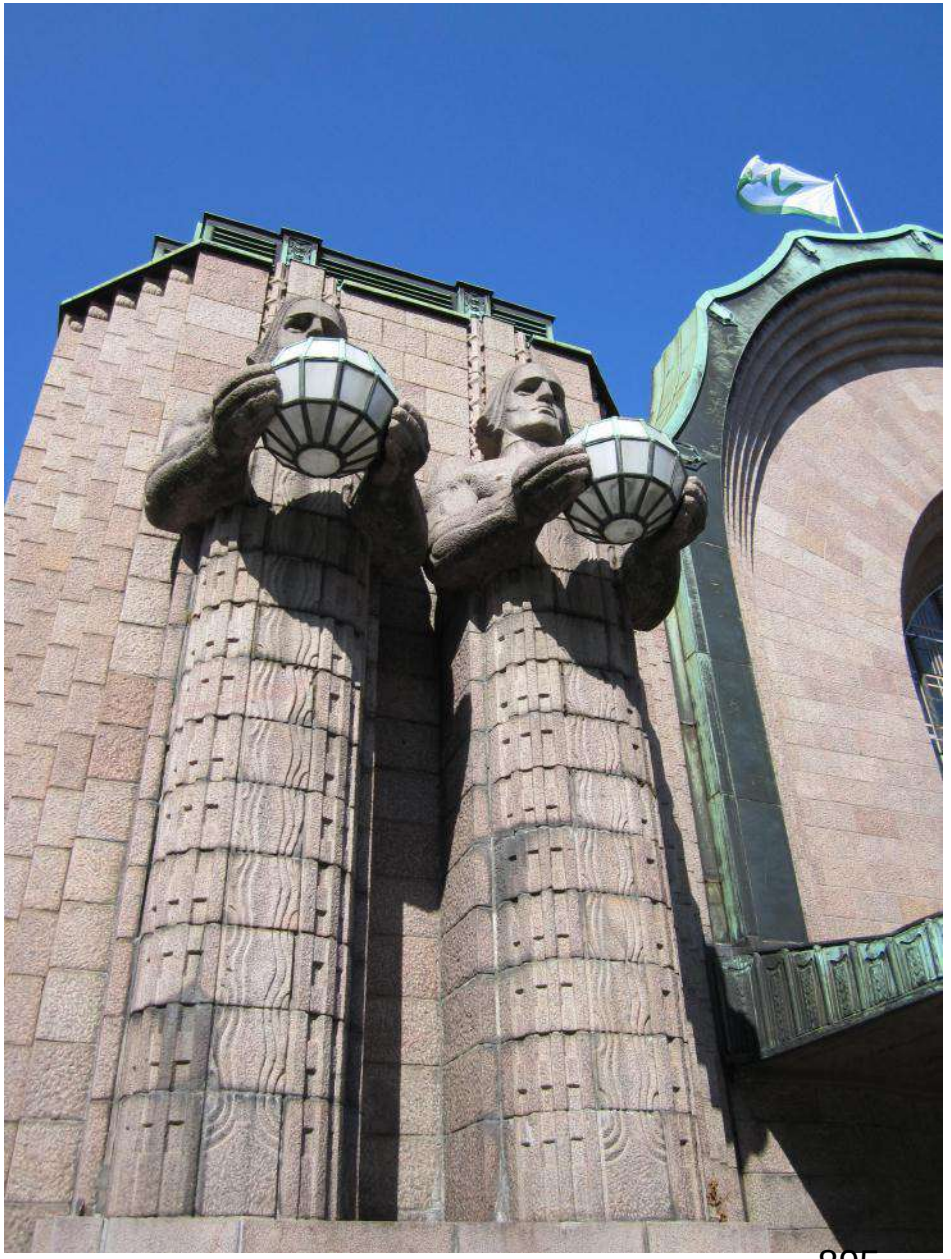

OSA.


Roma Termini



Stazione Termini Railway station in Rome, architect E. Montuori, G. Calini, M. Castellazzi, V. Fadigati, A. Pintonello, A. Vitellozzi, 1947-1950:
1 — front of entrances and exits; 2 — arrival and departure hall; 3 — ticket offices;4 — warehouses; 5 — terrace-cafe-restaurant; 6 — bar; 7 — post-telegraph;8 — tourist office; 9 — toilets; 10 — luggage elevators; 11 — entrances to the metro station; 12 — platforms; 13 — information desk; 14 — existing administrative buildings

Railway station in Helsinki, arch. Eliel Saarinen, 1904-1914

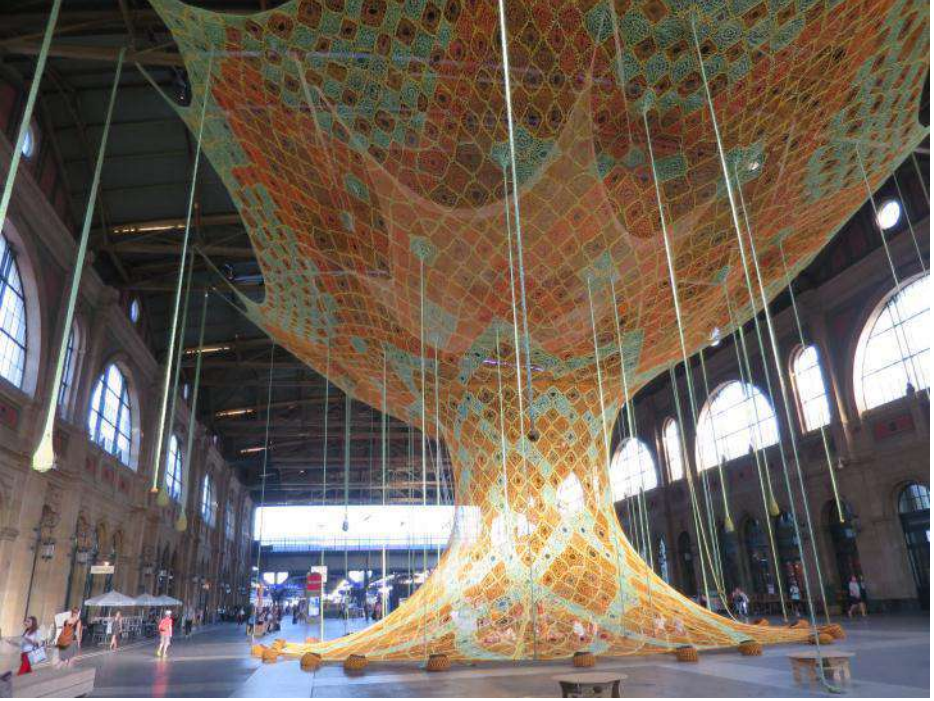


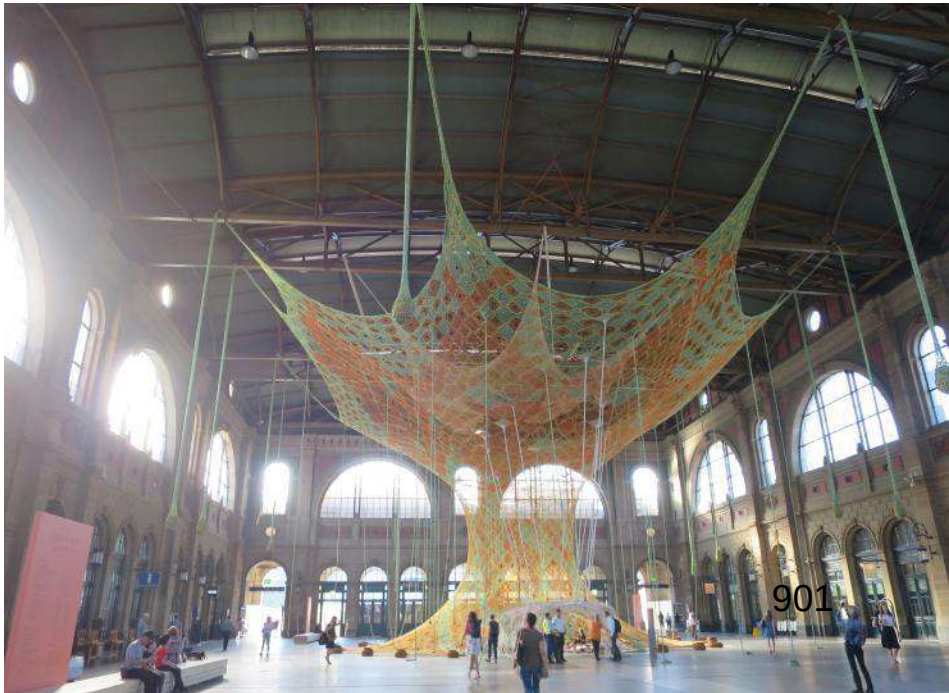
Railway station in Milan, architect U. Staccini, 1912-1925.


2
TRENITALIA
EUROSTAR CITY


ALLA
FACCIA
DEL
TEMPO

Railway station in Zurich





CLASSIFICATION OF RAILWAY STATION COMPLEXES AND THEIR LOCATION IN THE CITY STRUCTURE

There are several classifications of railway station buildings: depending on the position on the main line, the capacity, the categories of passengers and the layout of the passenger building relative to the railway tracks (planning feature). It is allowed to design the following types of platforms depending on the type of station and the location of the passenger building (or group of buildings) in relation to the railway tracks:

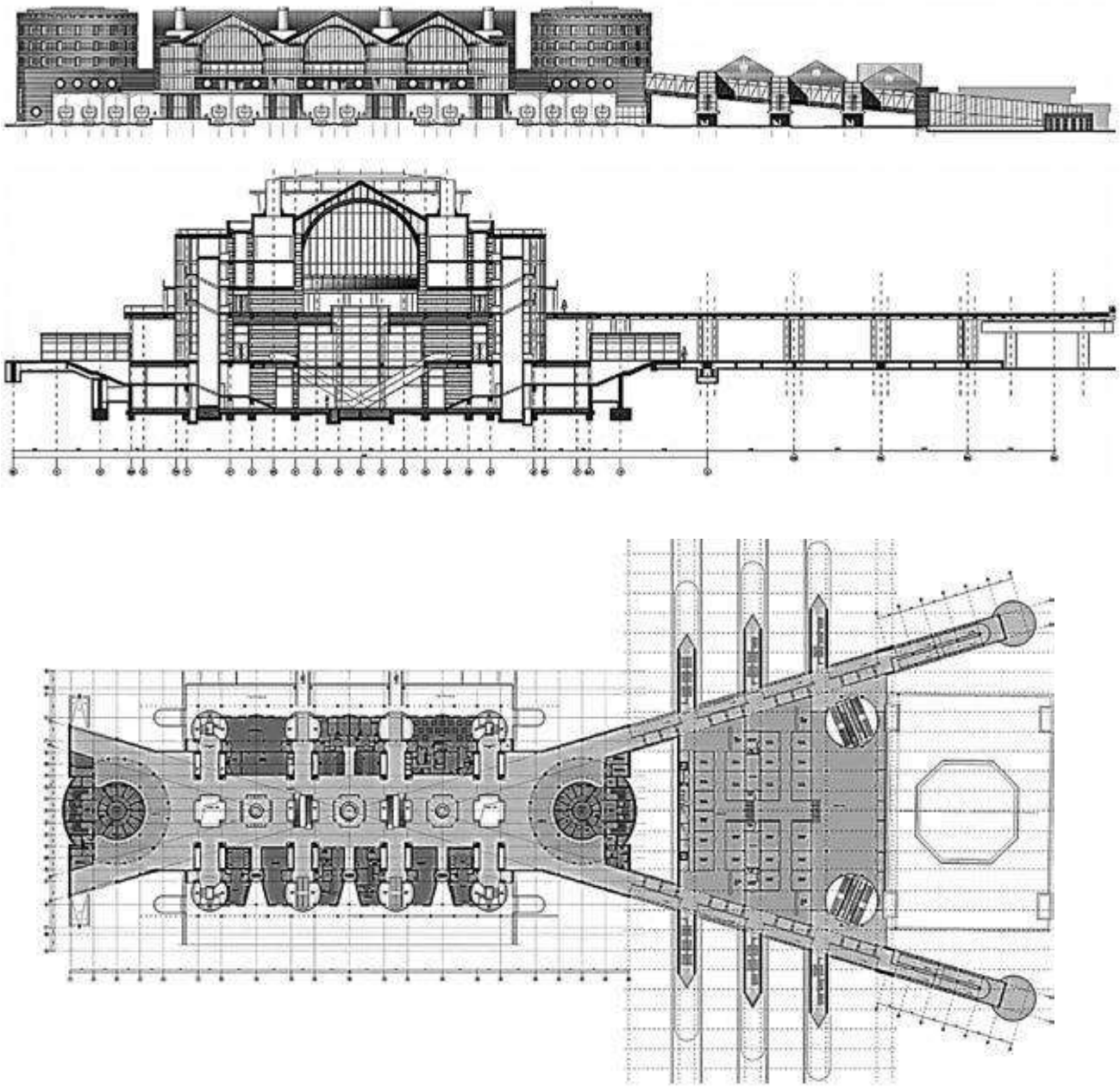
— side or coastal type of station, when the station is located on the side of the receiving and departure tracks, usually from the main, largest and most built-up areas of the city and other settlements;

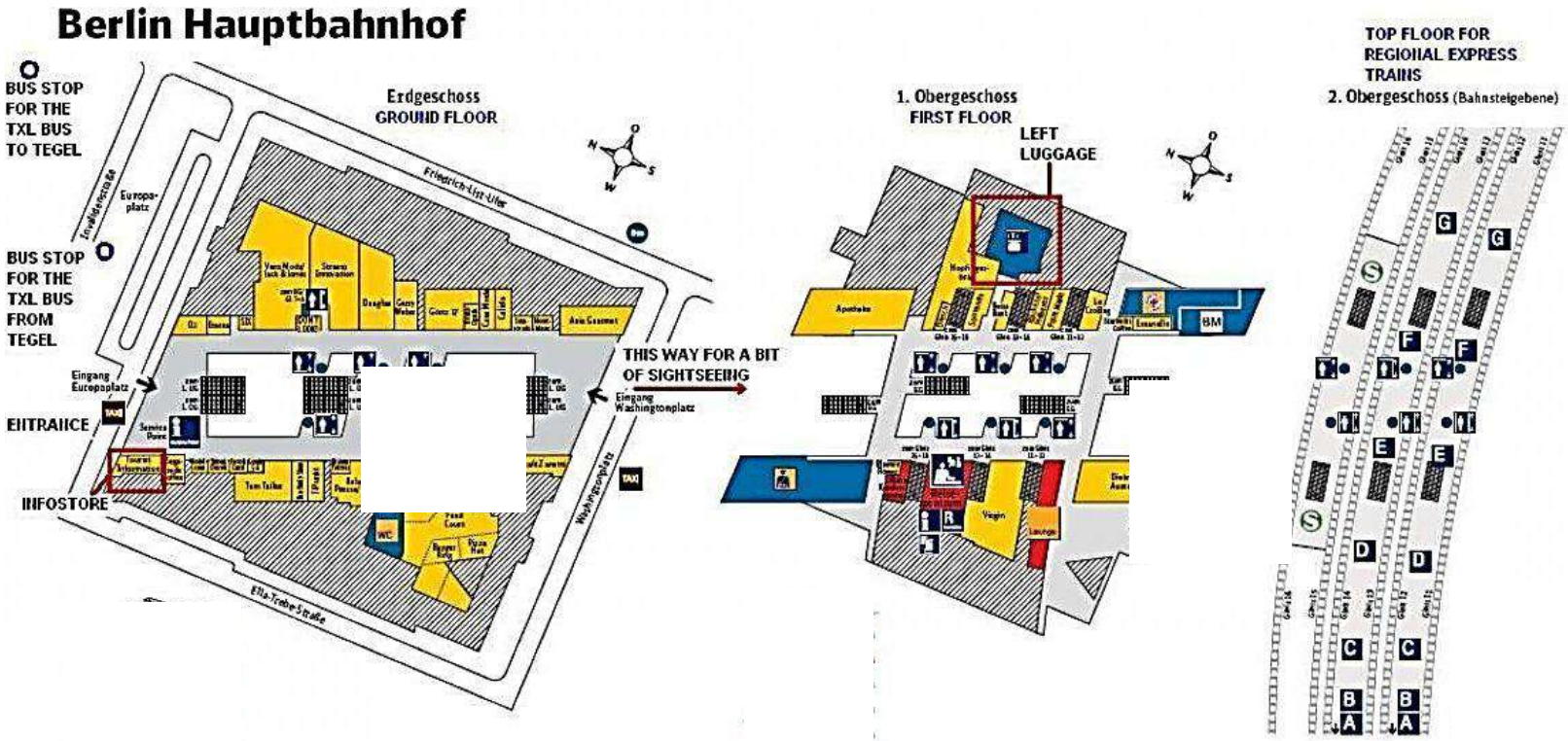
— island type of station, when the station building is located between the receiving and sending tracks and other tracks;

— dead-end station type, when the station building is located, as a rule, perpendicular to the receiving and sending tracks of the dead-end type: U-shaped, T-shaped, L-shaped, perpendicular and nodal options;

— combined, combining the features of two or three types listed above.

Railway station complex "Ladozhsky" in St. Petersburg, architect N. Yavein, Studio 44, 2001-2003





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Berlin Central Station, arch. von Gerkan Marg & Partners, 1995-2006


GUMPENDORFER STRASSE

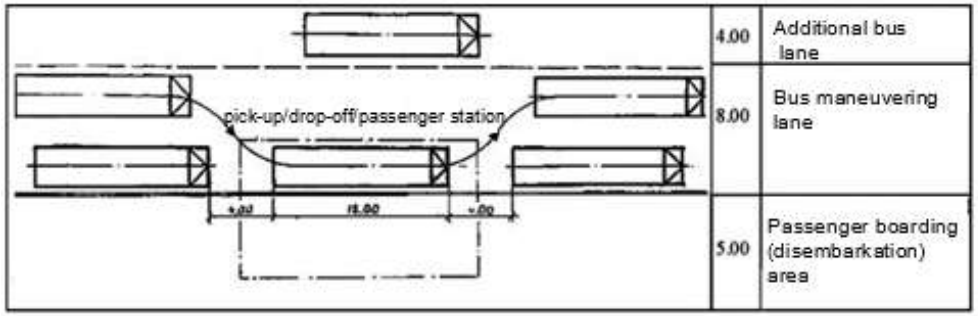

KARLSPLATZ

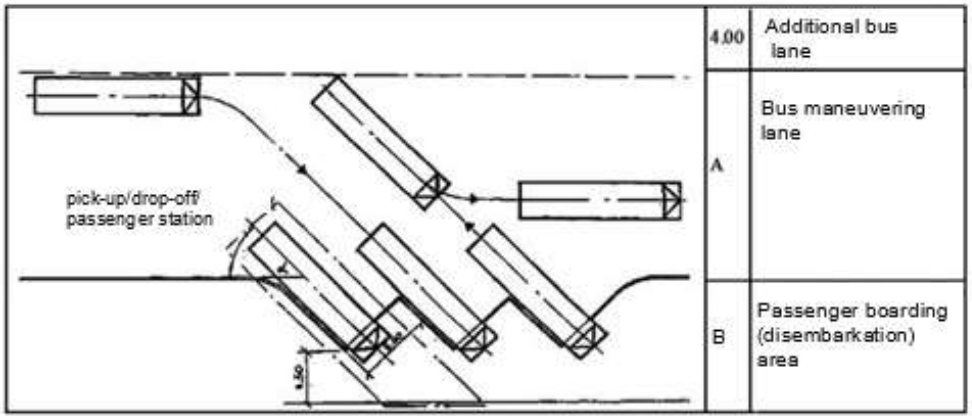
BUS STATION BUILDINGS

Placement of bus stations. Station layout

The choice of the location of the bus station and its basic architectural and spatial scheme are determined in accordance with the general decision of the transport hub of the city, on the basis of the general plan of its development, taking into account the existing or projected transport situation, as well as the totality of specific urban construction and natural conditions. At the same time, it is advisable to place bus stations and central city transport agencies primarily in the central part of the city or at the following locations: close to it, in a zone of mass pedestrian traffic. Stations are connected to the city center, as a rule, by main streets of citywide significance.

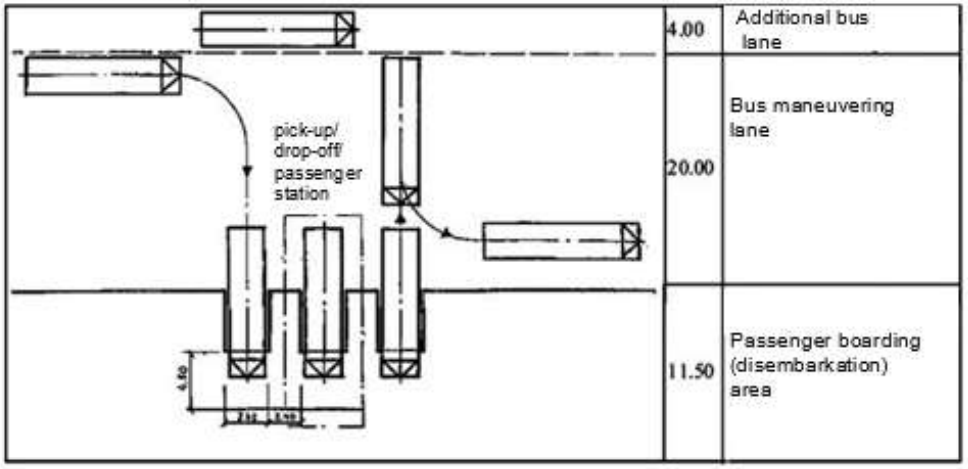
When designing bus stations, it should be assumed that the passenger, having got from the station square to the territory of the bus station, becomes the object of servicing the system of extra-city bus services before leaving the bus station to the station iarea at the point of arrival. Passenger service is provided in a complex consisting of the station premises and the square adjacent to the bus station. At the same time, it is necessary to pay attention to the optimal placement of public transport stops at the bus station.





Geometric parameters

degrees	Dimensions, m	
	A	B
30	11,00	8,00
45	12,00	3,50
60	16,00	10,50

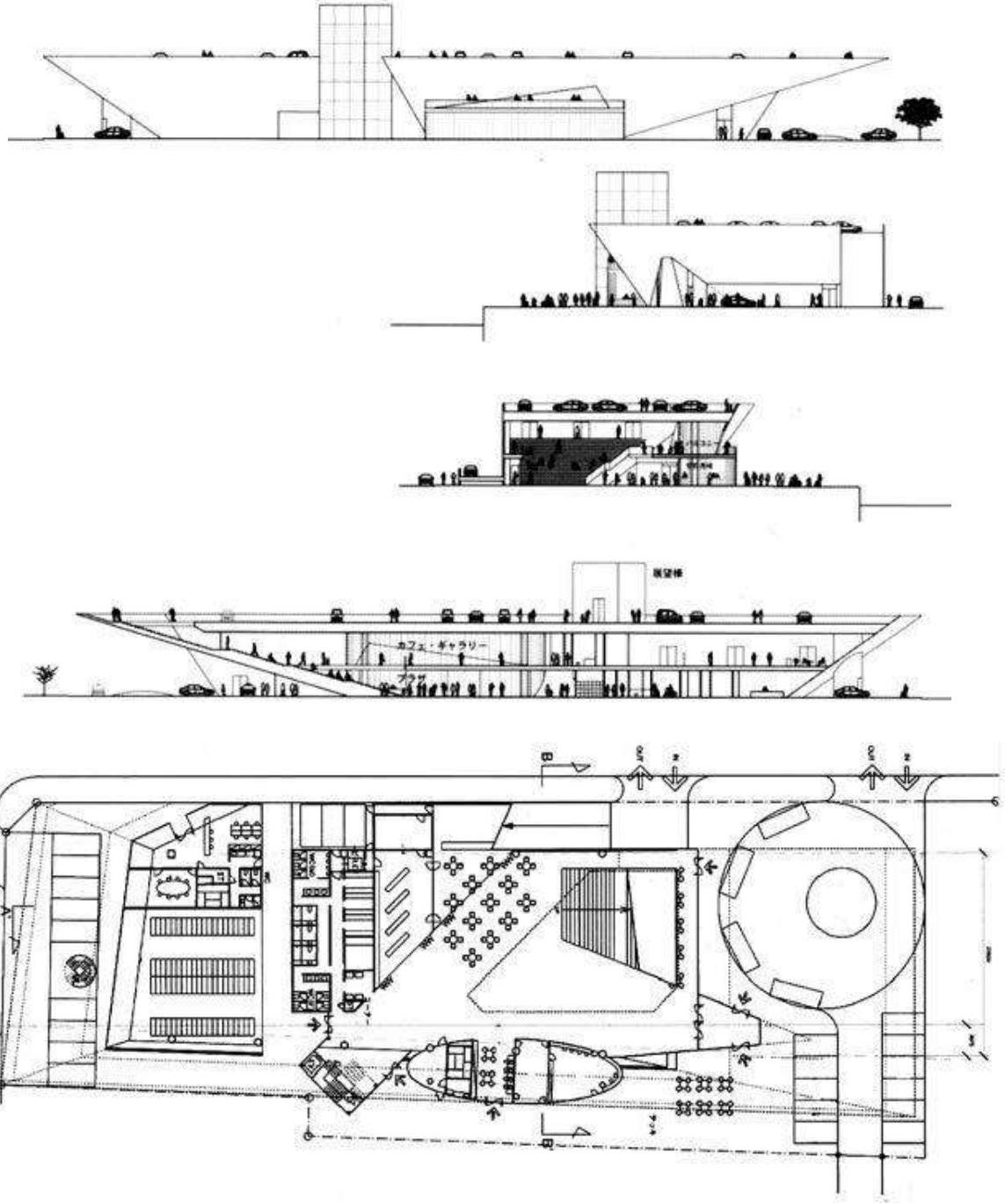


The platforms are divided into departure platforms for boarding passengers and arrival platforms for disembarking passengers. There should be smooth and shortest routes of passage from the building to the bus cabin, organization, ease of orientation in the bus station building and ease of passenger boarding.

The main types of bus station platforms:
1 — straight; 2 — ledge — shaped; 3-comb-shaped

Usually, the platform consists of a sidewalk raised 25-30 cm above the roadway and a canopy over it, the latter must be necessarily above the departure platform. The area of the platform, to the edge of which the bus comes when boarding or disembarking passengers, is called a post (boarding or disembarking). The number of such posts is a calculated indicator of the platform, on which all its parameters depend. In domestic practice, rectilinear and ledge-like configurations of the platform edge are considered more appropriate. In our practice, the length of the landing post on rectangular platform is assumed to be 22 m, and the disembarkation is 16 m. With smooth edges, a 15-18 m section is required for each bus route (post). It is advisable to arrange separate arrival and departure platforms in medium and large bus stations. Given that disembarking from the bus takes no more than 3-5 minutes, and boarding - up to 15-20 minutes, the number of departure posts should be taken 2-3 times more than the number of arrival posts. The most economical and convenient for maneuvering buses are the serrated edges at an angle of 45°, while the area of the platform per 1 post can be limited to 120-170 m2.

Bus station in Tallinn



Nagasaki Bus Station Project, Japan, arch. Sh. Yo, 2001

RIVER AND SEA STATIONS

The passenger area of a sea or river port should be isolated from its cargo berths and the cargo port terminal. The location of a sea or river station should be linked to the general layout of the port, as well as to the mutual location of other port areas, the purpose of neighboring berths, the loading of harmful, dusty, liquid or other cargo on them that negatively affects the sanitary and hygienic regime of the passenger port.

Depending on the nature of the tides, as well as the natural and topographical situation, the following solutions are used for the platforms (mooring front) of seaport passenger areas:

— open mooring front;

— pool system of berths;

— pier system of berths;

— combined solutions that combine different types of mooring front (for example, a pool front with a pier system of berths).

Sea Station in Rayong (Thailand)

AIR TERMINALS AND AIRPORTS

Airports should be located at a distance of more than 10 km from the project boundary of urban development.

The main calculation parameter for identifying the areas of operating rooms and waiting rooms of the airport terminal is their one-time capacity, which is determined by the presence in a particular zone of a certain number of passengers of different categories and visitors and the service time (stay) in the airport terminal .

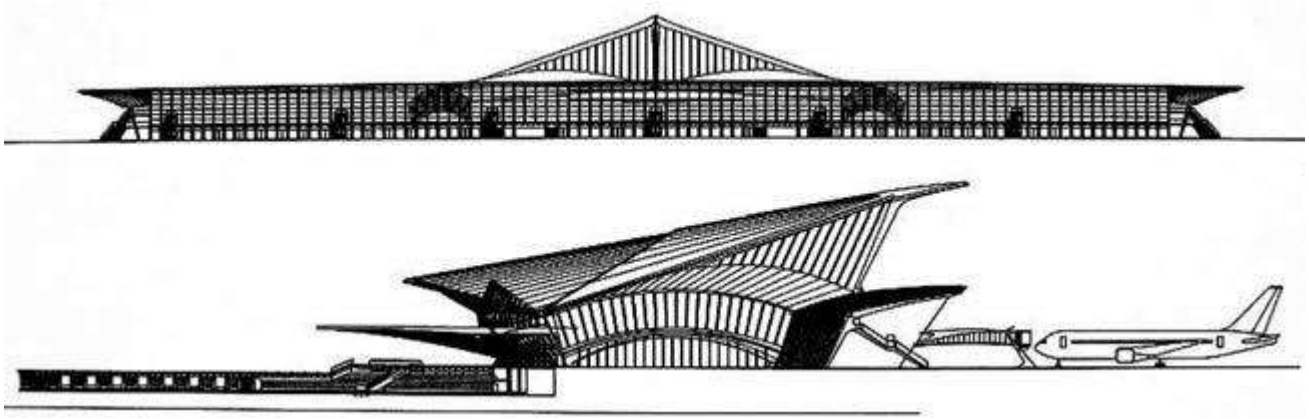
Platforms of air terminals at airports can be designed according to the following schemes:

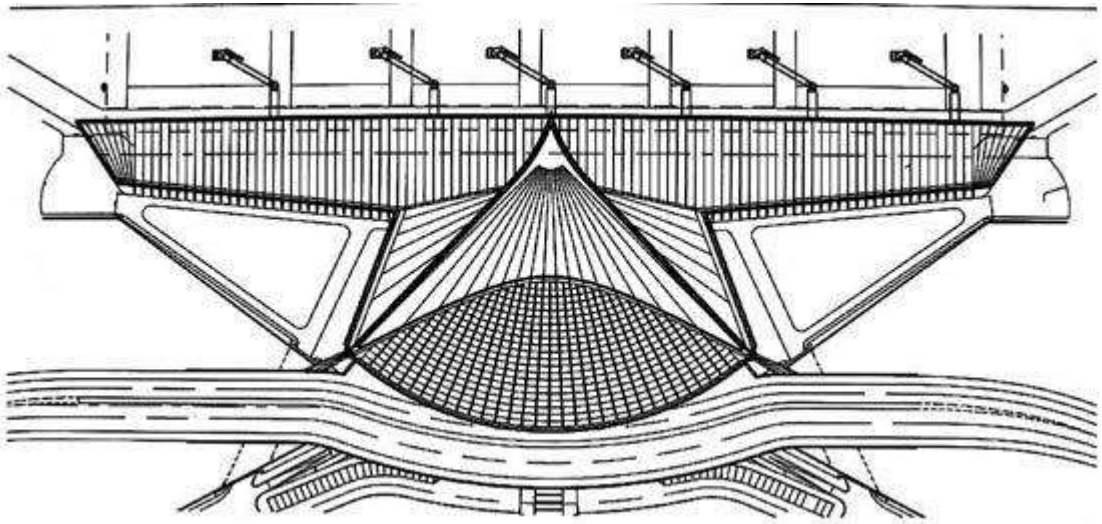
— the platform is directly adjacent to the airport terminal, and the pass-fats walk the way from the airport terminal to the plane along the sleeve;

— the platform is located at a considerable distance from the airport hall, and passengers are transported to the aircraft by additional vehicles: buses or special types of road trains, at major airports — moving sidewalks in tunnels or in covered overpasses, etc.;

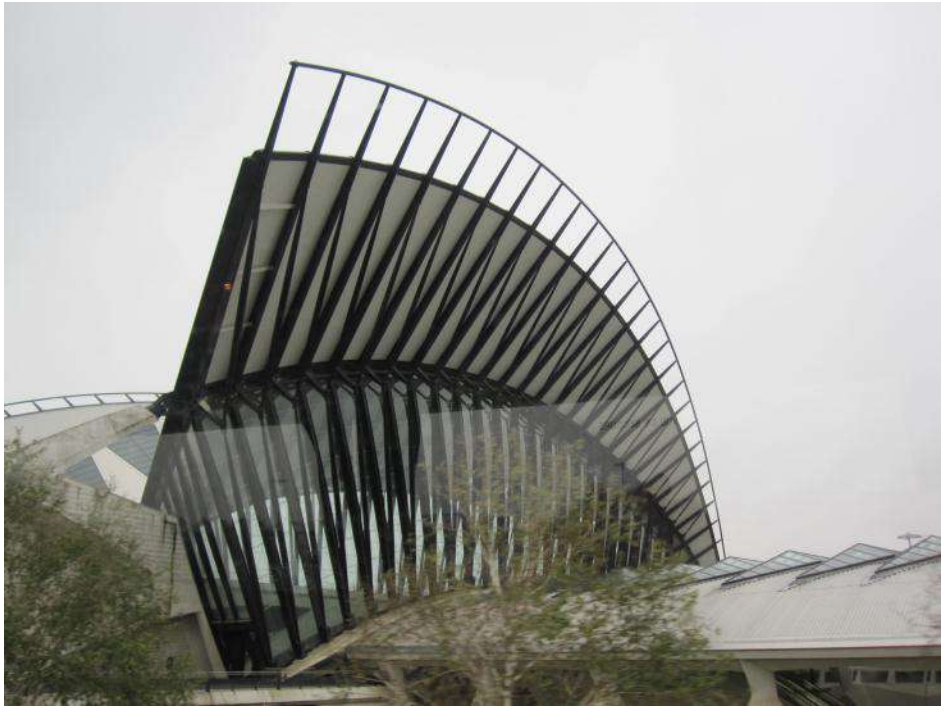
— combined solutions with various combinations of the above schemes.

A necessary condition for organizing the movement of human flows in the airport terminal is the separation of the flows of departing and arriving passengers. The following technological chain of passenger movement must be observed in air terminals:
— departure area: passenger check-in and baggage collection-customs control-passport control — personal inspection — boarding gate;
— arrival area: passport control — baggage collection — customs control — exit to the city.
In accordance with the nature of the organization of main passengers flows and baggage movement, decisions should be made on air terminals platforms:
— single-tier which passengers and delivered (or not) baggage moving in the terminal and on the platform at the same level, on the first floor; all passenger and Luggage space is allowed to place on one floor (sometimes on two or three floors);
— two-tier, in which the motion at the airport and on the platform is organized at different levels.
It is allowed to use planning solutions in which passengers follow the second tier after baggage delivery, and baggage is transported on the first, with departure passengers going up to the second floor, and arrival passengers go down from the second at the first stage, they go to the landing through the tunnels; at the same time, the luggage is taken out at





Sondika Airport in Bilbao, Spain,
arch. S. Calatrava, 1999



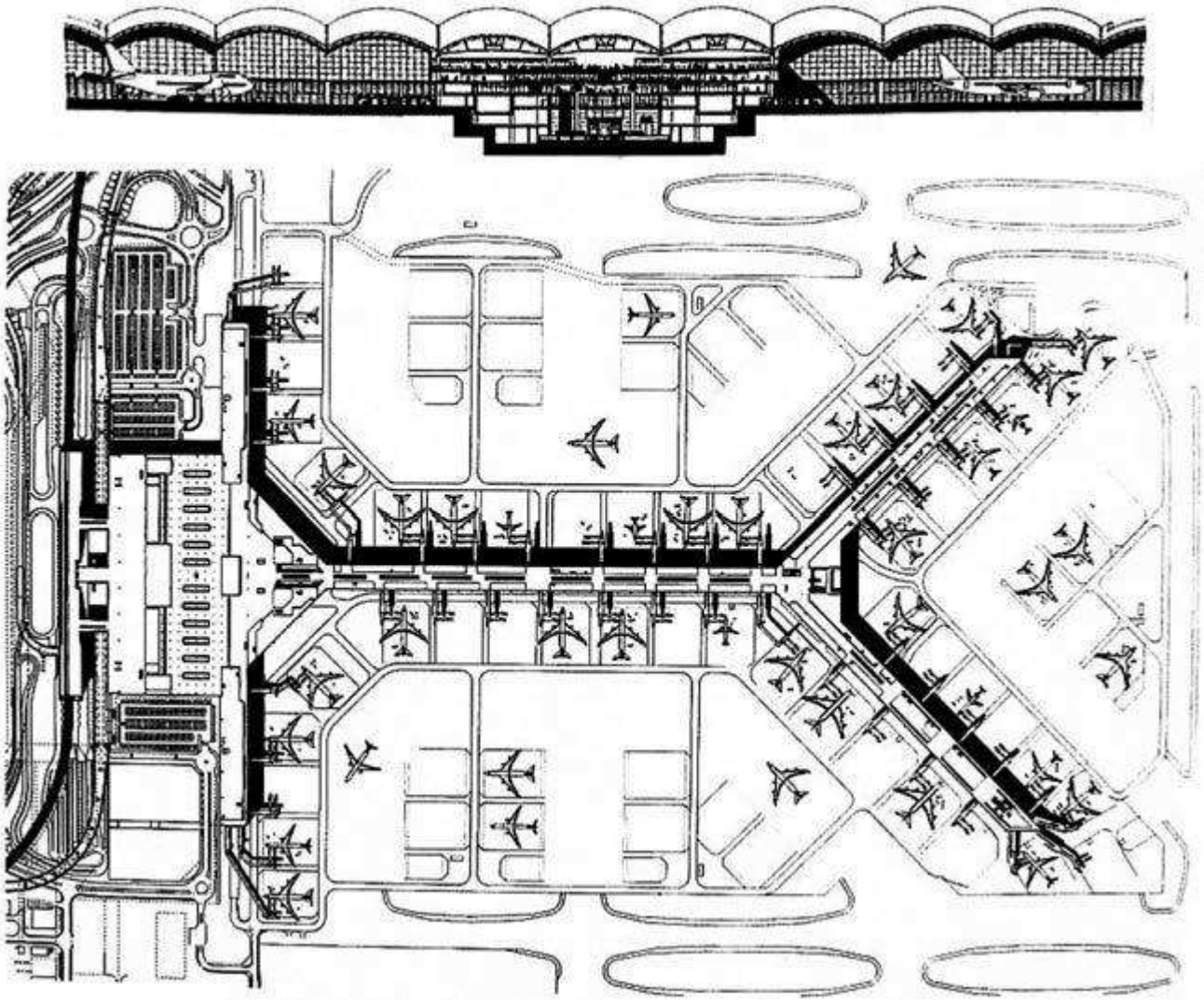
Lyon Airport, France, arch. S. Calatrava, 1999

Baku Airport

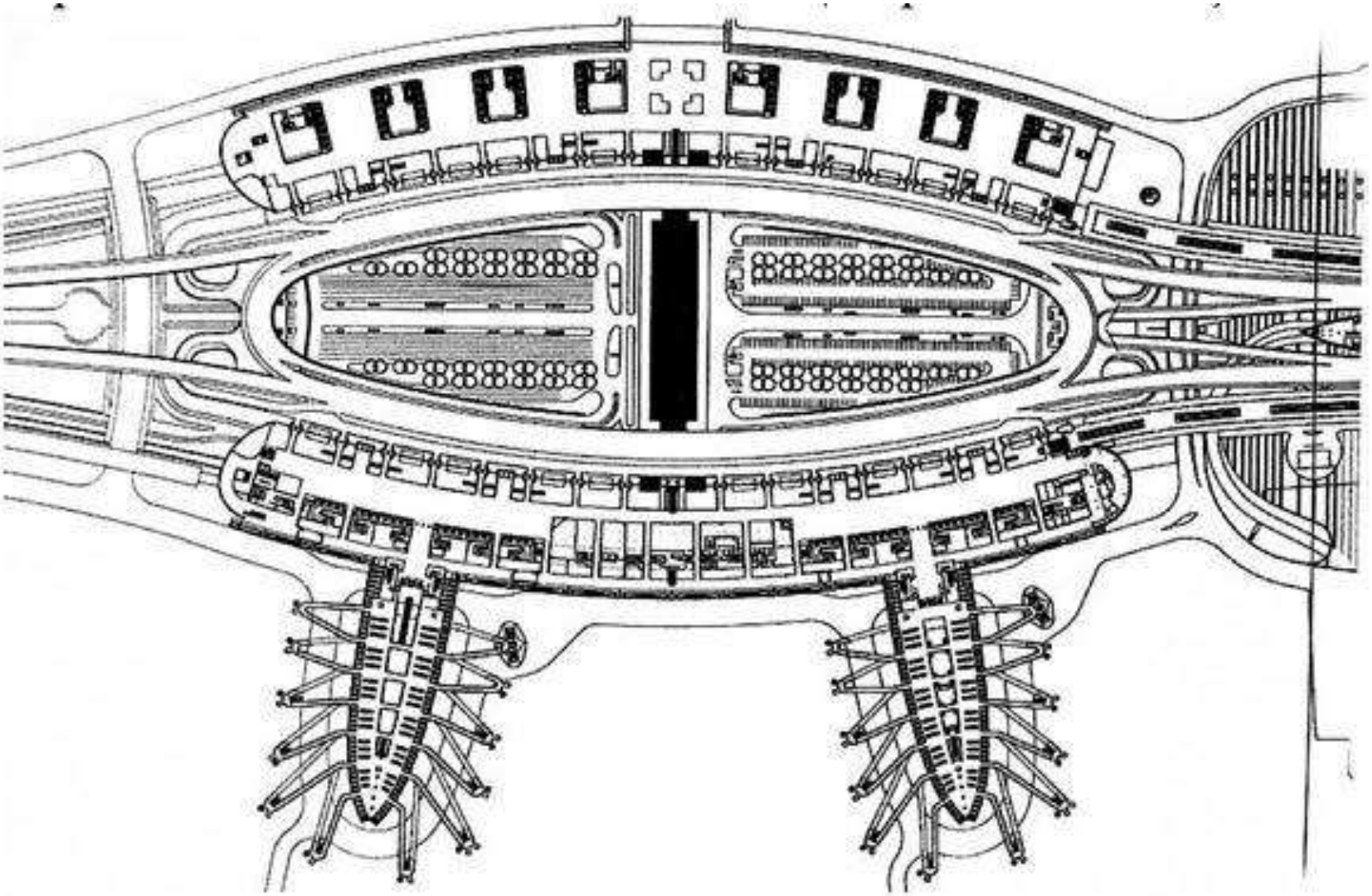
Suvarnabhumi Airport in Bangkok, Thailand, arch. G. Jan, 2006


Gate F6

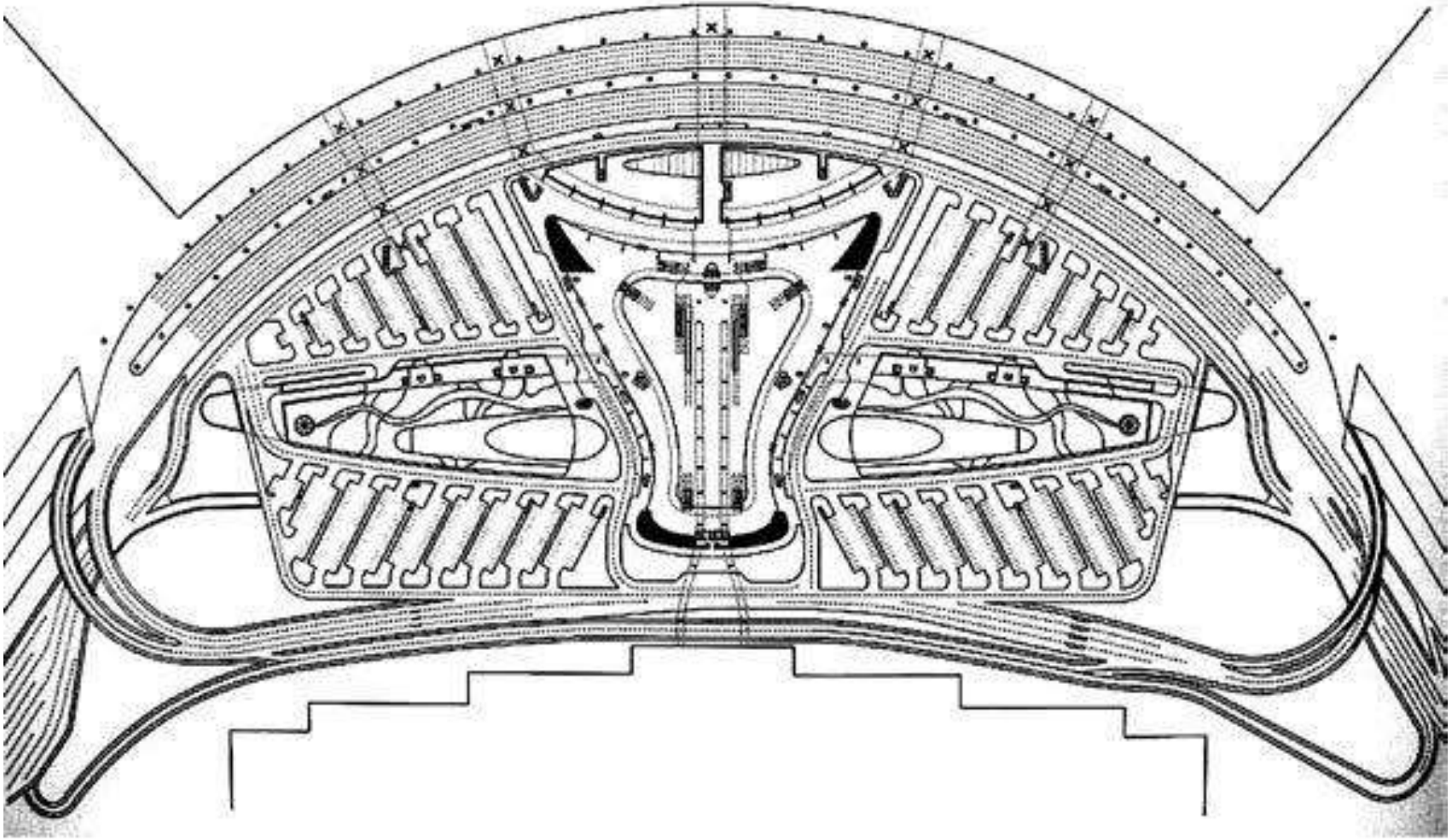
Munich Airport



Hong Kong International Airport,
architect N. Foster, 1998



Charles de Gaulle Airport, Terminal 2, Paris, architect P. Andre, 1999



Transport hub and International airport in Seoul, Korea, architect T. Farrell, 2002

Geneva. Transport hub. Bus Station

Geneva. Transport hub

Geneva. Transport hub

LECTURE 17.

HOSPITAL BUILDINGS

There are the following health care institutions:
— **medical institutions with a hospital**, dispensaries, maternity hospitals, medical centers;
— clinics;
— pharmacies, dairy kitchens;
— medical rehabilitation and correctional institutions, including for children;
— blood transfusion stations, ambulance stations;
— health resorts.

MASTER PLANS. SITE REQUIREMENTS

On the land plots of hospitals, maternity hospitals, dispensaries with hospitals, the following functional zones should be allocated:

— the zone of medical buildings for non-infectious patients;
— area of medical buildings for infectious patients;
— polyclinic area;
— area of buildings for radiological equipment placement;
— garden and park area;
— facility zone;
— area of the pathologic-anatomical building.

Areas of medical and preventive institutions with hospitals should be fenced around the perimeter, and it is not allowed to place buildings and structures that are not functionally connected with hospitals.

Access roads should be provided to the buildings of medical institutions. It is necessary to provide separate entrances to the following zones on the land plot of the hospital:

— medical buildings for non-infectious patients;
— medical buildings for infectious patients;
— pathologic and anatomical building;
— facility zone.

It is recommended to take the following distances between the buildings of medical and preventive institutions:

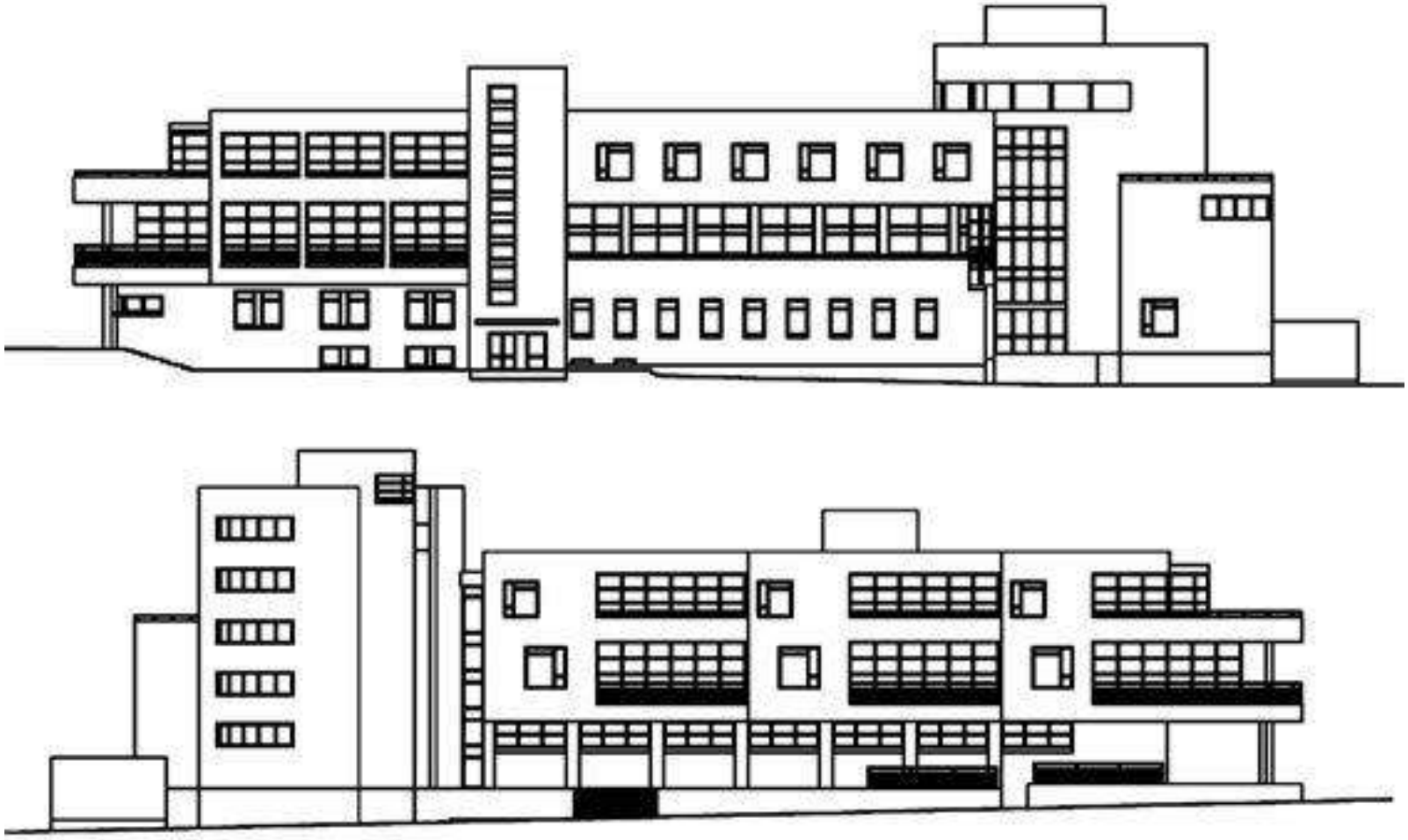
- between the walls of buildings with windows from the chambers — 2.5 m of the height of the opposing building, but not less than 25 m;
- between the buildings with wards and the pathologic-anatomical building or buildings located in the facility zone (excluding the buildings of the food preparation service) — not less than 30 m;
- between the buildings of the food preparation service and the pathological-anatomical building — at least 30 m;
- between the radiological building and other buildings — at least 25 m.

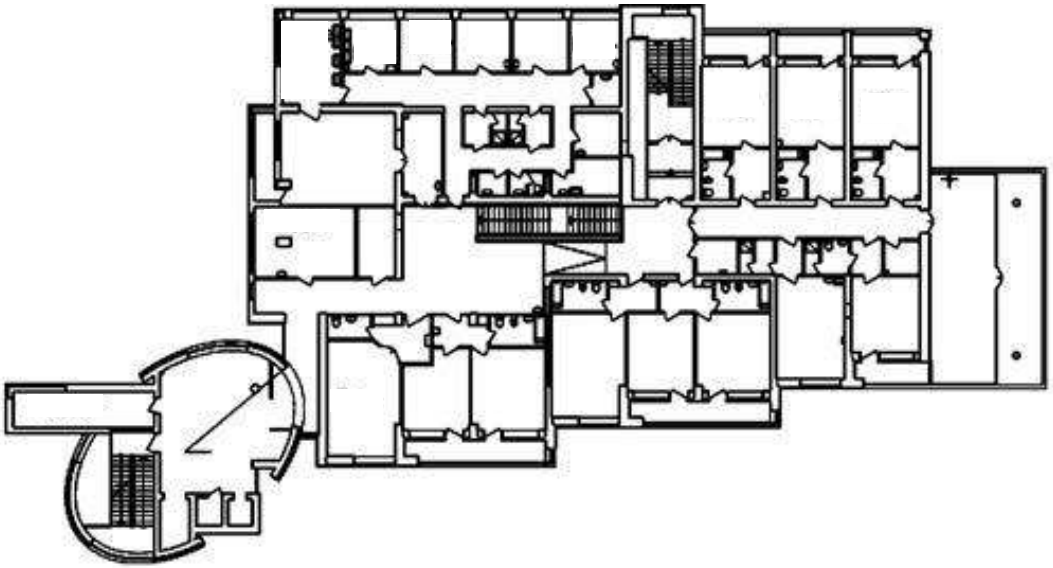
The food preparation service-canteens with service rooms should be located in the facility zone or in the area of medical buildings for non-infectious patients. It is necessary to provide platforms for visitors at the rate of 0.2 m2 per bed or one visit per shift, but not less than 50 m2 in front of the main entrances to hospitals, polyclinics, dispensaries and maternity hospitals. The distance from the buildings of hospitals with wards, buildings of maternity hospitals and dispensaries with hospitals to the red lines, as well as to residential buildings should be at least 30 m; the distance from the medical and diagnostic buildings of the hospital, as well as buildings of polyclinics, women's consultation and dispensary without a hospital — at least 15 m.

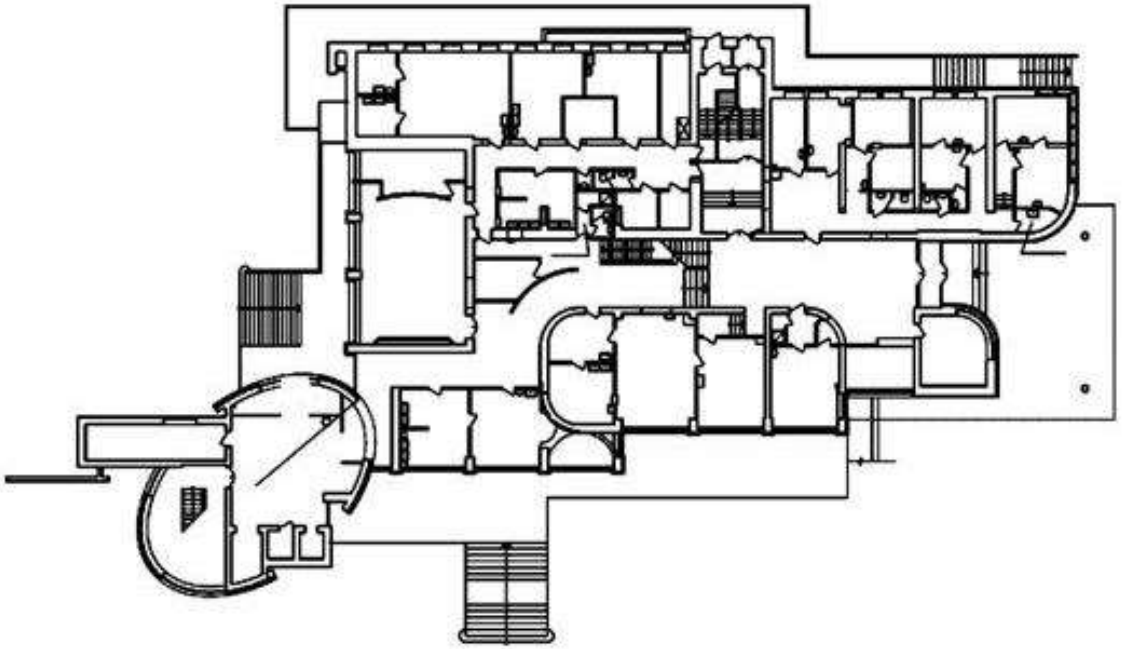
The area of green spaces and lawns should be at least 60% of the area of the sites of hospitals and dispensaries with stations.
The size of the garden and park area of the hospital, maternity hospital and dispensary with a hospital should be taken equal to 25 m2 for one bed.
Outdoor sport facilities should be at least 25 m away from buildings with wards.
It is necessary to develop green spaces with a width of 15 m on the perimeter of the hospital and plots with a width of 10 m on the perimeter of the polyclinic.
The pathologic-anatomical building, the driveways to it and the parking lot of funeral cars should not be viewed from the windows of medical buildings and from the garden and park area.
Psychiatric, drug treatment, rehabilitation, and tuberculosis hospitals with long-term patient stays should be located in a green or suburban area.

SPATIAL PLANNING SOLUTIONS

Mother and Child Hospital in Nizhny Novgorod,
architect A. Kamenyuk, Y. Kartsev, 2002







Medical organizations intended directly for patients are divided into two groups: **inpatient and outpatient** treatment**.**

The following structural divisions can be part of medical organizations with a hospital:

- hospitals,
- consulting and diagnostic departments,
- medical departments,
- auxiliary,
- household services,
- premises of clinical departments,
- day hospitals.

The calculated indicators of the capacity of medical institutions are: for hospitals with inpatient facilities — the number of beds; for outpatient clinics — the number of visits per shift. The structure and composition of medical and preventive institutions premises are determined by the design task, taking into account the profile, capacity of institutions and the centralization of clinical and diagnostic laboratories, pathologic-anatomical departments, central sterilization departments, administrative services, food preparation services, laundries, garages.

Center of Pediatric Hematology, Oncology and Immunology in Moscow,
A. Asadov (ruk.), 2006-2009

The height of buildings of medical and preventive institutions should be no more than 9 aboveground floors. Wards for children's hospitals should be placed no higher than the fifth floor of the building, wards for children under the age of 7 years-no higher than the second floor.

Medical and preventive institutions should be equipped with elevators and cargo lifts.

The height of the above-ground floors of medical and preventive institutions buildings should be taken equal to 3.3 m.

The height of X-ray rooms with non-standard equipment and operating rooms in operating blocks of hospitals is set depending on the equipment size.

The minimum width of the premises in meters should be:
— for doctors' offices, corridors of ward departments — 2.4;
— for corridors of outpatient clinics, dispensaries and women's clinics — 2;
— for corridors in operating blocks, maternity and intensive care units, corridors used for waiting rooms, with one-way arrangement of offices — 2.8;
— for single-bed wards — 2.9;
— for small operating rooms, bandage rooms, corridors of hospitals of rehabilitation treatment, corridors used for waiting rooms, with a two-way arrangement of offices — 3.2;
— for procedural, X-ray rooms (except for dental treatment), delivery rooms and corridors of the neuropsychiatric department used for the day stay of patients — 4;
— for operating rooms and intensive care units — 5.
The depth of wards and medical and diagnostic rooms with natural lighting on one side should not be more than 6 m.

The depth of surgical, orthopedic, oncological, otorhinolaryngological, procedural, X -ray and bandage rooms should be at least 4 m, ophthalmology rooms — at least 6 m, operating rooms — at least 5 m, delivery wards — at least 4.5 m. The ratio of the depth to the width of the wards and medical and diagnostic rooms should not be more than 2 m. The area and dimensions of the wards should be determined based on the approach to the patient's bed from three sides. It is recommended to define ward sizes (except for radiological wards) based on the following conditions:

— placement of beds in rows parallel to the walls with windows;

— the distance from the beds to the walls with windows should be at least 0.9 m;

— the distance between the ends of the beds in four-bed wards and between the ends of the beds and the wall in two - and three-bed wards of the departments of rehabilitation hospitals should be 1.6 m, and in the wards of other departments — not less than 1.3 m;

— the distance between the long sides of the adjacent beds should be at least 0.8 m, in children's wards and recovery wards — at least 1.2 m.

The premises of medical and preventive institutions and pharmacies should have natural light. The second light or only artificial lighting can be in the premises sanitary blocks in the chambers, photographic, staff shower, anesthesia, preoperative, facilities, washrooms, microbiological boxes, sanitary pass, as well as in accordance with the design specifications in areas of operational and procedural X-ray offices. The corridors of the tent departments should have natural light-windows in the end walls of buildings or windows in the light pockets of the corridors. It is allowed to freely focus the windows of the premises on the sides of the horizon.

INPATIENT HOSPITALS

The structure of inpatient hospitals includes, as a rule, the following groups of premises:

— reception departments, discharge rooms, specialized boxes;
— tent wards;
— operating blocks;
— departments of anesthesiology and intensive care;
— departments of functional diagnostics;
— departments of rehabilitation treatment;
— blood transfusion departments;
— sterilization departments;
— pharmacies;
— food preparation service;
— laundries;
— office and household premises.

ADMISSION OFFICES

The composition of the reception departments should include:

- lobby-waiting room;
- registration and reference information;
- room for temporary storage of patients' belongings;
- observation deck;
- reception and inspection box;
- sanitary pass;
- treatment; bandage room;
- X-ray diagnostic room;
- operating room for urgent operations;
- laboratory for urgent tests;
- wards (for 1 bed, for 2 beds or more);
- room of the nurse on duty;
- pantry;
- facilities for washing and sterilizing ships, cleaning, sorting and temporary storage of dirty laundry;
- office of the doctor on duty;
- staff room;
- storage room for clean laundry;
- sanitary blocks for personnel.

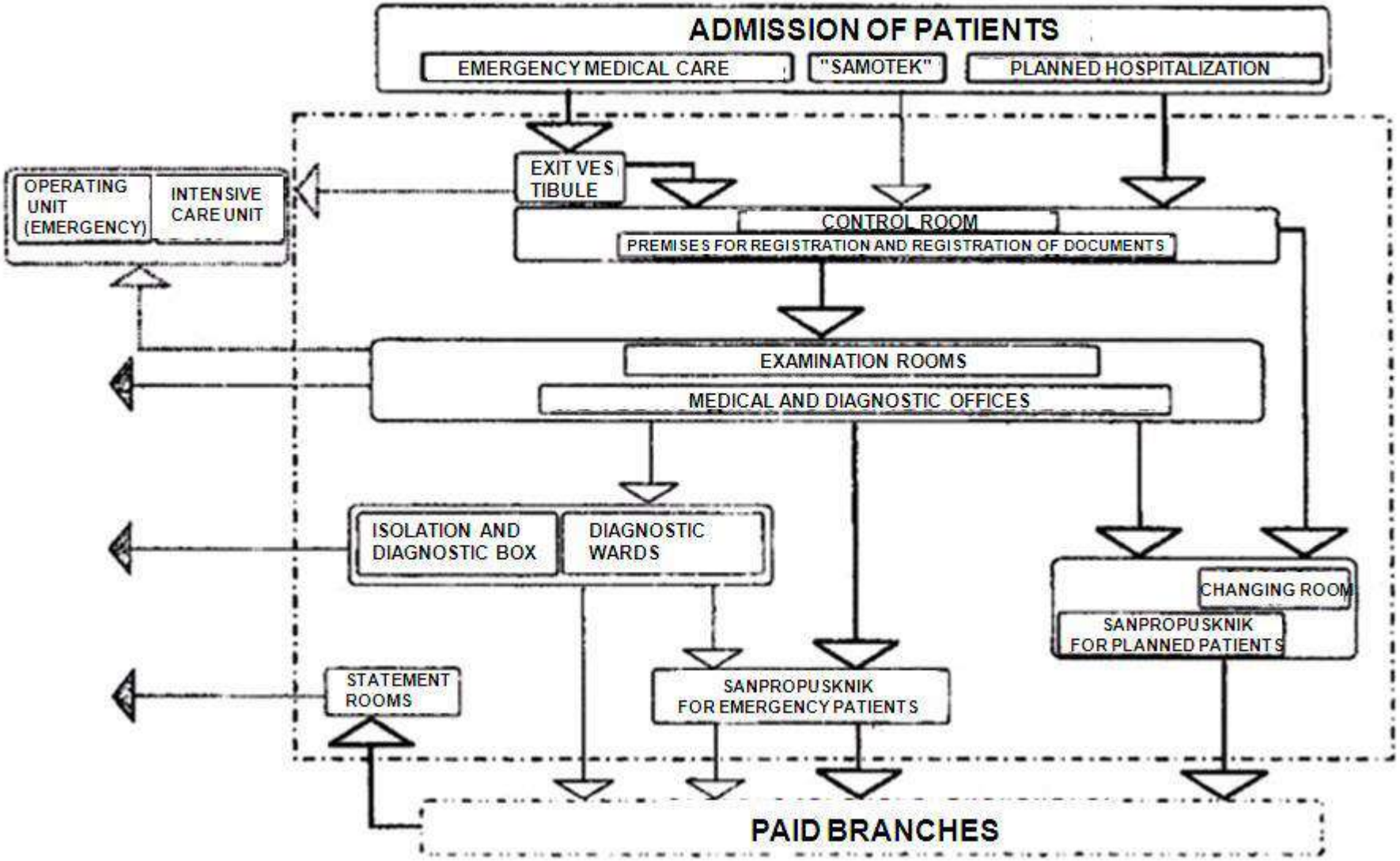
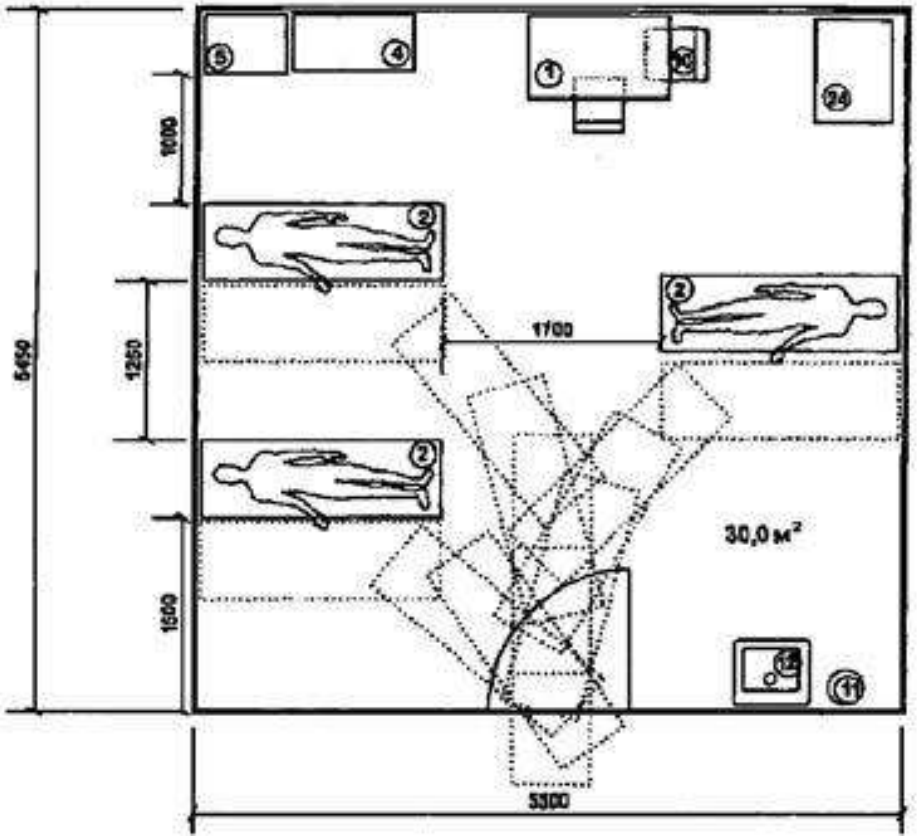
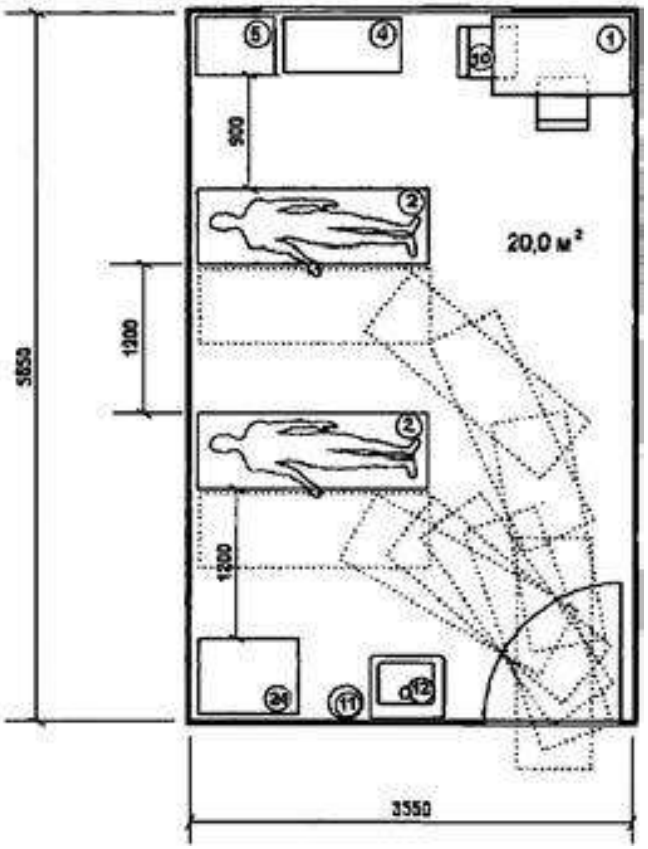


Diagram of the relationship between the main rooms of the reception departments of non-infectious hospitals for adults

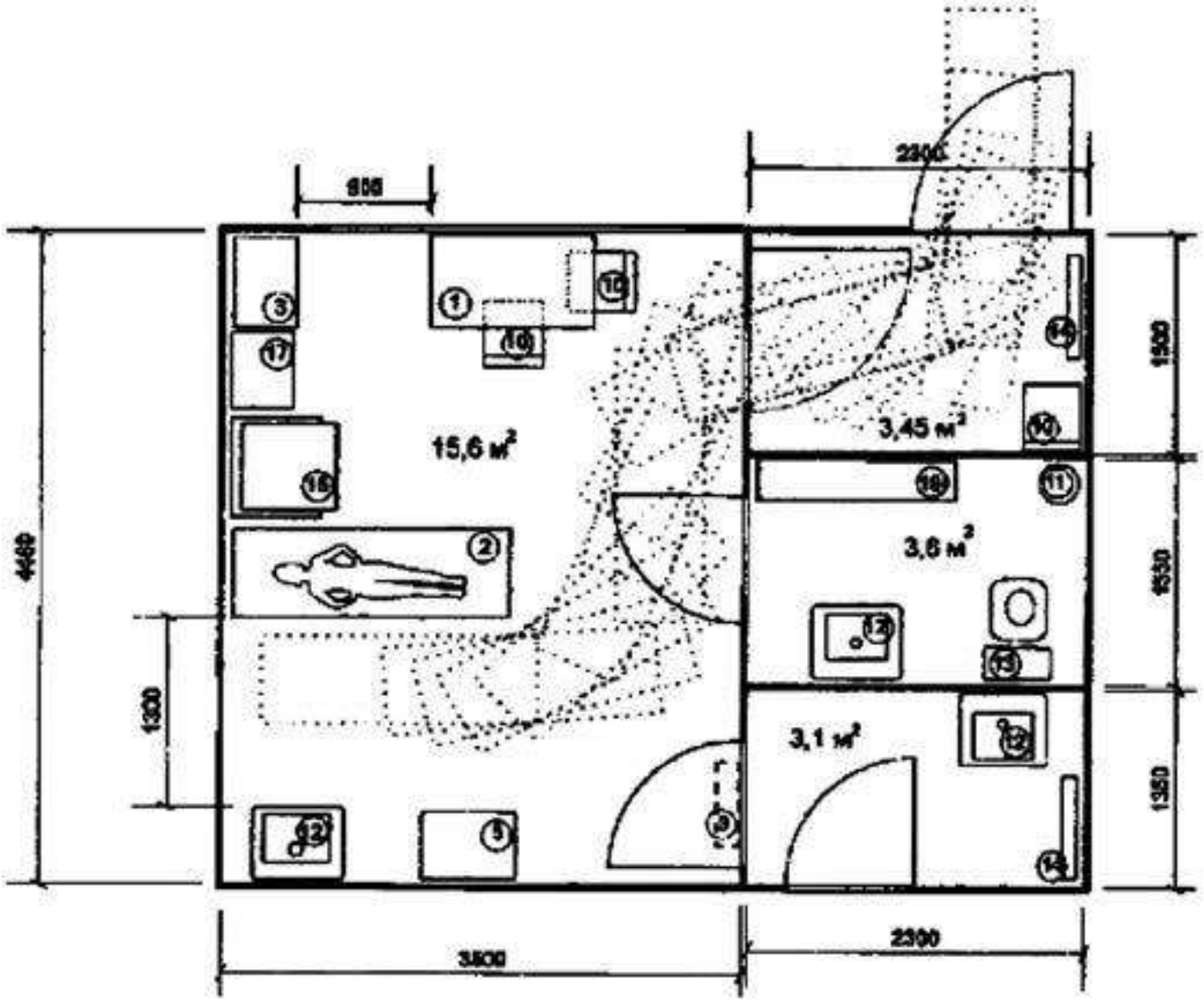


Observation room with 3 beds



Observation room with 2 beds

Examination rooms of hospital reception departments



Reception and examination ward of children's hospitals

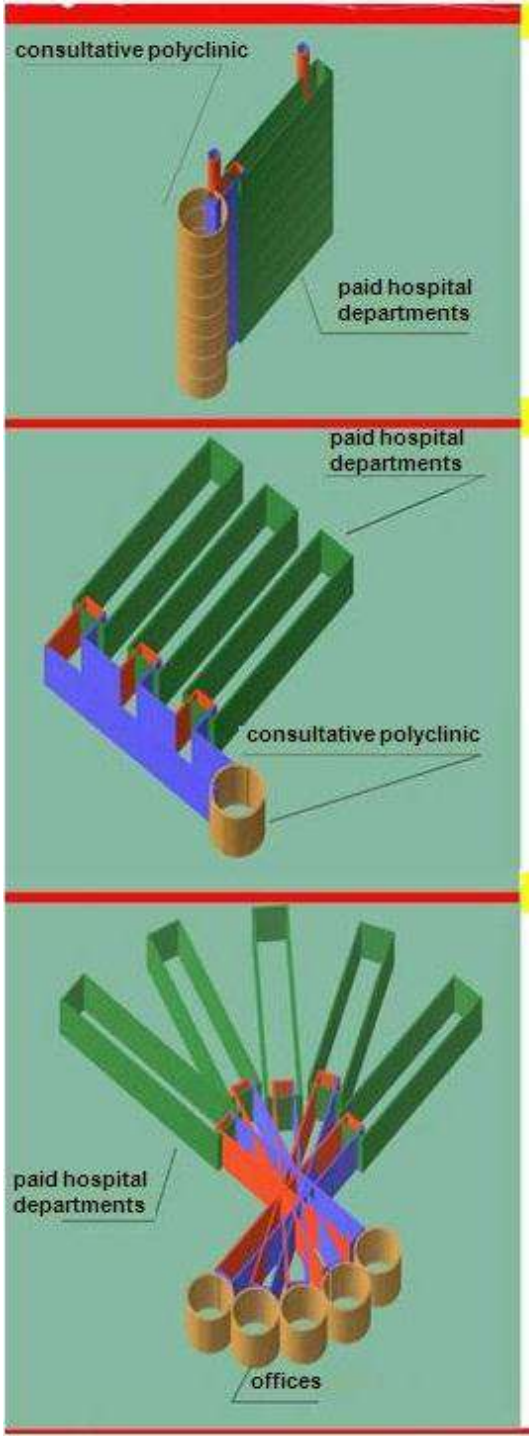
CHECK-OUT ROOMS, SPECIALIZED WARDS

The rooms for discharge of patients include a nurse's room, changing rooms, and a waiting room for treated patients.

TENT DEPARTMENTS

Each department of the hospital consists of tent sections and rooms shared by the department. The area for one bed in two or more bed wards is recommended to take:

Branches	Area per bed, m2
1. Infectious and tuberculosis diseases for adults	7,5
2. Infectious and tuberculosis diseases for children	6,5
3. Burn, restorative treatment for adults, radiological	10
4. Intensive Care Unit	13
5. Children's non-infectious diseases	6
6. Other	7



vrtical layout

- Cardiology Center>>
- MLPU " City Clinical Hospital № 5" >>

horizontal layout

+ MLPU " City Children's Hospital № 27"

+ GUZ NOKB named after N. A. Semashko

+ Road Clinical Hospital №1

+ Road Clinical Hospital №2

+ MLPU " City Clinical Hospital №12"

decentralized scheme

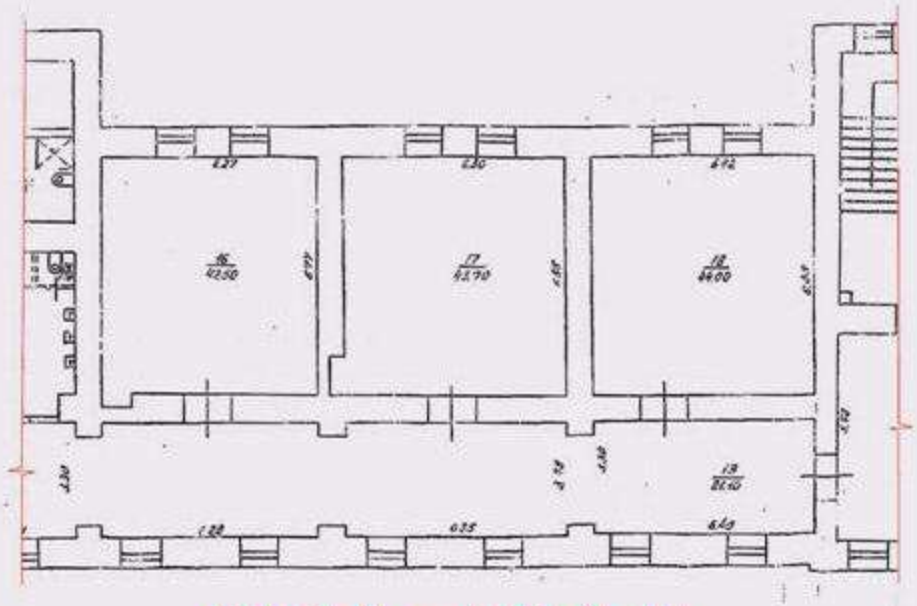
+ MLPU " Children's City Hospital №1"

+ MLPU " Children's City Hospital №17"

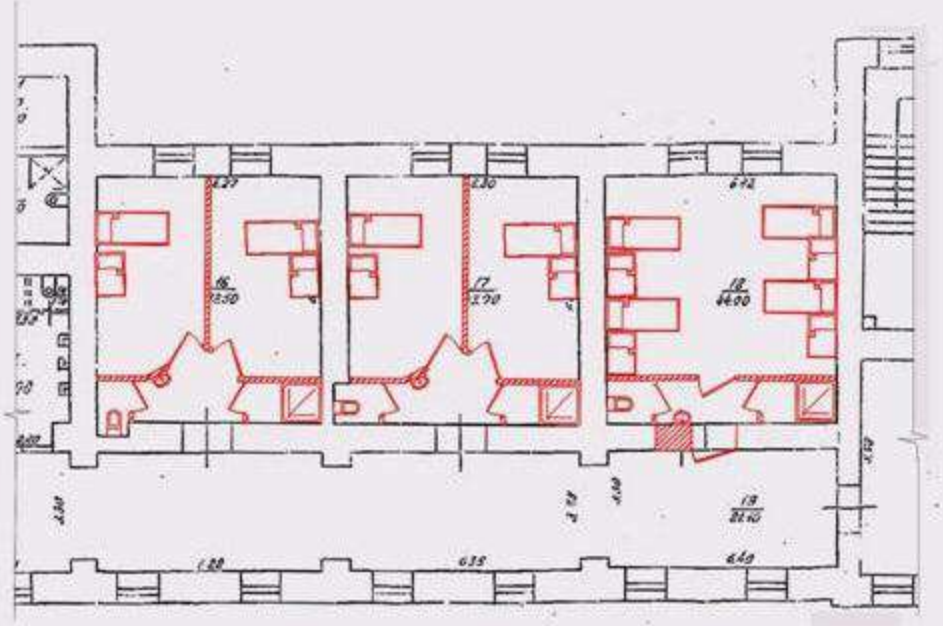
+ MLPU Hospital 29 "Zhemchuzhina" +

redevelopment

MLPU " Maternity Hospital №1"



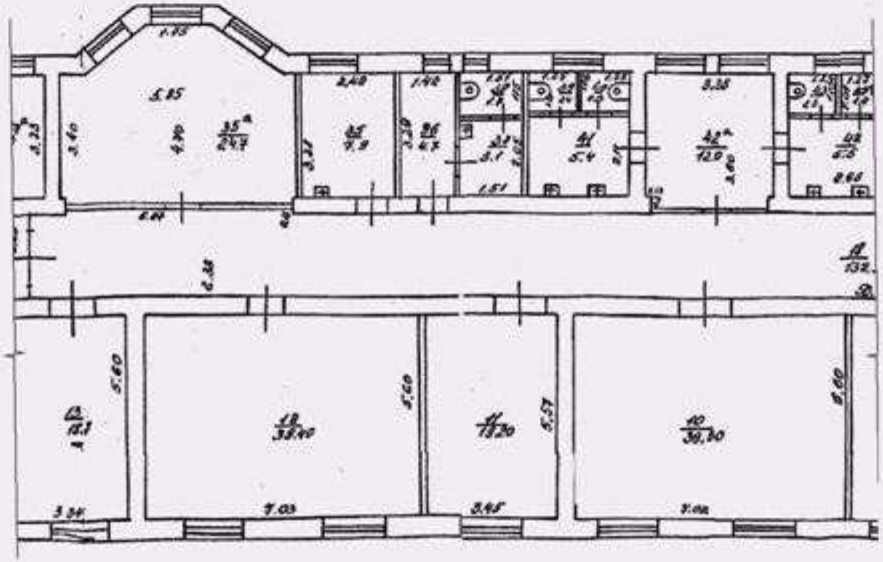
historical layout of tent cells



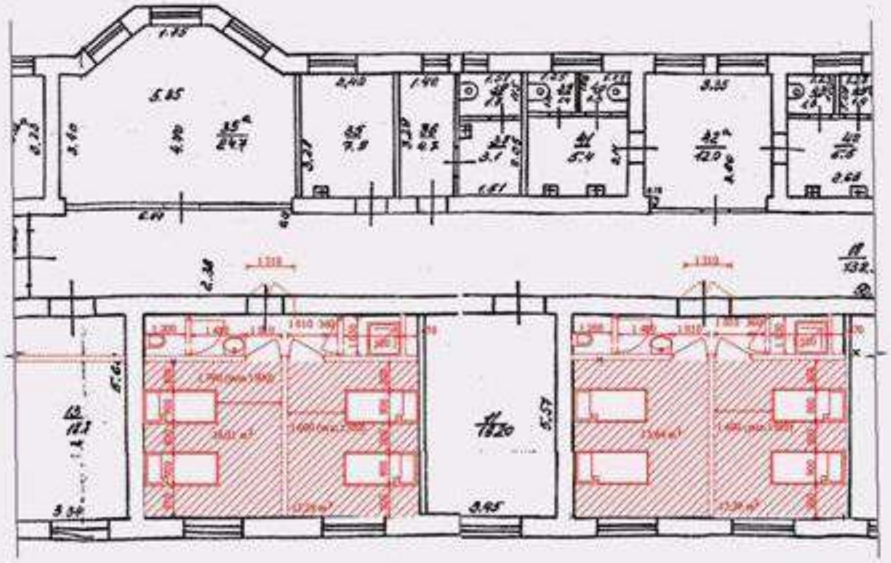
option with 1-and 4-bed wards for joint stay of newborns and maternity hospitals)

redevelopment

Surgical building of the city Clinical Hospital №12

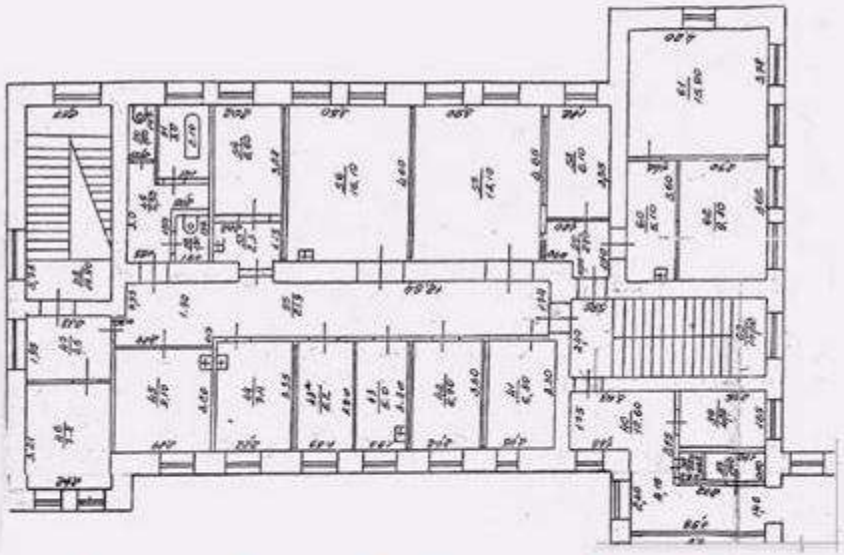


structure of paid cells before redevelopment

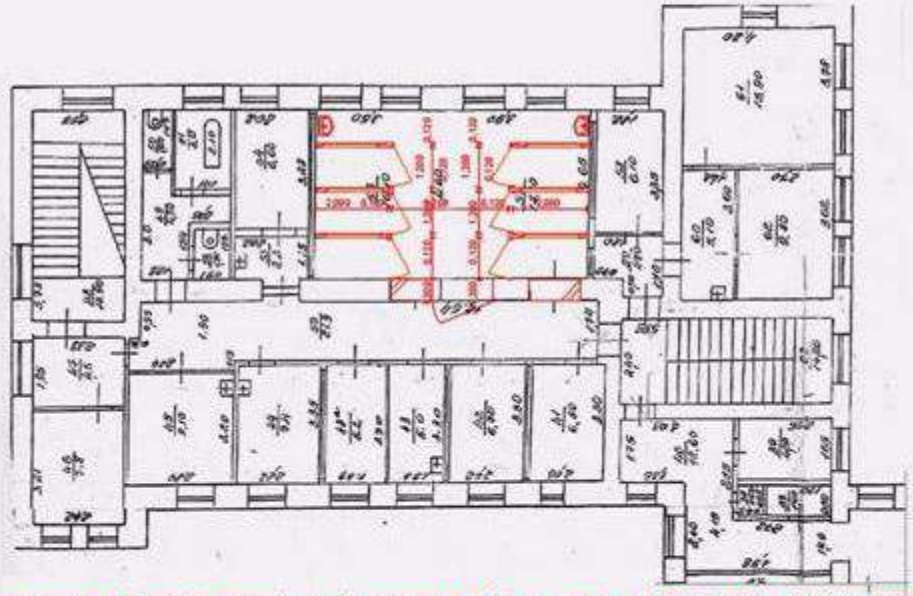


proposal to reorganize the structure of the tent cells

City Children's Hospital №17

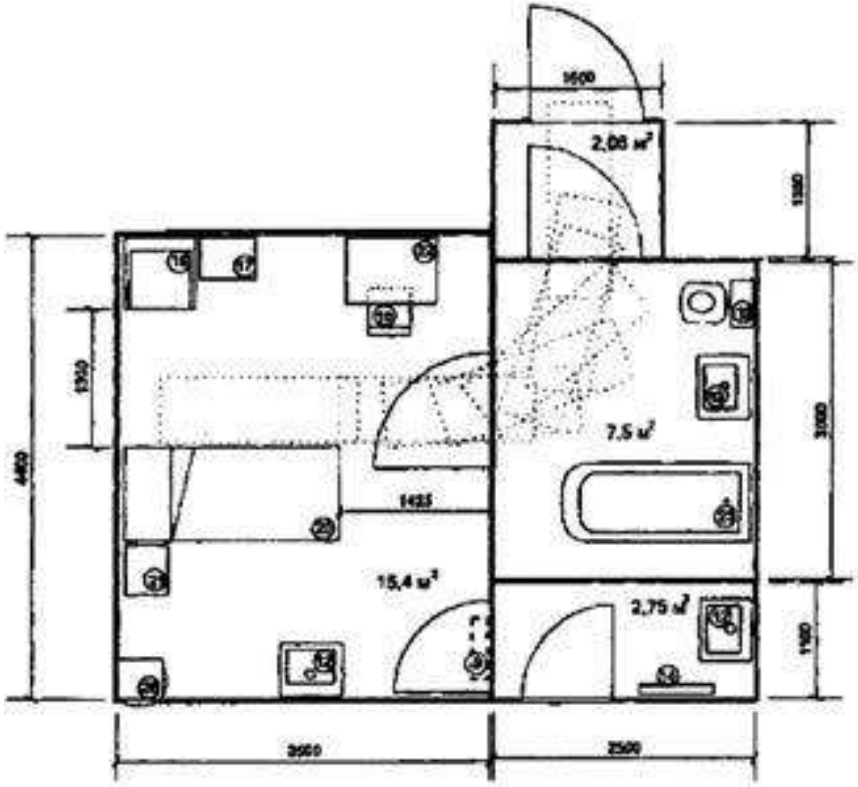


structure of paid cells before redevelopment

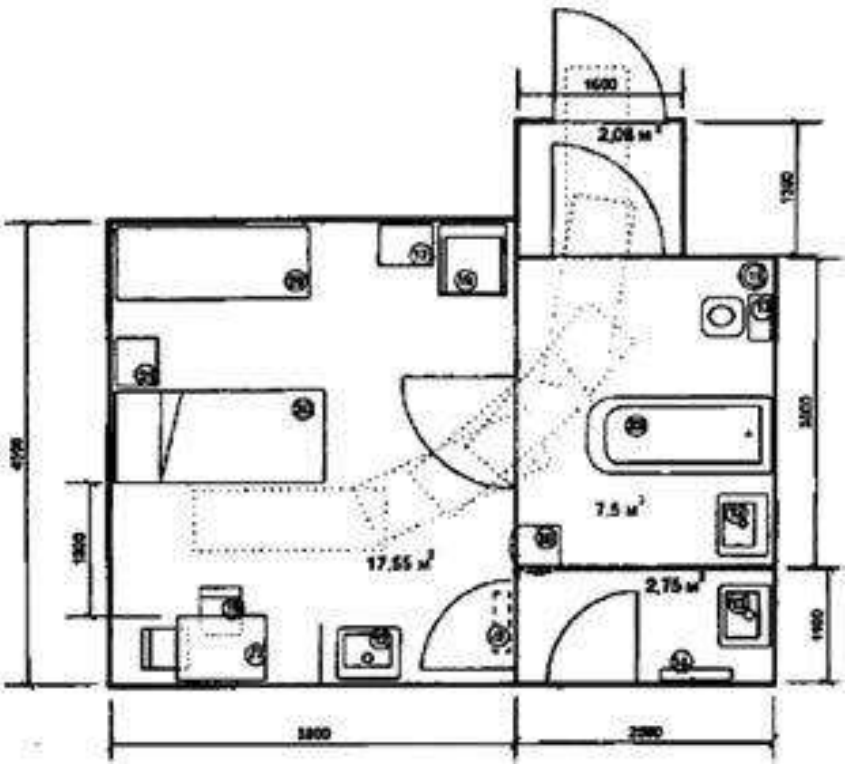


proposal for the redevelopment of a part of the tent cells with the use of individual cabins for weakened infants-refuseniks (taking into account the specialization of the hospital)

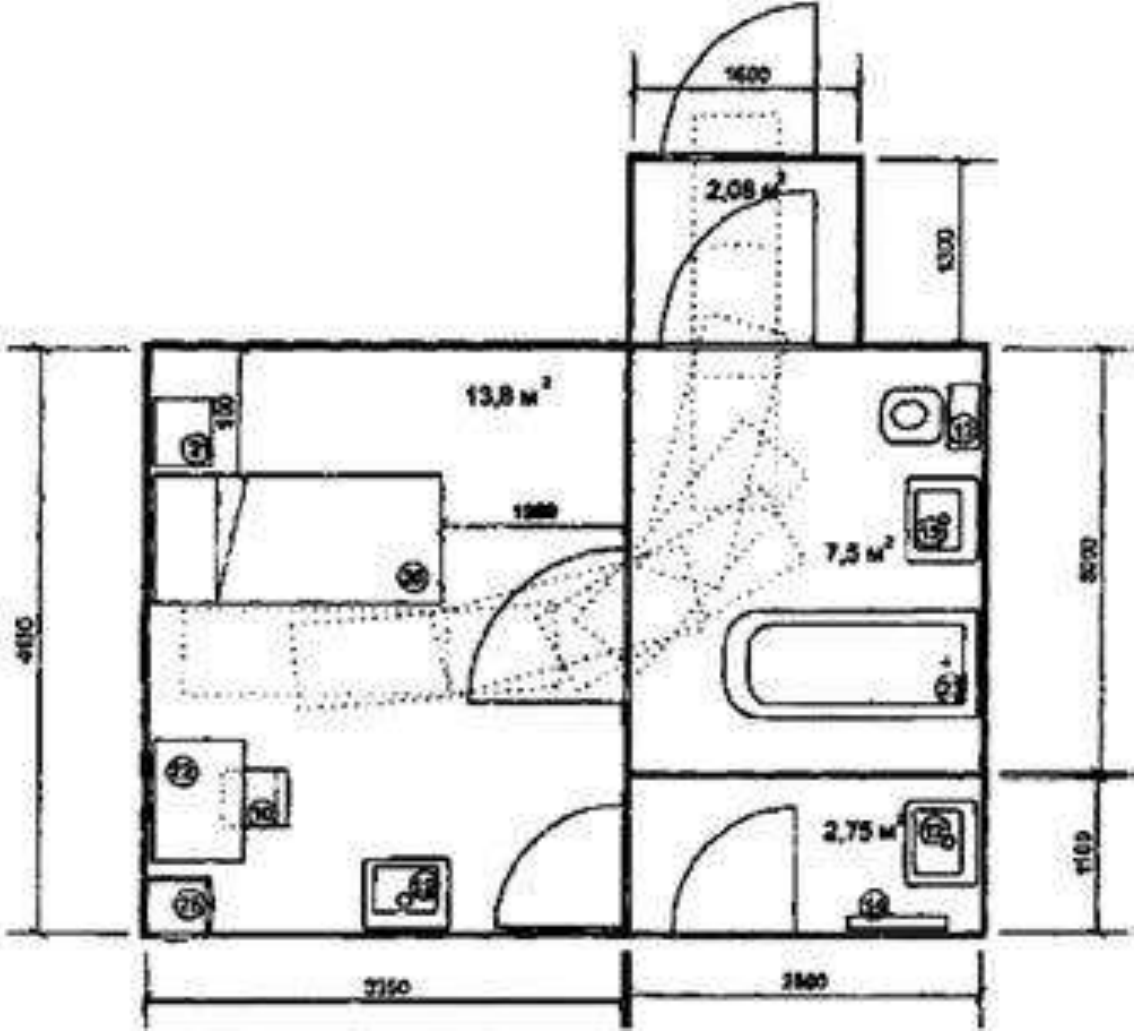
In addition to the chambers, in the ward of the sections included boxes and half box, nurse on duty post, doctor's office, procedural, butlers pantry, dining room, bathroom, kitchen and tableware, sanitary inspection room for the sick, washing, bathroom, sanitary units, facilities of washing and sterilization of bedpan, storage of clean linen, premises day stay patients. The tent section must be impassable. At the entrance to the entrance section, a vestibule-gateway should be provided. Quantity beds in the ward section, except for infectious diseases and psychiatric departments, should be equal to 30, and in the section for children under the age of 1 year — 24. In each section of the children's department, two boxes or half - boxes should be provided. It is necessary to provide for the office of the head, the office of the senior nurse, a room for portable equipment, a staff room, and sanitary units in the departments. The number of seats in canteens should be accepted in hospitals (departments) of tuberculosis, rehabilitation, psychiatric, as well as in postpartum physiological departments equal to 80%, in other hospitals (departments) — 60% of the number of beds in the section. It is allowed to provide one dining room for two sections of the ward department, and in tuberculosis hospitals — one dining room for all the ward departments of the building.



Isolation and diagnostic box at children's hospitals



Mother and child isolation and diagnostic box



Isolation and diagnostic box of infectious diseases hospitals for adults

Functional and planning schemes of isolation and diagnostic boxes

SURGERY

The surgery should be designed for a single operating table. The number of operating tables in the surgery unit should be assumed to be equal to one table for 30 beds in surgical departments and one table for 25 beds in emergency departments. The surgery unit, as a rule, should have two impassable departments: septic and aseptic. The number of beds in post surgery wards should be provided according to the norm at the rate of two beds per surgery unit. Wards should be placed outside the surgery unit. The surgery unit includes the following facilities: surgery, pre surgery, sterilization, anesthesia, equipment room, storage and preparation of blood, urgent laboratory tests, instrumental material, entire lung machine, plaster, closet portable equipment, storage of the portable x-ray machine and a photo lab, office head of the Department, the Cabinet of doctor-anesthesiologist, office surgeon, nurses, pantry clean Laundry, pantry, cleaning equipment.

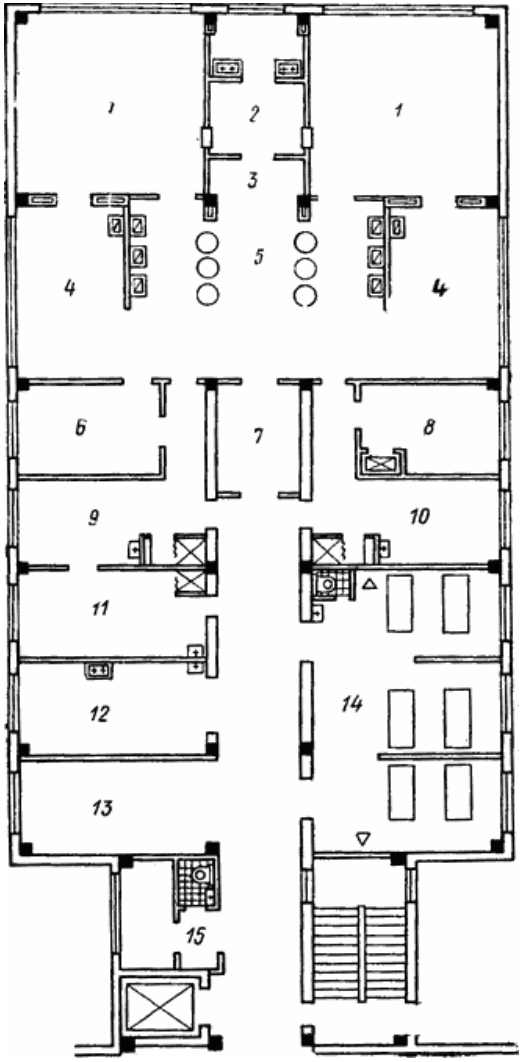


Diagram of surgery and bandage premises: 1 — surgery; 2 — sterilization; 3 — switching of the equipment; 4 — anesthesia; 5 — pre surgery; 6 — equipment room; 7 — gateway-preparatory;8 — material room; 9 — surgeon's room; 10 — nurses ' room; 11 — protocol room; 12 — anesthesiologist's room; 13 — staff room; 14 — post surgery ward; 15 — room for storing dirty laundry.

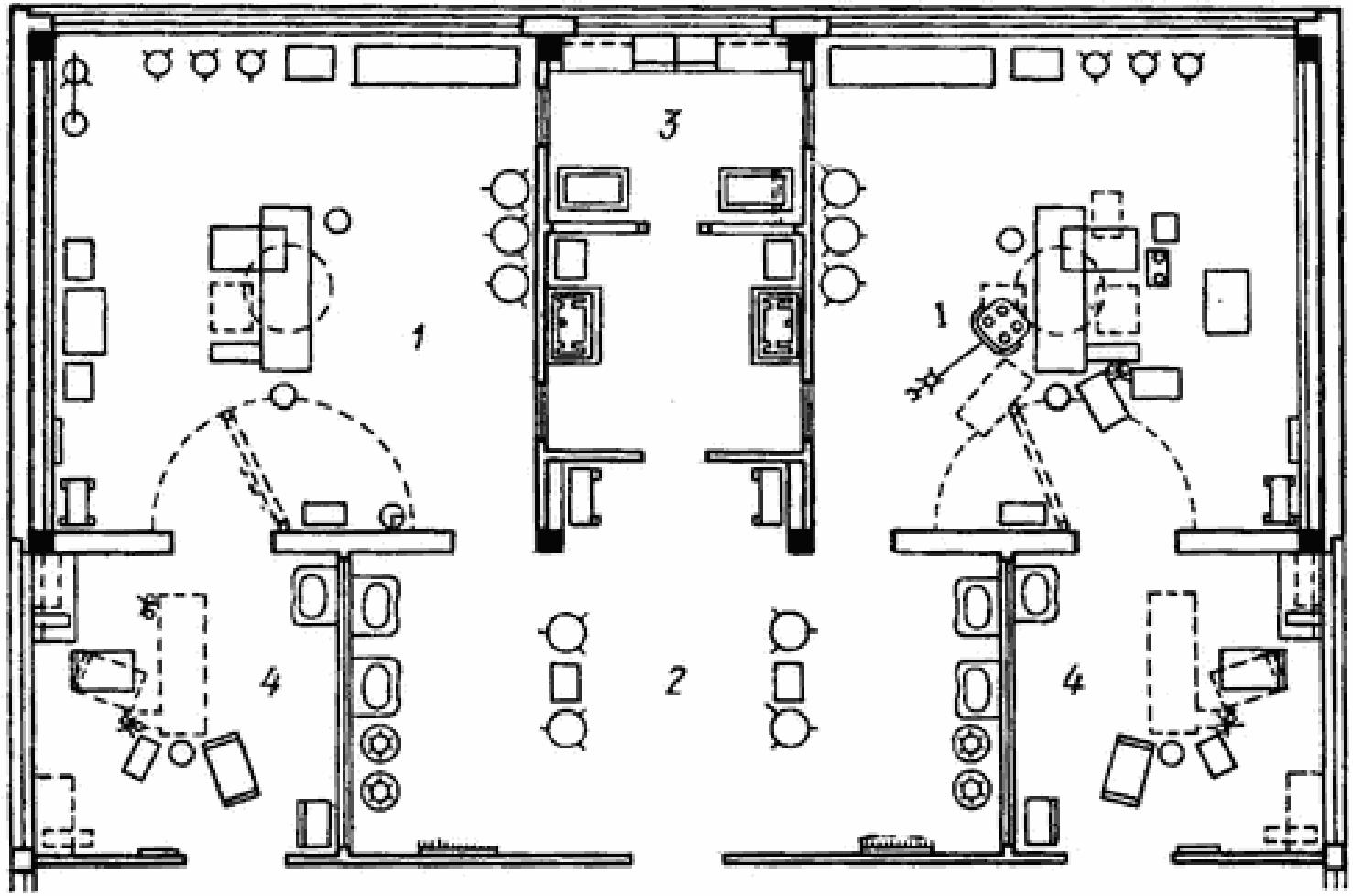
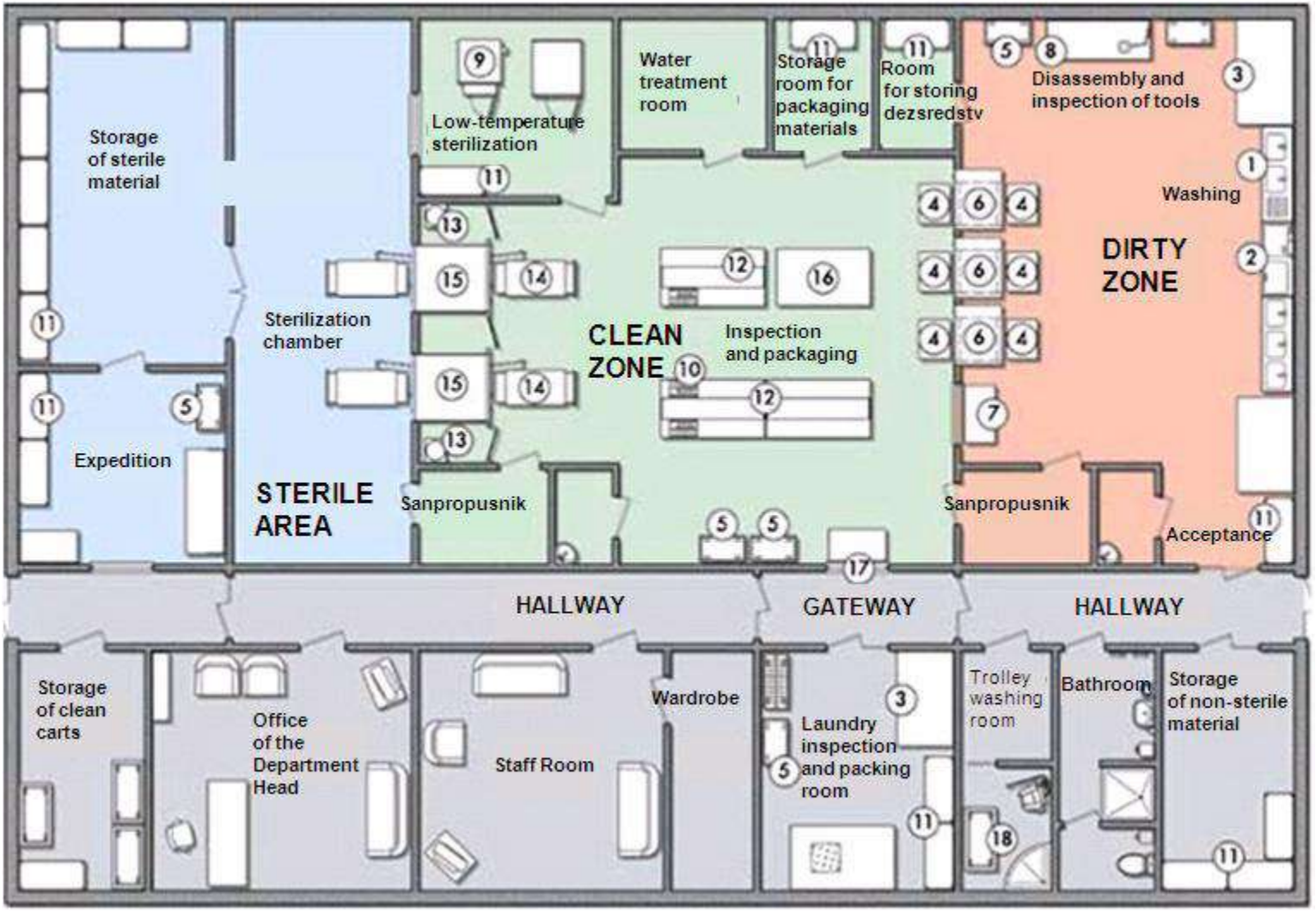


Diagram of a surgery consisting of 2 surgery units:
1 — surgery; 2 — pre surgery; 3 — sterilization; 4 — anesthesia



Central sterilization department

DEPARTMENTS OF ANESTHESIOLOGY AND INTENSIVE CARE

Departments of anesthesiology and intensive care should be provided in multidisciplinary republican hospitals with 500 beds or more, if there are at least 70 surgical beds, and in maternity hospitals with 300 beds or more. Intensive care units should be provided in multi-specialty hospitals for adults with 800 beds or more and in children's hospitals with 400 beds or more. The departments of anesthesiology and intensive care should consist of two divisions: for patients coming from the hospital's ward departments, and for patients admitted to the hospital in addition to the emergency department. Their premises include: intensive care room, pre- intensive care room, emergency analysis laboratory, sterilization room, equipment storeroom, intensive care unit, nurse on duty post, bedpan washing and sterilization room, pantry, office of the head of the department, office of the anesthesiologist, staff room, sanitary unit.

FUNCTIONAL DIAGNOSTICS DEPARTMENTS

In multi-specialty hospitals with 400 or more beds, two departments of functional diagnostics should be provided: one department for the reception of patients in the hospital; the other-for the reception of visitors to the polyclinic department. In hospitals with less than 400 beds, one department should be provided for the reception of in patients and visitors to the polyclinic department.

DEPARTMENTS OF REHABILITATION TREATMENT

The department of rehabilitation treatment, as a rule, should be provided for general for patients of the hospital and for visitors to the polyclinic department of the hospital. The entrances to the department of rehabilitation treatment for patients in the hospital and for visitors to the polyclinic department should be separate. Rehabilitation treatment includes physiotherapy procedures: electro-light therapy, heat therapy, mud therapy, as well as massage, physical therapy (including swimming pools, baths for the treatment of movement in water), hard and mechanical therapy. Physiotherapy departments are divided into a "dry" zone (electric, light, and heat treatment rooms) and a "wet" zone (water treatment, mud treatment), which is associated with different requirements for the level of humidity, electrical safety, and interior decoration.

The electros nome treatment room should be placed in sound-proofing conditions. It is recommended to place it in an impassable area of the department, taking into account the need to focus the windows to the quietest area of the site. The cabinet should have a pass-through equipment room with an observation window which performs the function of a sound-proof gateway.
The photarium is intended for carrying out group procedures of preventive irradiation with ultraviolet rays. At the photaria, there is a changing room for patients and a control room with an area of 4 m2, where a nurse's workplace is organized. The control room must have a glazed viewing window and a sound alarm. The entrance to the control room is organized from the treatment room. The reflexology room should consist of two adjacent and isolated rooms — the doctor's office and the treatment room, equipped with 4-6 treatment places, which are arranged in separate offices. Patients are placed on beds and chairs with the possibility of staff two ways.

HEAT TREATMENT

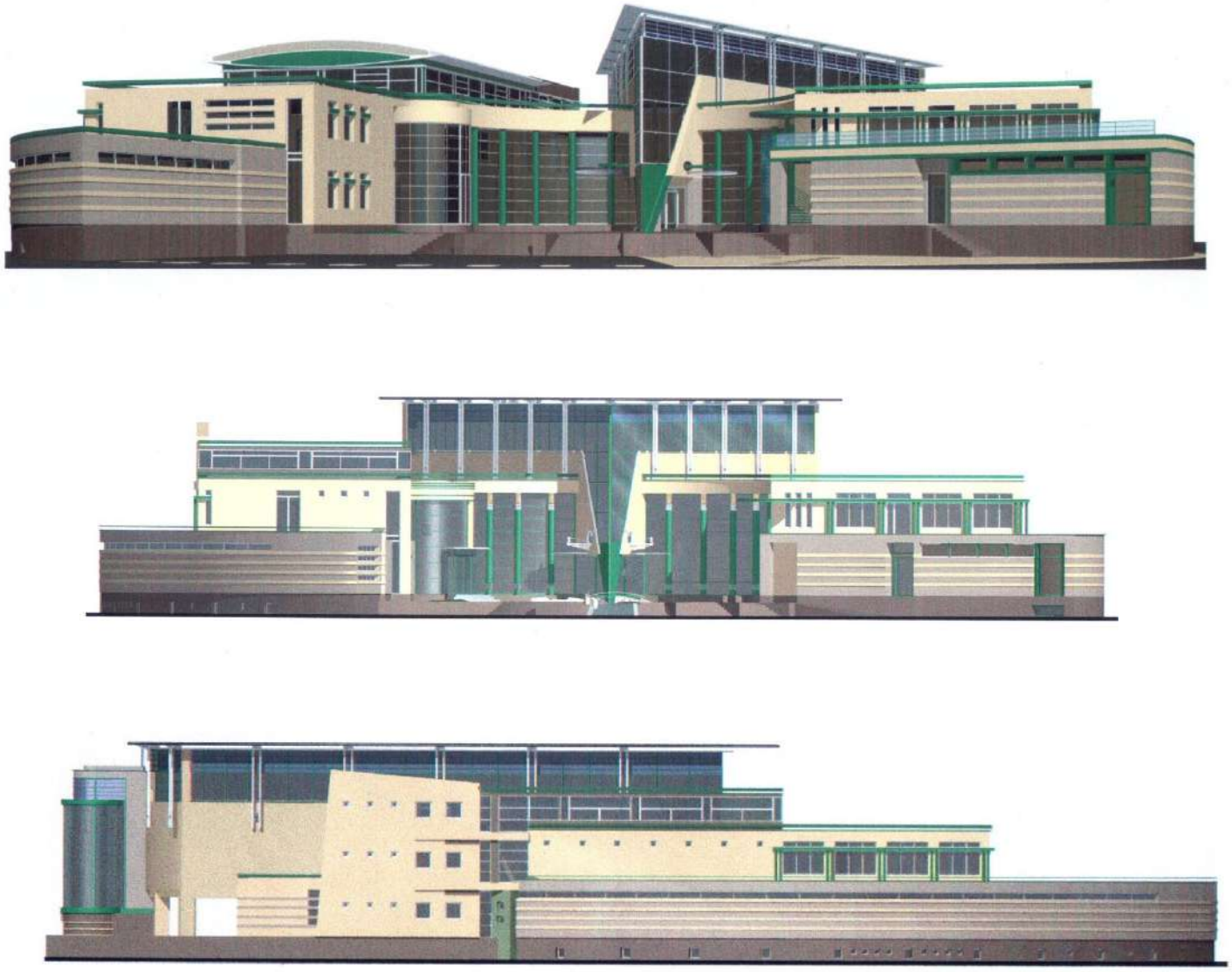
The heat treatment room is designed for paraffin and ozokeritotherapy procedures. At the office, a utility room for heating paraffin and ozokerite, equipped with a ventilation equipment, should be designed.

An office for aerosol, electroaerosol therapy (with inhalatorium) requires the placement of a compressor to individual inhalation devices next to them or in adjacent room. Compressors for inhalation installations for several treatment places should be placed in the basement or cellar floor. Contrast baths are carried out in two adjacent pools with a size of 1.75 × 1.75 and a depth of 1.2 (1.3) m. The transition from one pool to the other is carried out by stairs between the pools.

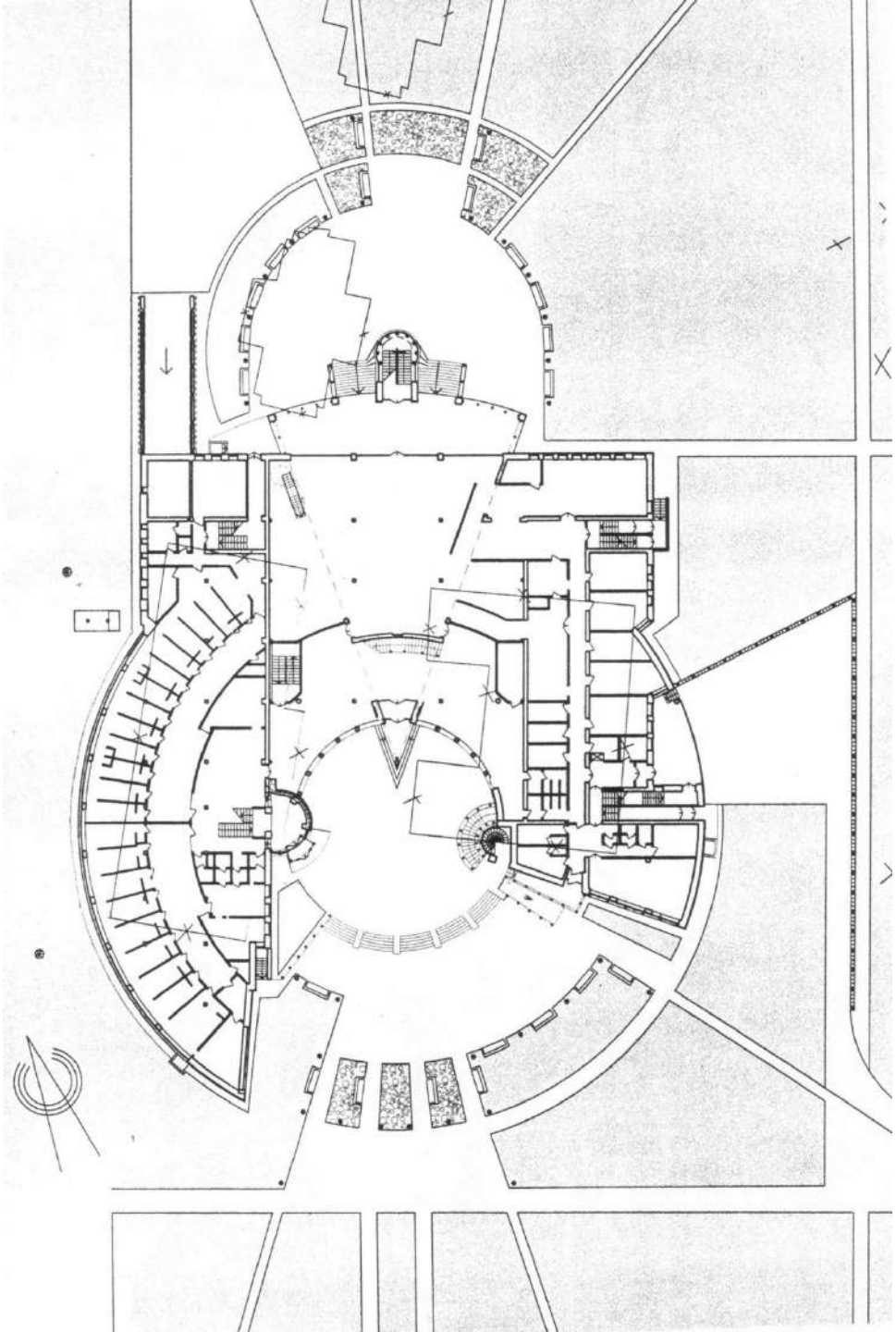
MUD TREATMENT

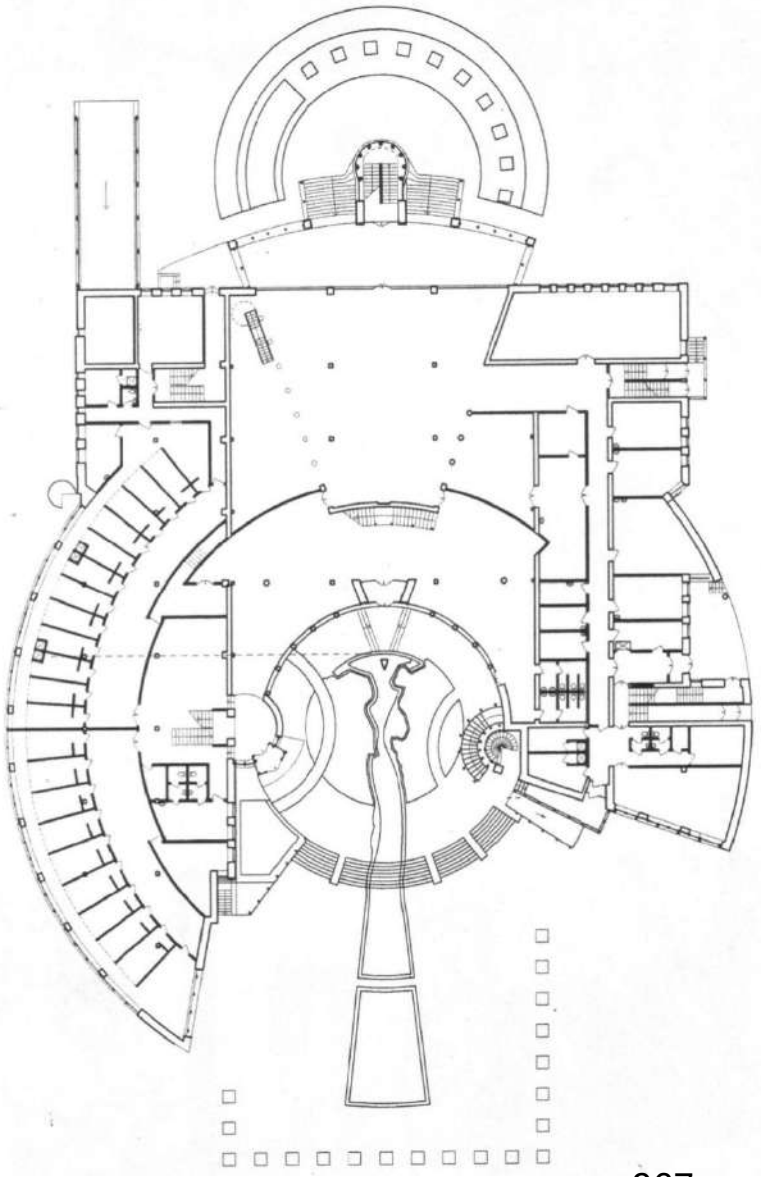
Rooms for mud treatment, hydrogen sulfide and radon baths should not be located directly under the tent compartments. The mud treatment room should consist of separate cabins with adjacent shower cabins and two cabins for undressing patients. The entrance for patients is provided only through the cabins for undressing and showers. Electro-mud procedures should be carried out in a separate isolated room, which is planned to be included in the composition of the mud treatment rooms, but arranged in compliance with the requirements for electric light treatment rooms.

A mud storage area should be provided for the storage of peat mud. The therapeutic mud is fed to the mud kitchen adjacent to the mud treatment hall, where it is heated in specialized heaters and conveying devices. If the total number of mud treatment sites is seven or more, the process of transporting and heating mud should be mechanized.



Water and mud clinic in sanatorium "Gorodetsky" in Nizhny Novgorod region, architect V. Bykov, A. Gelfond, 2000





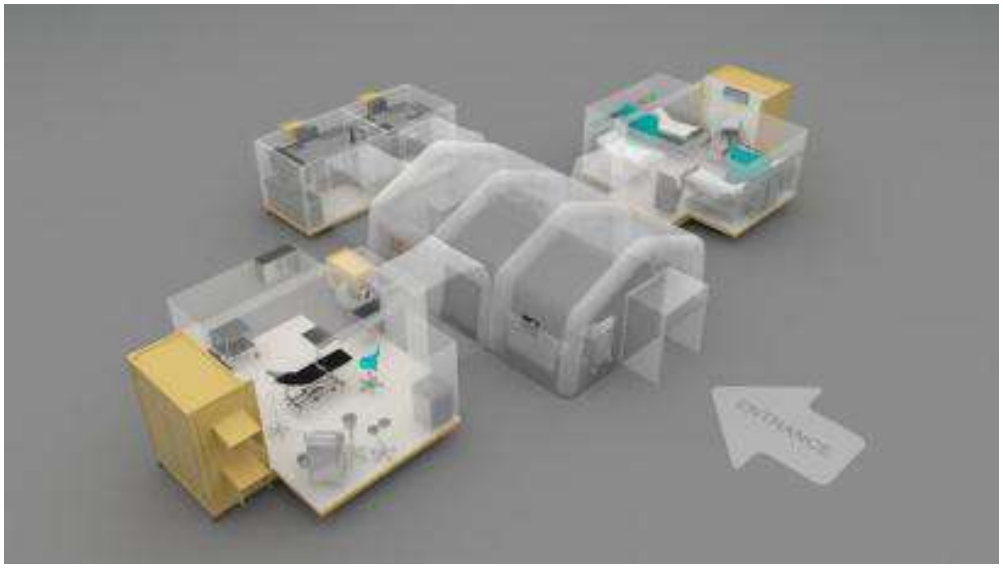
HOSPICES

Hospices are medical institutions designed to provide palliative care and alleviate the suffering of mainly cancer patients in the late stages of the disease. The implementation of the main provisions of the hospice concept should be carried out in architectural environment that provides physical and psychological comfort to patients and their relatives, full-time and freelance hospice staff.

Currently, there are three options for placing hospices: on a separate territory; in the form of a separate building on the territory of the hospital; hospices built into the hospital building. As a rule, hospices are one-or two-story buildings.

Basic requirements for hospice design:
— a variety of room capacities: for one, two and four beds;
— the wards are larger than in traditional inpatient medical facilities;
— availability of rooms for family members to stay at night;
— the presence of a corner for a relative in the wards of patients;
— the presence of a small kitchen for cooking;
— the presence of a universal hall, which is also used for a library;
— separate entrances for the entire building and for all its zones;
— availability of verandas, terraces, as well as outdoor green recreation areas;
— availability of communications connecting the hospital area with the staff area and office premises;
— organization of free access to patients of their friends and relatives, volunteers, representatives of charities, priests.

PRE-BUILT TEMPORARY MEDICAL CENTERS



Hospital of prefabricated structures

Building for the staff of the City Clinical Hospital No. 52 in Moscow

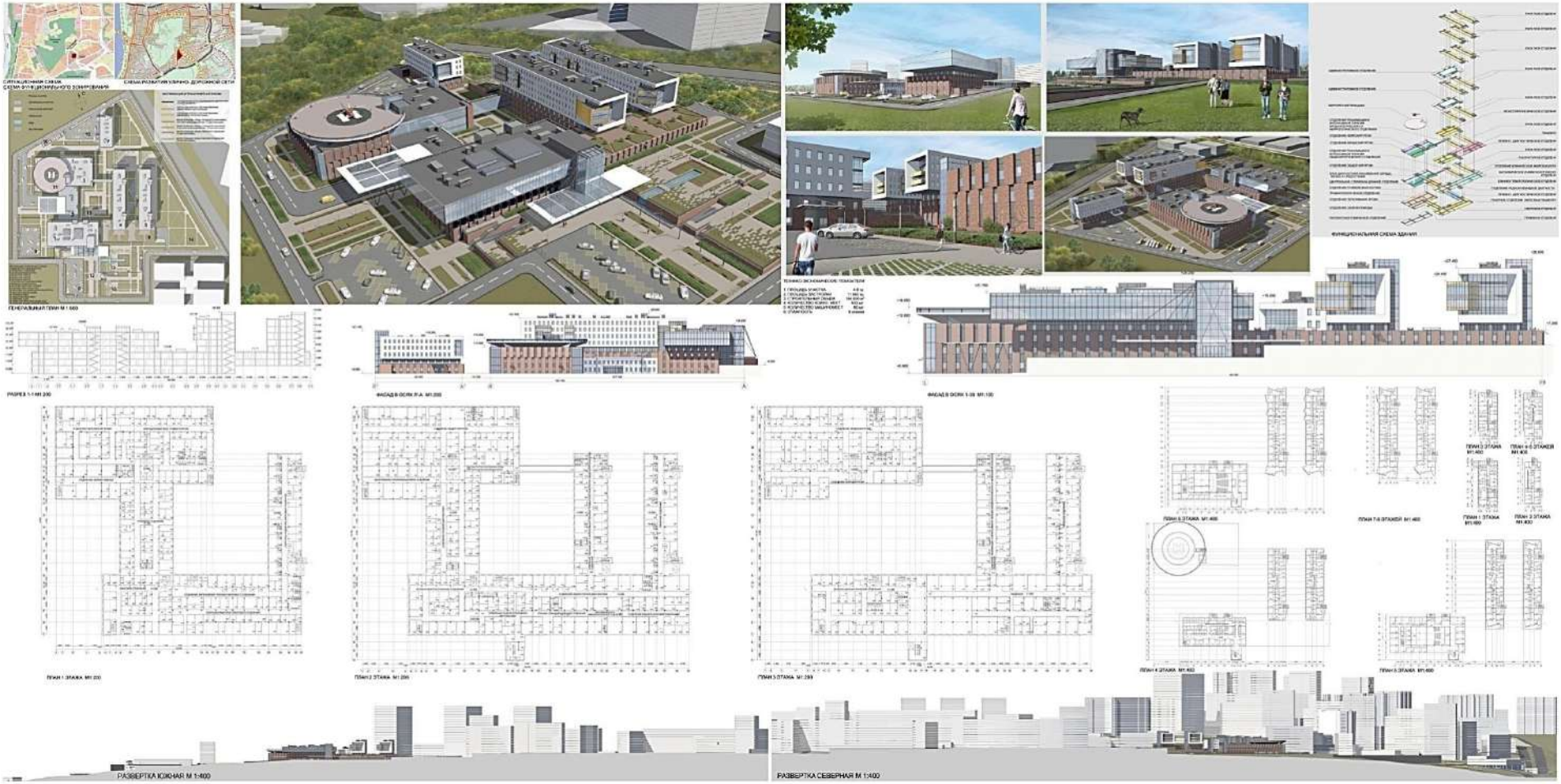
Construction of infectious diseases hospital in Moscow, 2020

Smart Module Modular Hospital in Yekaterinburg

Temporary hospital in Kazakhstan, 2020

Modular polyclinic in Moscow and St. Petersburg, 2020

Medical center for 60 people, 14 x 35x3, 2020



Hospital of Disaster Medicine in Academician Sakharov Street in Nizhny Novgorod.
Bachelor Golubeva Darya Anatolyevna,
Supervisor Professor A. B. Dekhtyar, 2018

Research Institute of Pediatric Surgery and Burn Medicine within the boundaries of Kozitsky, Ivliev, and Bykov Streets in Nizhny Novgorod.

Bachelor Elena Petrova, Supervisor Associate Professor A. Murunov

LECTURE 18. MULTIFUNCTIONAL BUILDINGS AND COMPLEXES. BUSINESS CENTERS."END-TO-END" ARCHITECTURAL TYPOLOGY OF PUBLIC BUILDING


SJØBODEN


HSBC

Currently, it is quite rare to find any types of public buildings "in their pure form". This is due to several reasons:
— it is advisable to combine service buildings into a single public center with a common compositional and planning solution from a social, urban planning, transport point of view;
— the structure of such a center may include buildings of various functions: shopping, entertainment, sports, administrative, credit and financial, public catering enterprises; in connection with the growth of urbanization and the expansion of multifunctional residential complexes they have actively developed links between residential and public elements of the urban environment;
— there are typologically new buildings — multipurpose buildings of the offices and business centers, including in its membership not only office space, but also institutions of trade and general-governmental offices, gyms, hotels, banks, cinema and video halls, spaces for working with children as well as housing for employees;
— finally, throughout its existence, the building often changes the function and typology.

Unified methodological approach to the design of multifunctional complexes:
— the premises for various purposes that are part of such a complex are designed according to the standards adopted for each type of public building;
— functional processes in them should occur independently of each other, at the same time, a single space-planning solution should provide convenient relationships and an unhindered possibility of joint functioning;
— in contrast to specific rooms, common and facility rooms for various elements can be combined in multifunctional complex;
— the space-planning solution of the complex as a whole must meet the current standards for public buildings.

EVOLUTION OF THE BUSINESS CENTER

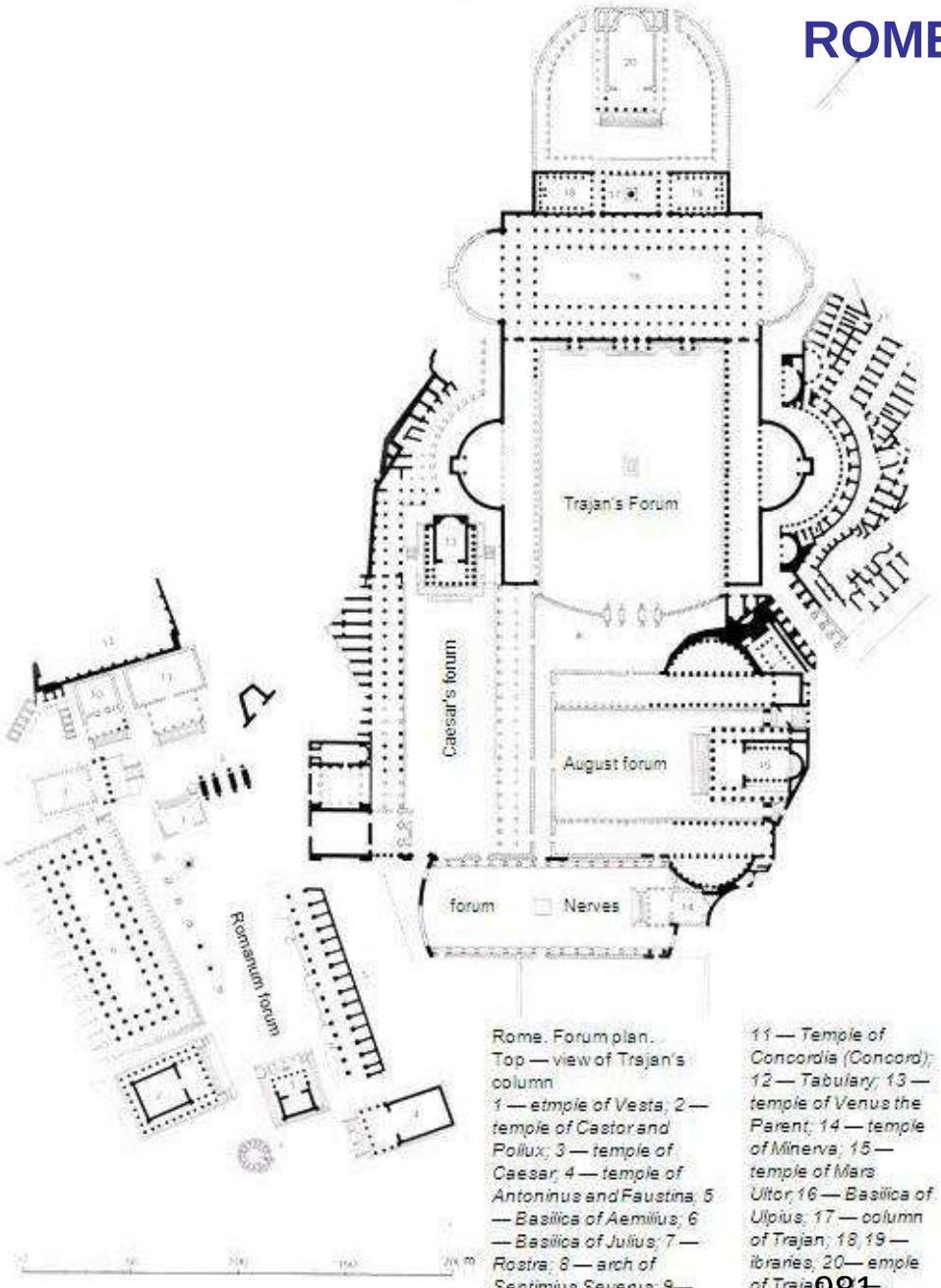
We will trace the process of forming a multifunctional building on the example of a business center as the most demanded type of public structure at the present time. The business center has a wide range of typological features: a diverse set of functions, planning and composition schemes. This is due to the socio-cultural dynamics of business relations, which led to the complex evolution of the building on the basis of diverse historical prototypes. It is necessary to identify, what features of each of these structures formed the basis of modern business center structure studying the patterns of public building architecture in which the business function was present.

PUBLIC AND BUSINESS CENTERS OF ANTIQUITY

THESSALONIKI

The social and business center of the Cretan-Mycenaean civilization was the citadel palace; the agora was the center of the ancient Greek polis. Forums have developed as universal centers of ancient Roman cities.

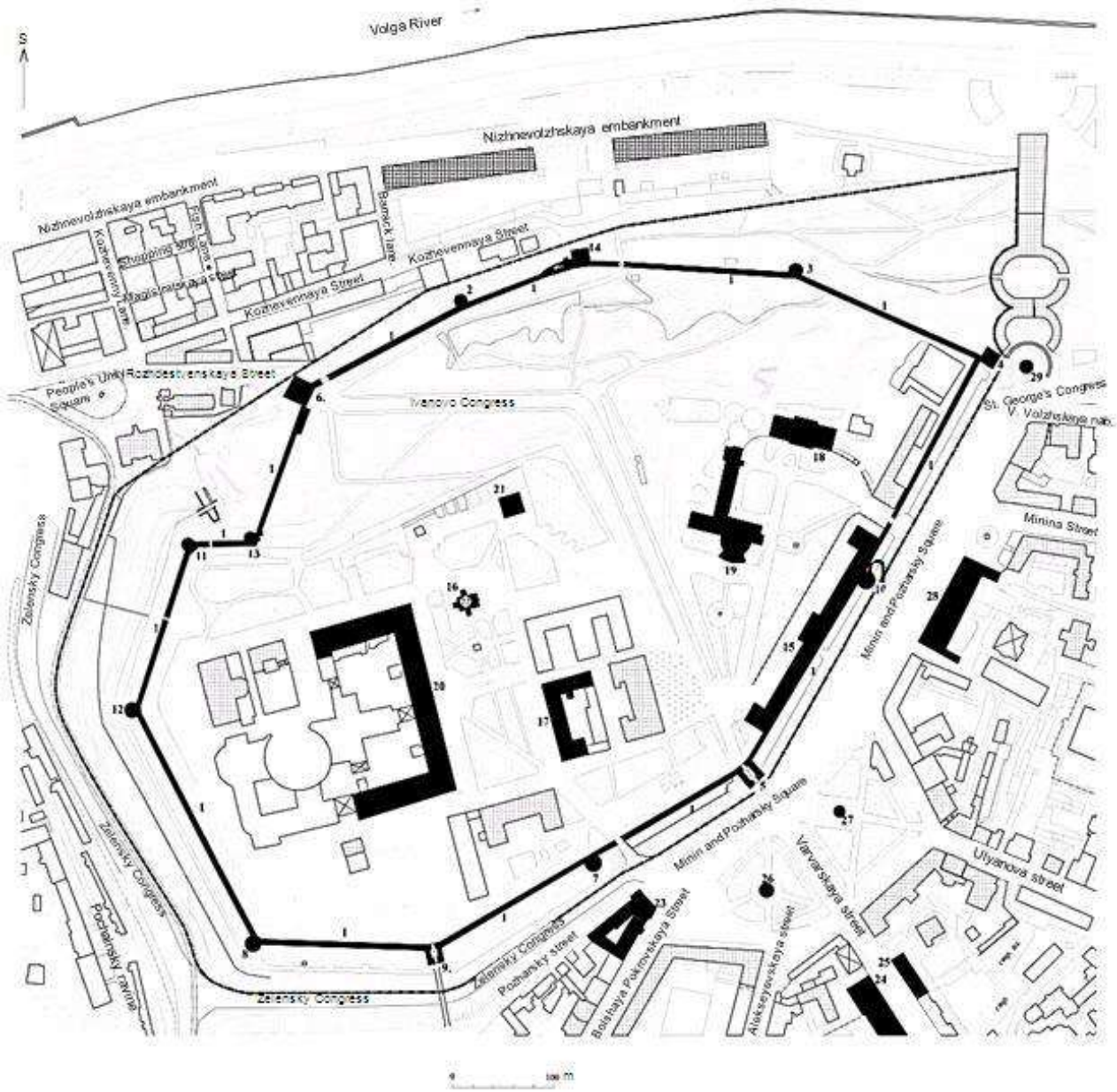
ROME



Rome. Forum plan.
Top — view of Trajan's column
1 — etmple of Vesta; 2 — temple of Castor and Pollux; 3 — temple of Caesar; 4 — temple of Antoninus and Faustina; 5 — Basilica of Aemilius; 6 — Basilica of Julius; 7 — Rostra; 8 — arch of Septimius Severus; 9 — emple of Satum; 10 — temple of Vespasian 11 — Temple of Concordia (Concord); 12 — Tabulary; 13 — temple of Venus the Parent; 14 — temple of Minerva; 15 — temple of Mars Ultor; 16 — Basilica of Ulpius; 17 — column of Trajan; 18, 19 — libraries; 20 — emple of Trajan; entrance to Trajan's market

SOCIAL AND BUSINESS CENTERS OF THE MIDDLE AGES

NIZHNY NOVGOROD KREMLIN



Explication*

Nizhny Novgorod Kremlin (ensemble), XVI-XX centuries:

1. Walls, 1500-1511.

Towers:

2. White beginning. XVI c.
3. Borisoglebskaya, recreated in 1972-1974.
4. St. George's Square, nach. XVI c.
5. Dmitrievskaya, nach. XVI century, rebuilt in 1895.
6. Ivanovskaya, nach. XVI c.
7. Storeroom, beginning. XVI c.
8. Koromyslova, nach. XVI c.
9. Nikolskaya, nach. XVI c.
10. Gunpowder, beginning. XVI c.
11. Severnaya, nach. XVI c.
12. Tainitskaya, nach. XVI c.
13. Sentinel, beginning. XVI c.
14. Zachatskaya, nach. XVI c.

Objects of cultural heritage of federal significance located on the territory of the Nizhny Novgorod Kremlin Ensemble:

15. Arsenal, 1841-1843 (Kremlin building 6)
16. Mikhailo-Archangel Cathedral, 1672 (Kremlin)
17. House of the Vice-governor, 1825-1827 (Kremlin, building 9, letter A)
18. Military Governor's House, 1837-1841. (Kremlin, building 3)
19. House of Soviets, 1931 (Kremlin, building 5)
20. Public offices. The pilot Nesterov P. N.,1782-1785,1831-1834, was born in this building in 1887. (Kremlin, building 2, letters A, A1, B)
21. Obelisk erected in honor of the leaders of the people's militia in 1612, Kuzma Minin and Dmitry Pozharsky, 1828 (Kremlin)
22. The grave of Kuzma Minin, one of the leaders of the people's militia 1612, died 1616. (Kremlin, Archangel Cathedral)Objects of cultural heritage of federal significance located outside the territory of the Nizhny Novgorod Kremlin Ensemble:
23. The building of the City Duma, 1901-1904 (Bolshaya Pokrovskaya Street, 1 letter A)
24. Academic building, 1843-1846 (Varvarskaya Street, 3 letters A, A1)
25. Evenius Pharmacy building, 1789-1792 (Varvarskaya Street, 4 letters A, A1)
26. Cast-iron fountain, 1840s (Minin and Pozharsky Square)
27. Monument to Kuzma Minin, 1989 (Minin and Pozharsky Square)
28. Seminary building, 1824-1828 (Minin and Pozharsky Square, 7 letters A)
29. Monument to V. P. Chkalov, 1940 (Minin and Pozharsky Square)

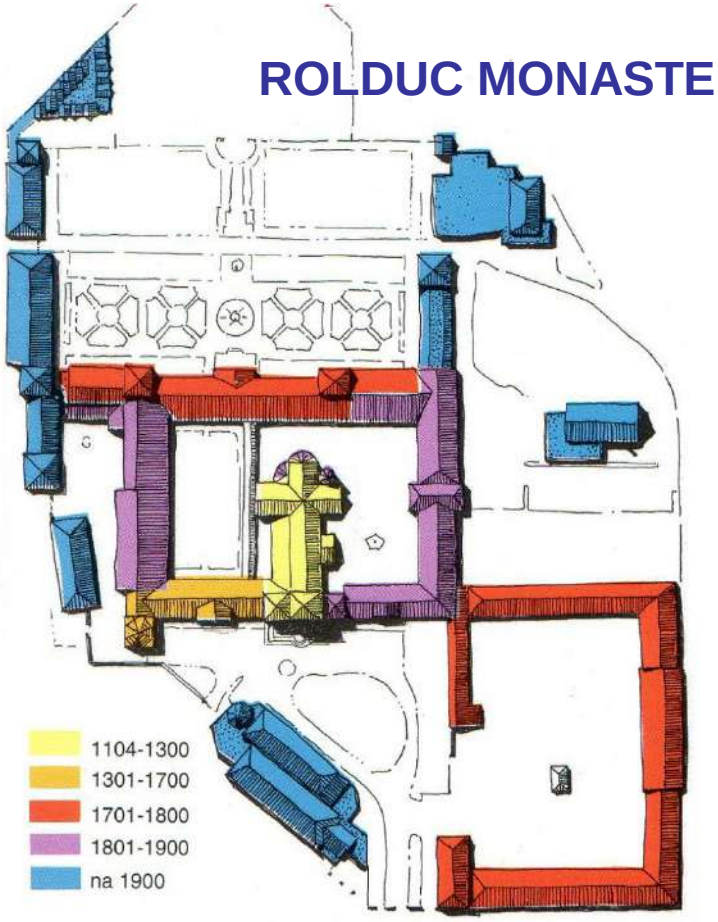
Symbol name

•the border of the protected area-the territory of the monument of history and culture of federal significance-the Nizhny Novgorod Kremlin (approved by the decree of the administration of the Nizhny Novgorod region of 11.09.2000 No. 232)

Note

***- the numbering of the towers is given in accordance with the List of objects of cultural heritage (historical and cultural monuments) of thecity of Nizhny Novgorod (as of 01.01.2005)**

ROLDUC MONASTERY, NETHERLANDS



In the early stages of the Western European Middle Ages culture, monasteries and temples were powerful business and banking centers. They acted as economic and financial "dictators", performing managerial, office and banking functions.

987

GRENOBLE, FRANCE

THESSALONIKI. GREECE

BERGEN, NORWAY


Baklommen


ENHJØRNINGEN
SJØBODEN

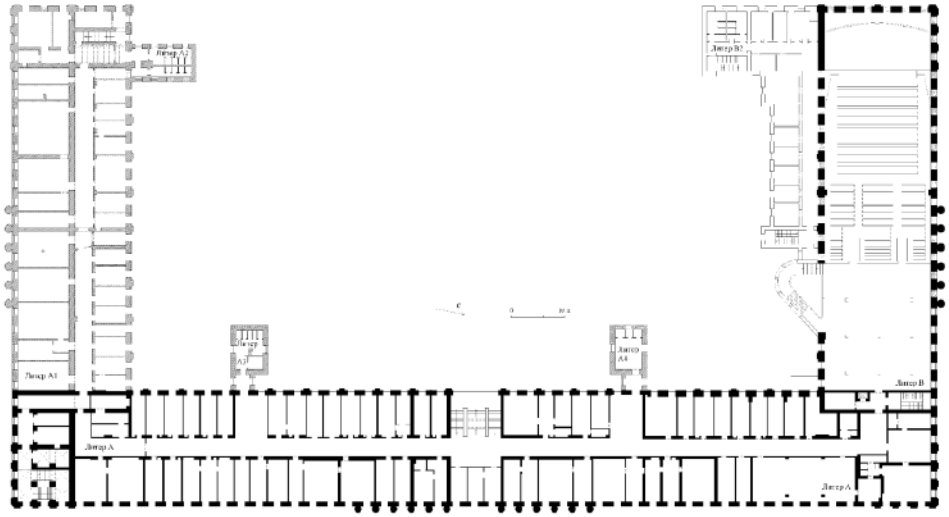
GENERAL BUSINESS CENTERS OF THE RENAISSANCE AND REFORMATION

AACHEN

With the strengthening of the state, with the development of trade and industrial relations in the XIV century, the center of business life shifted from behind the walls of the monastery to the market square of the Middle-eastern city. However, it should be noted that this square, as a rule, was located at the temple and for a long time the business center would play a subordinate urban planning and composition role in the city, hiding behind the greatness of the cult. The roots of this phenomenon should be found precisely in the socio-cultural dynamics of business relations in medieval Europe: commercial buildings should not have overshadowed cathedrals.

BUSINESS CENTERS OF THE XVIII CENTURY

Turning to Russian business relations, it should be noted that until the XIX-XX centuries, they were seriously dependent on the geographical environment. The border position of Russia between the West and the East had a important influence on them. The extended fair center has developed since old times along the banks of the Volga River. It is from fairs that the modern business object has adopted multifunctionality as a defining typological feature, the coincidence of compositional and main functional axes, a clear geometric structure with a clear center, dialogic, international character of architecture. The business center of the Russian city at the end of the XVIII century is formed by the buildings of the provincial and district boards, offices, state chambers. State centralization dictated a certain model of society's life. Russian cultural relations during this period are almost completely reduced to state-owned business. Business buildings are built according to a single canon. Located in the city center on the main square, the buildings of the XVIII century administration were perceived in the interior of the urban environment hidden behind a "single facade". Their clear and simple function is the general scheme, two-corridor and enfilade-ring groupings of rooms, sharp attention to the issues of ecology and ergonomics, characteristic of the approach to their space-planning solution.



THE BUILDING OF PUBLIC OFFICES IN THE NIZHNY NOVGOROD KREMLIN,ARCHITECT YA. A. ANANYIN, 1782-1785.

BUSINESS CENTERS OF THE XIX CENTURY

LONDON PARLIAMENT BUILDING

BUDAPEST PARLIAMENT BUILDING

LONDON CITY

Business relations of the XIX century defines, first of all, the concept of *laissez-faire* (literally translated from French — "to quit doing").The essence of the *laissez-faire* revolution in social systems is the advent of free enterprise era. During this period, new types of buildings appear and develop: stock exchange, bank, trading house, offices. Since the second quarter of the XIX century, the exchange has become a popular type of public building. It is characterized by a clear combined planning structure with a central hall space surrounded by galleries. Functional zoning provided for the placement of retail shops on the first floor, and a stock exchange hall and brokers ' offices on the second floor. By the end of the XIX century, the building of the stock exchange developed in Russia as a multifunctional representative public building, in which, along with the stock exchange, other types of activities were carried out: trade, management, administrative activities.

The bank as an independent type of public building was formed by the end of the XIX century. And although the function of the bank is quite complex, in its most general form it means customer service and the storage of valuables. It is this position that is reflected in the approach to the design of bank buildings: the representativeness and recognition of the object; the clear portal of the main entrance; the identification of the operating room on the facade; while the other parts of the composition are subordinate to the position dictated by the specifics of commercial

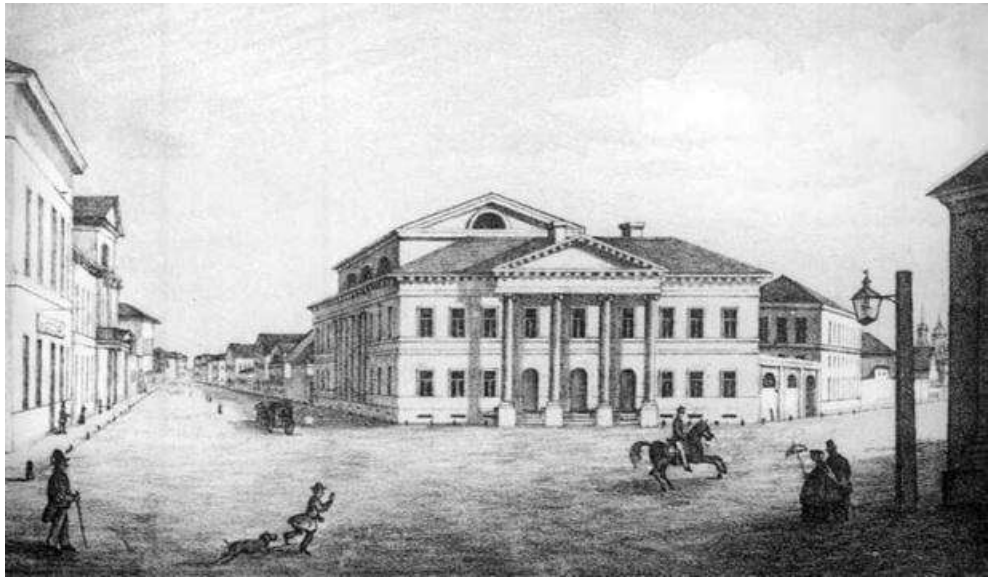

1001

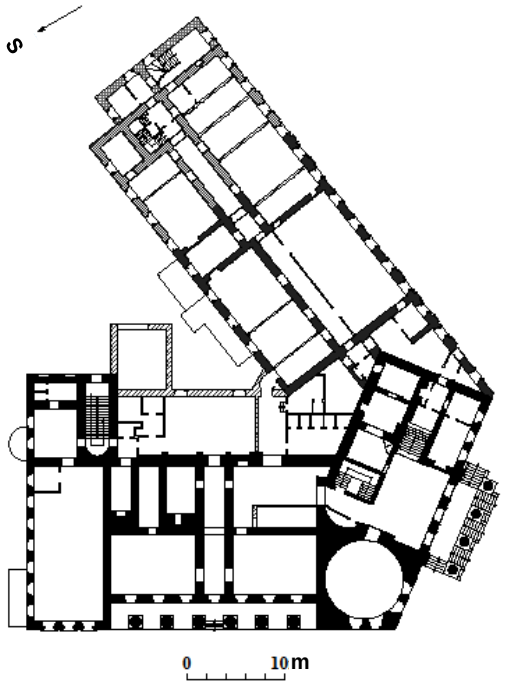
PARIS

LONDON

1003

GRENOBLE, FRANCE





THE BUILDING OF THE NOBLE ASSEMBLY IN NIZHNY NOVGOROD, ARCHITECT M. P. KORINTHSKY, 1826

1005

BUDAPEST


ÖSTERR. POSTSPARKASSE:
HAGNER:WERK
PARISER ESPRIT UND WIENER MODERNE. Die Firma Portois & Fix

1006

VIENNA

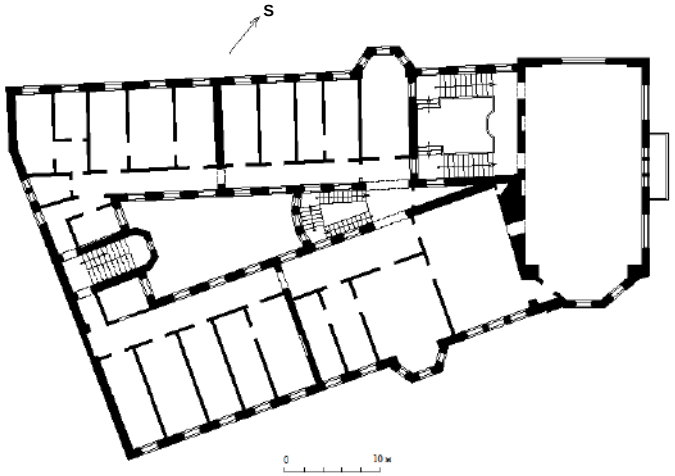
1007

AACHEN,GERMANY


1008
AMSTERDAM

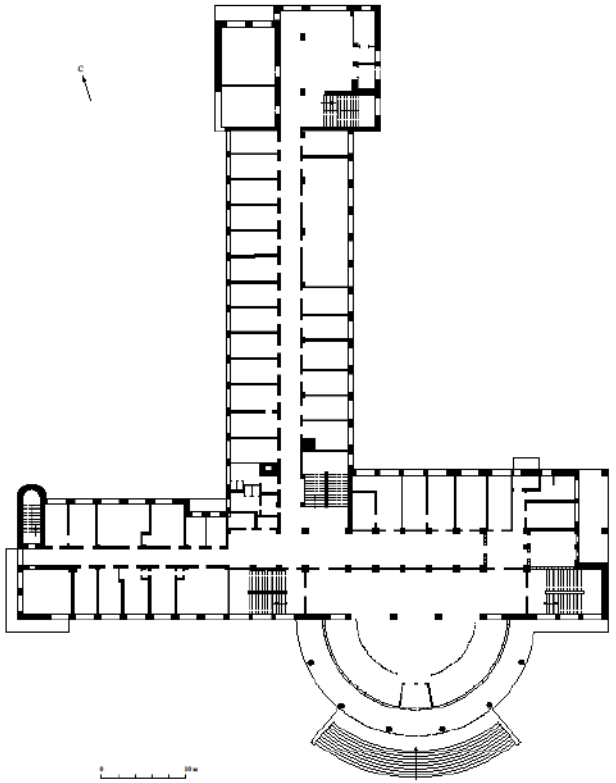
1009

STOCKHOLM



THE BUILDING OF THE CITY DUMA IN NIZHNY NOVGOROD, ARCHITECT V. P. ZEIDLER, 1899-1904.

BUSINESS CENTERS OF THE XX CENTURY



THE HOUSE OF SOVIETS IN NIZHNY NOVGOROD, ARCHITECT A. Z. GRINBERG, 1929-1931.

At the turn of the XIX—XX centuries, a relatively new type of activity begins to form-business, which gradually becomes a truly mass profession. As a systematically organized process, business is constantly evolving, its terms and conditions are changing. In accordance with this, the building intended for the implementation of business relations, should also change. Therefore, it should initially have a set of potential components for transformation into new directions of the business process. During this period, office buildings appear and begin to actively form. Their emergence is associated with the development of capitalism and office work as an independent function that is important and occupies a certain place in social production. Built at the end of the XIX century, the buildings of offices, joint-stock companies, industrial enterprises, trade institutions are characterized by the most rational layout and appearance. This period is marked by the beginning of the formation of large corporations. This determined the prevailing type of business center building: a high-rise building, a skyscraper, a tower that reflects the character of thinking in its symbolic image.

Having appeared in the United States, high-rise buildings have become symbols of self-achieved, rather than "inherited" commercial success. Since the 1890s, a rapidly advancing America has found a new romance of machines and technology. Skyscrapers became a product of this era, accommodating the function of an office. In the 1930s, the character of the building plan changed: from a compact tower, a transition was planned to an elongated vertical plate in the plan, which provided better natural light. In addition, in the 1930s, advances in building materials and technology, artificial lighting, and mechanical ventilation made it possible to make buildings wider and higher. During the interwar period, the construction of commercial buildings, hotels, and apartment buildings was still actively developing. The absolute height of business buildings was rapidly increasing. High-rise buildings have also appeared in Europe. Together with the compositional features of building the volume of the office building in Europe from the United States came a certain planning approach: the principle of a free plan, the office landscape-more of a hall space, divided by low partitions.

In the mid-twentieth century, in the West, buildings are no longer considered as complete structures with a rigid program and connections, but as mobile structures that can be easily adapted to a variety of conditions and functions. The idea of a multifunctional building moved away from the limiting concept of a mega structure, as the fabric of the city was once again taken as a basis and considered as a link in the urban context. In the cities of Europe, separate areas of business activity are formed — administrative and business zones, cities. There is transition to the concept of a multifunctional use of buildings and structures. But not only commercial construction projects were the foundation for the formation of a business center. In the 1920s and 1930s, Soviet houses were designed and built in the USSR, which are functionally similar to the buildings of business centers, since they include the business function as a management function. The task programs for the design of the houses of Soviets contained a diverse set of functional elements: administrative management, mass political and educational work, entertainment and recreation of the population.

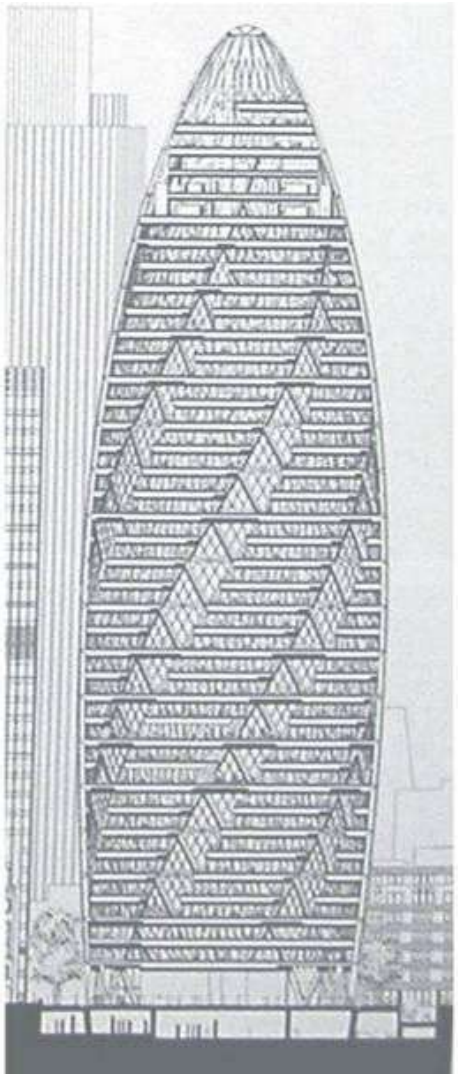

1016
VIENNA

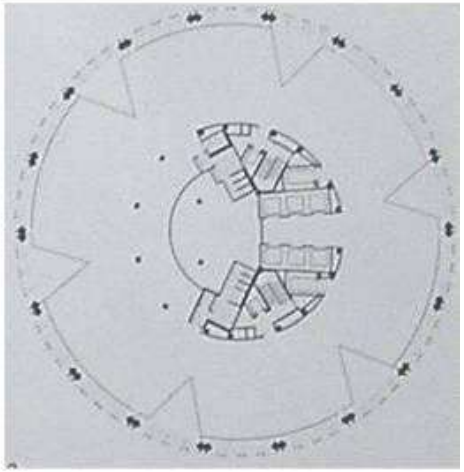

1017

For post-war Europe, the new type of high-rise office building became a symbol of economic renewal and liberation from the shackles of the past. High-rise buildings to a large extent determined the appearance of cities, which is explained by a number of factors: social (expensive land), urban planning (lack of favorable territories),constructive (new opportunities for the frame) and psychological (business success is reflected in high-rise architecture). It should be necessarily noted that at present, the problem of the viability of high-rise buildings is solved mainly due to their multifunctionality and openness: in addition to business, high-rise office buildings accommodate premises for other functional purposes — observatories, viewing platforms, rooms for tourists. Thus, the office building was able to survive, turning from a special to a universal one. Having evolved over 100 years, the office building has evolved from a monofunctional, special, narrowly utilitarian building into a multifunctional, multi-purpose building that has absorbed. It includes the features of all the most viable types of business centers that dominated in different historical eras. The monofuntional office was replaced by a business center that combines the efficiency of a multi-storey business building with the advantages of a consumer-focused shopping complex.

Thus, during the XXth century, the business function developed both as a function of management, as a function of entrepreneurship, and as a function of constant coordination of the business process. Therefore, business centers by the end of the twentieth century appear in the form of number of options: Ministry, Embassy, Consulate; city (city in the city) and the building of a conglomerate (vertical city); Bureau, Atelier, Studio; the Congress hotel, conference hotel; the trade mission; business school; business club; the machine (display) hall; terminal, a multi-purpose junction at the intersection of transport routes. This list can be continued, but it is more appropriate to state that at present the business center has developed as a new universal type of public building, in which current and potential business functions in all their attributes are revealed at once, depending on socio-economic factors.

BUSINESS CENTERS OF THE XXIst CENTURY





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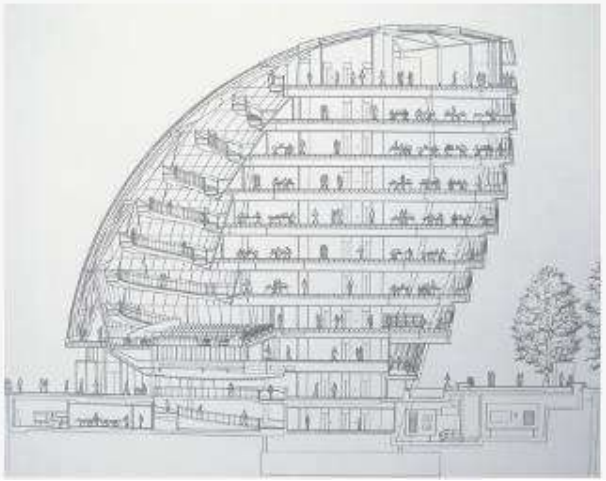
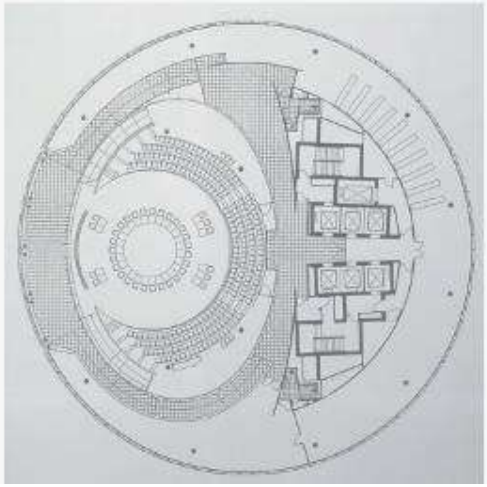
LONDON





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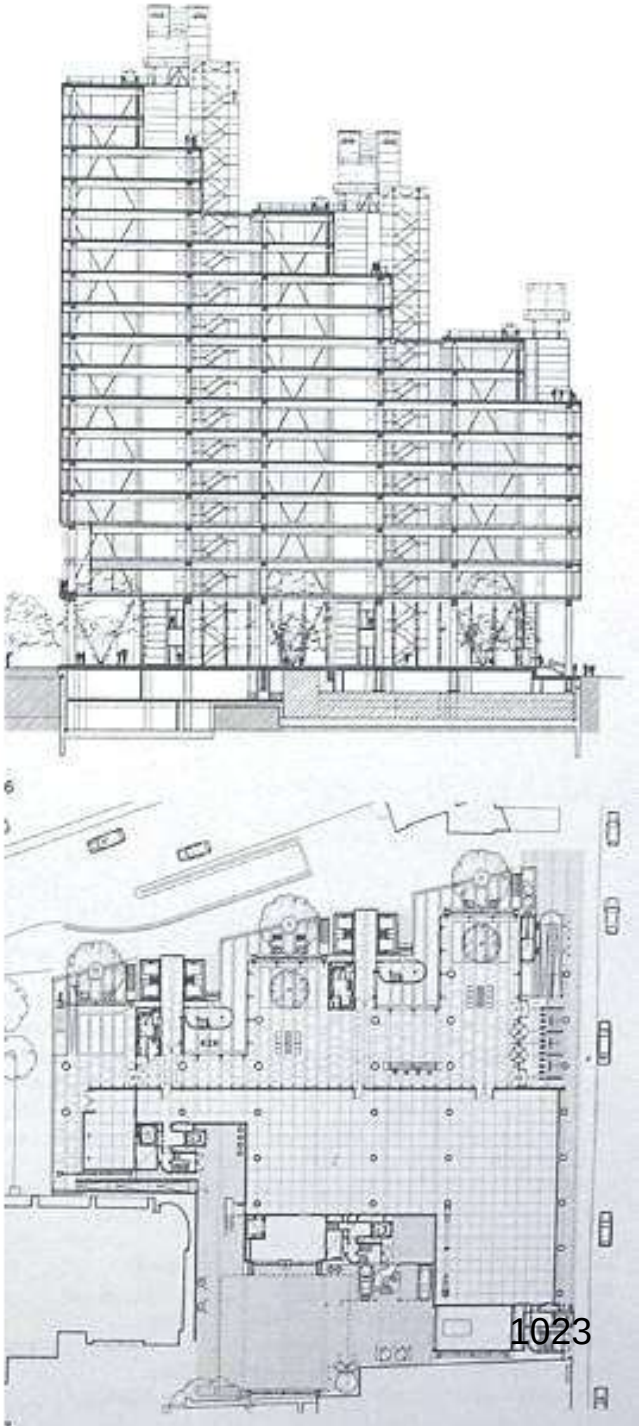
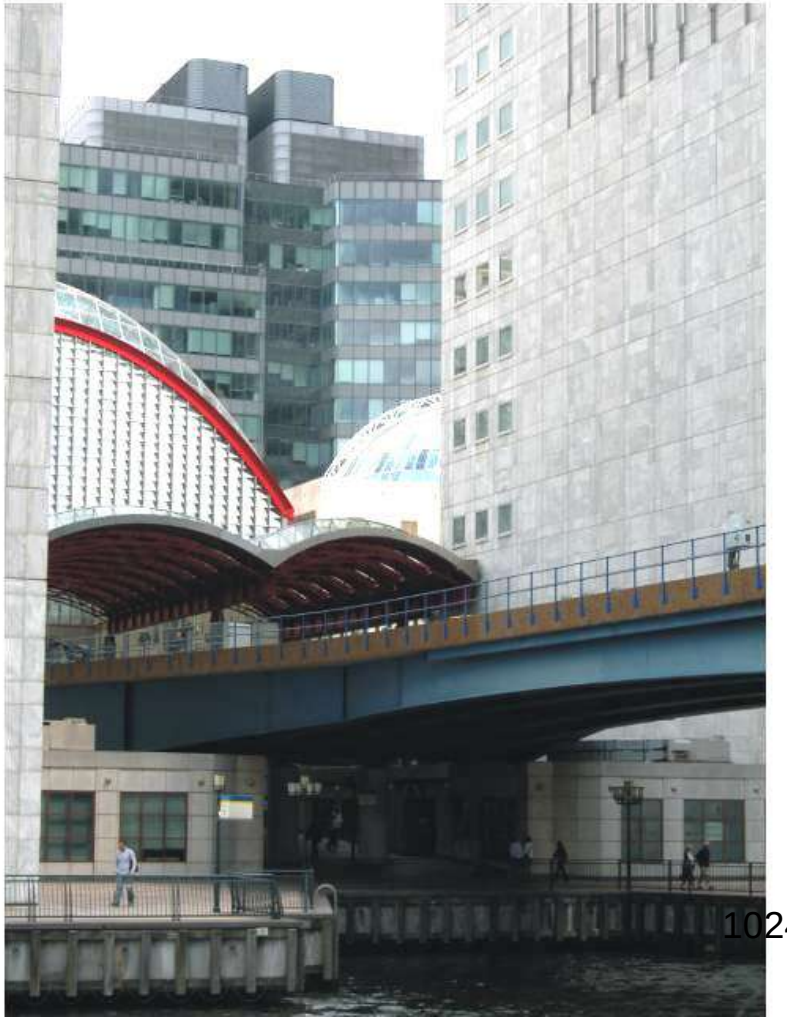
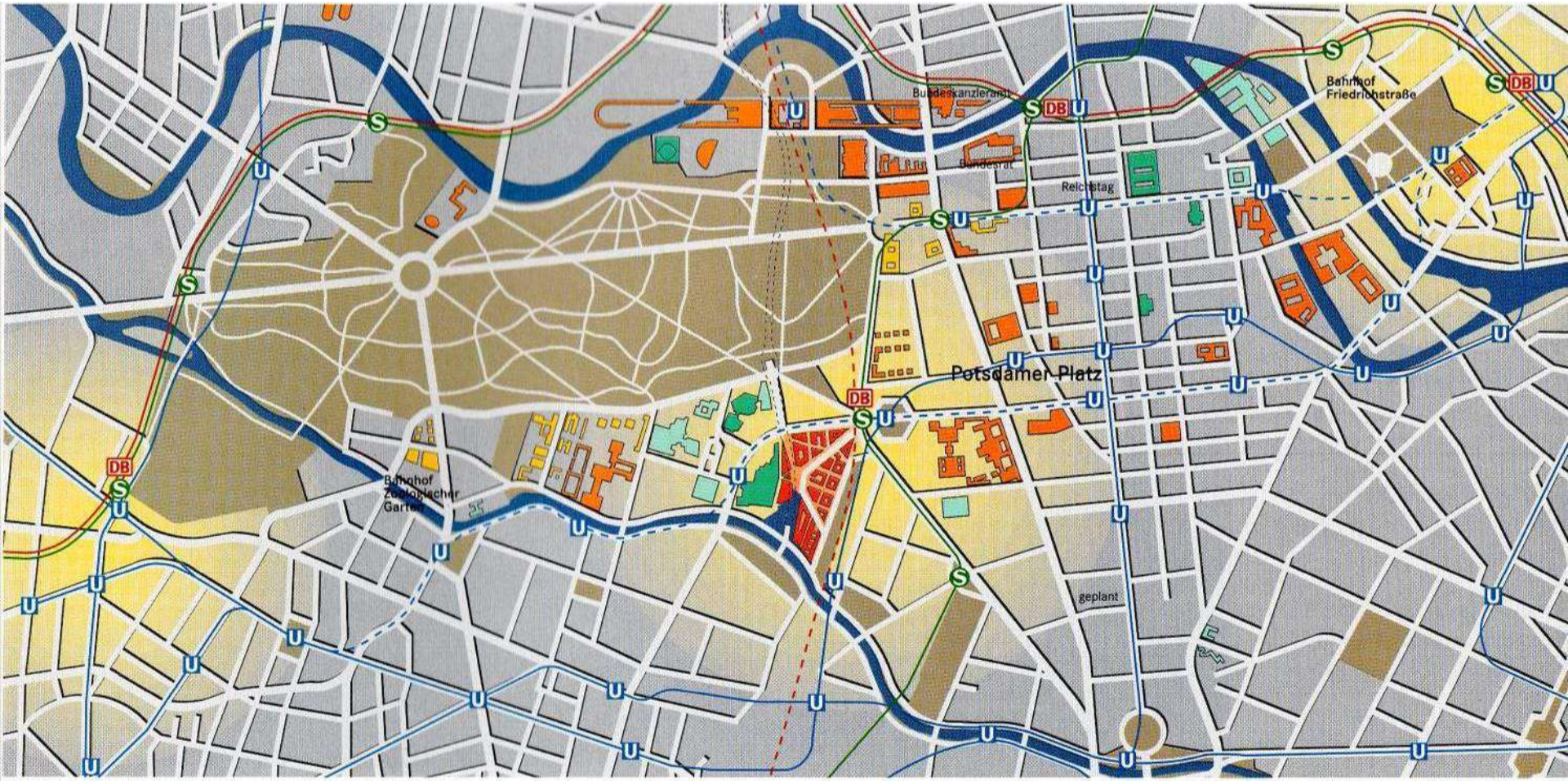
LONDON


GRAND
UNION
BUILDING

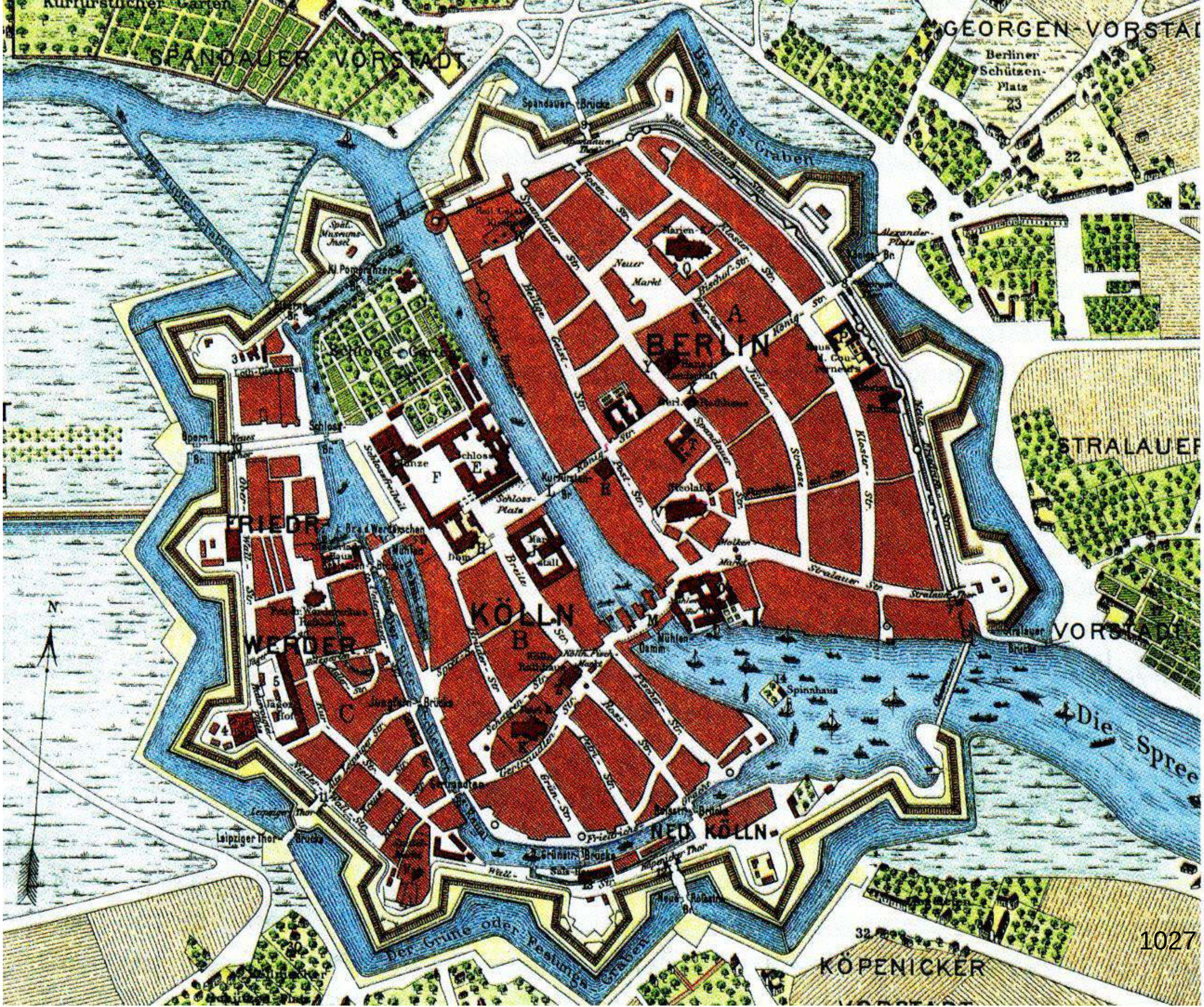




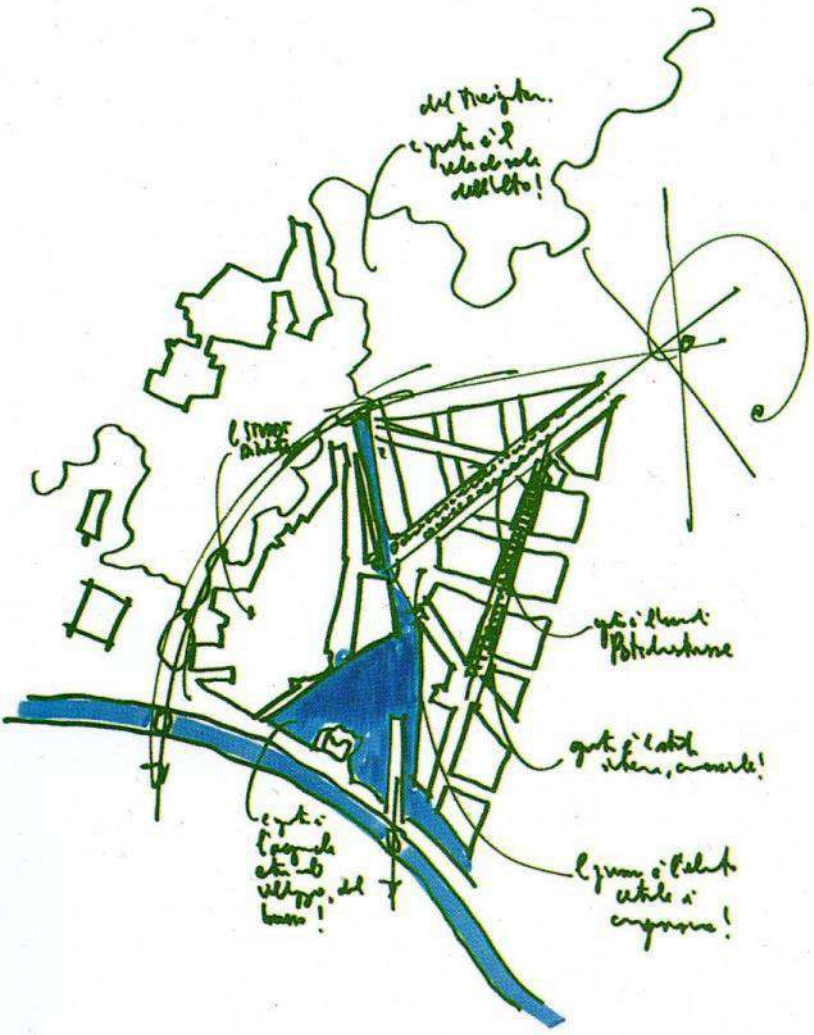

Bundeskanzleramt
Bundesrat
Reichstag
Bahnhof Friedrichstraße
Potsdamer Platz
Bahnhof Zoologischer Garten
geplant

1026

BERLIN



GEORGEN-VORSTAD
SPANDAUER VORSTADT
Berliner Schützen-Platz
Der Königs-Graben
Spandauer Brücke
Neuer Markt
BERLIN
STRALAUER
FRIEDR
Schloss-Platz
KÖLLN
WERDER
Spinnhaus
VORSTADT
Die Spree
NEU KÖLLN
Leipziger Thor
Der Grüne oder Festungs Graben
KÖPENICKER



Renzo Piano, Projektskizze, März 1993

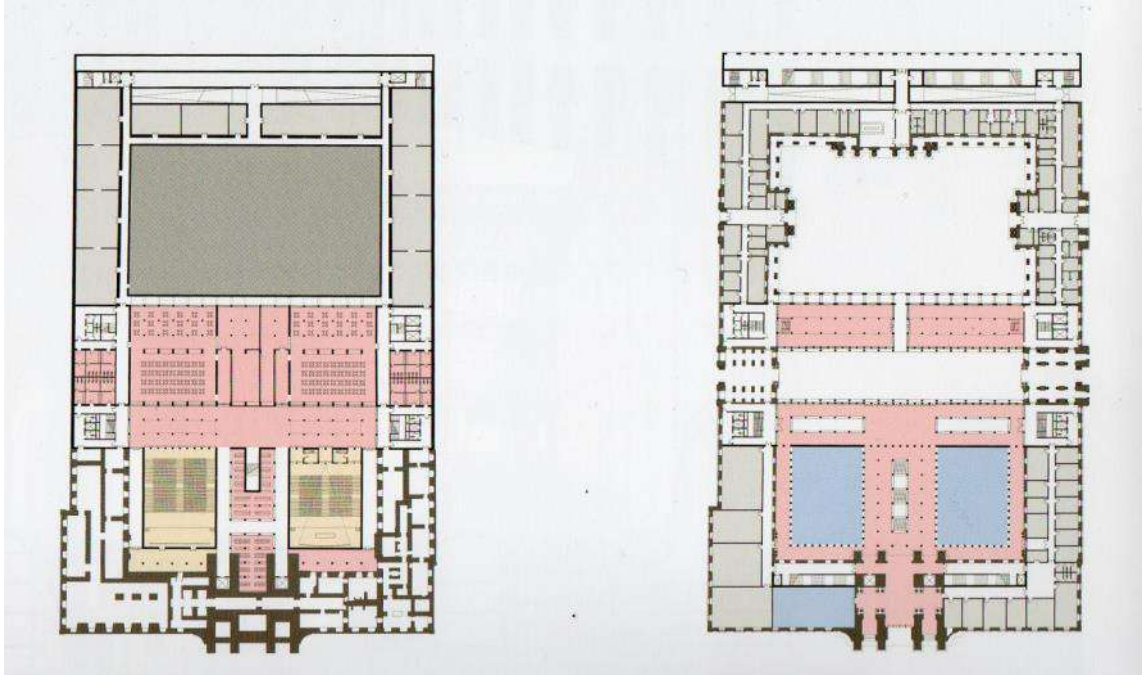
Berlin. Public and business center on Potsdamer Platz

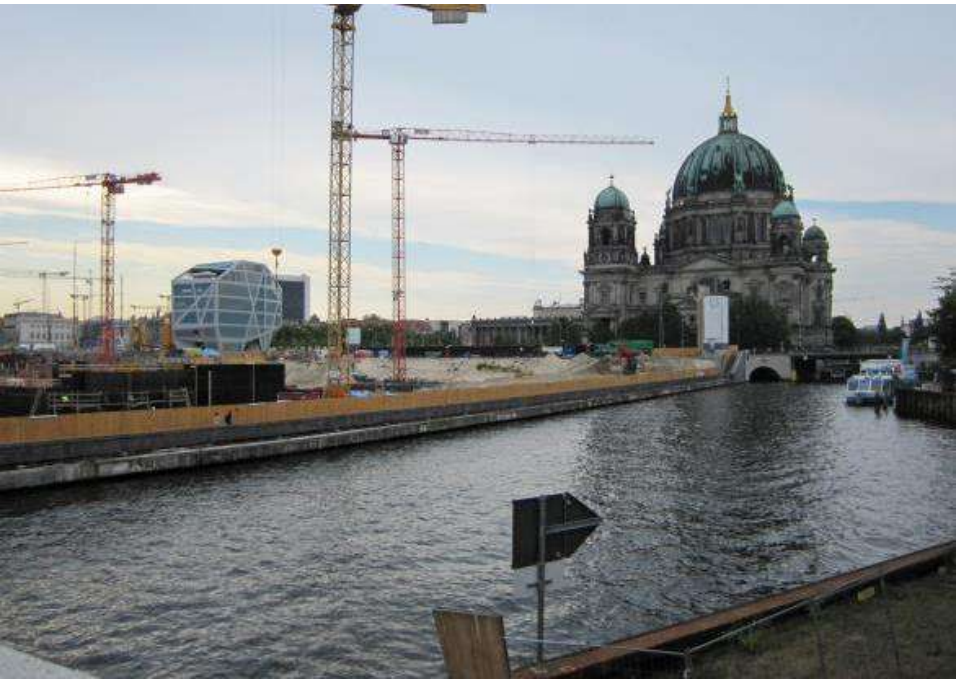
1033

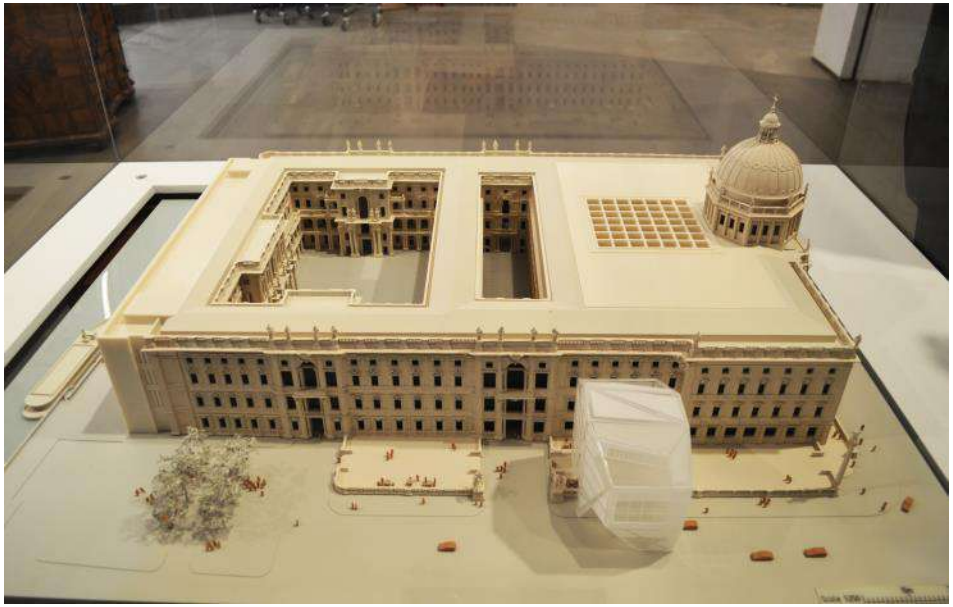
MARIE-ELISABETH-LUDERS-HOUSE IN BERLIN, ARCH. SH. BRAUNFELS, 1998-2003.


DB
Berlin Hauptbahnhof

HUMBOLDT FORUM IN BERLIN



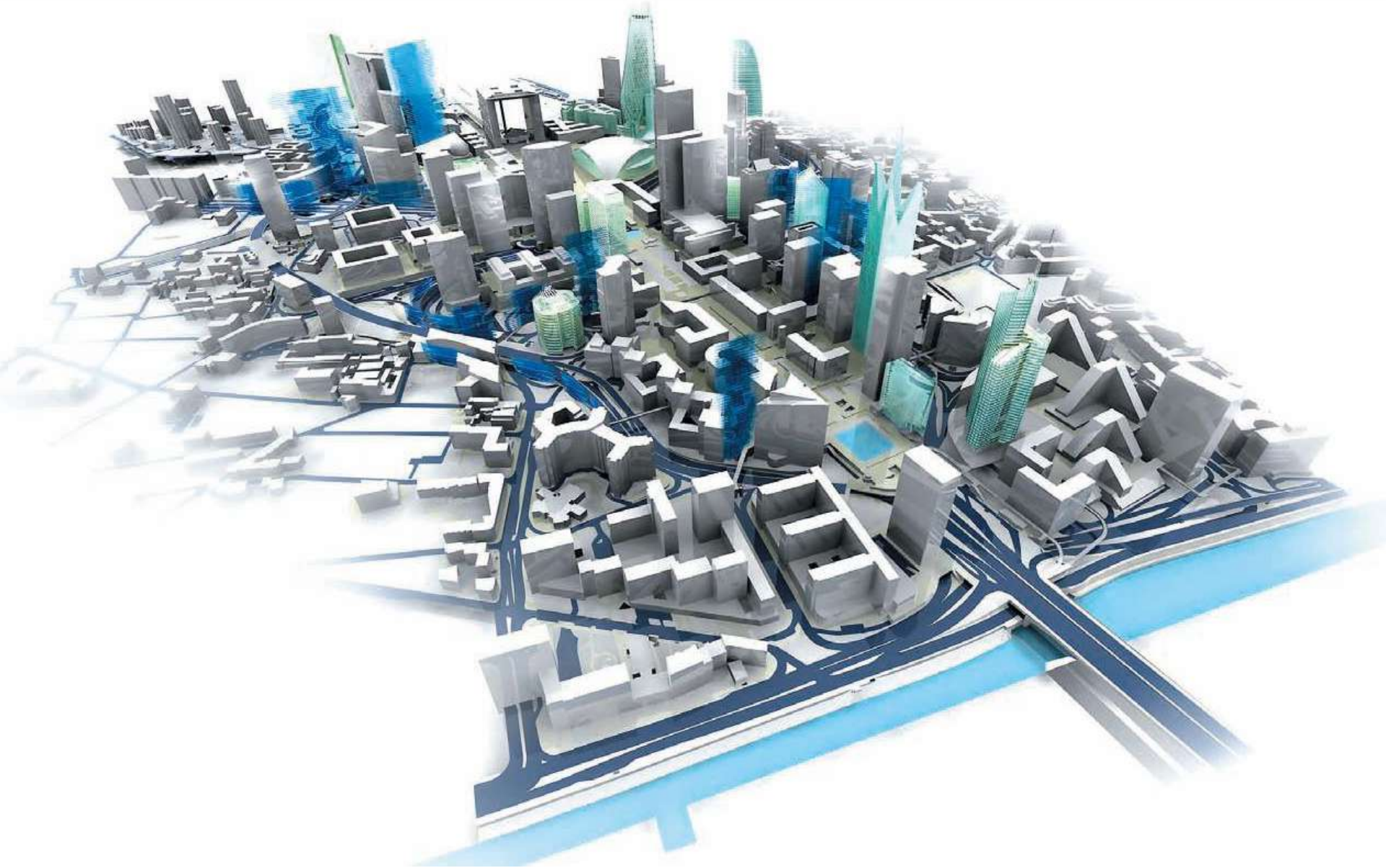





Berliner Schloss - Humboldtforum

1040

Paris. Public and business of Defense district

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AXA
NOVOTEL
176


Elysées La Défense


La Défense


Espace La Défense
LES QUATRE


www.sfr.com

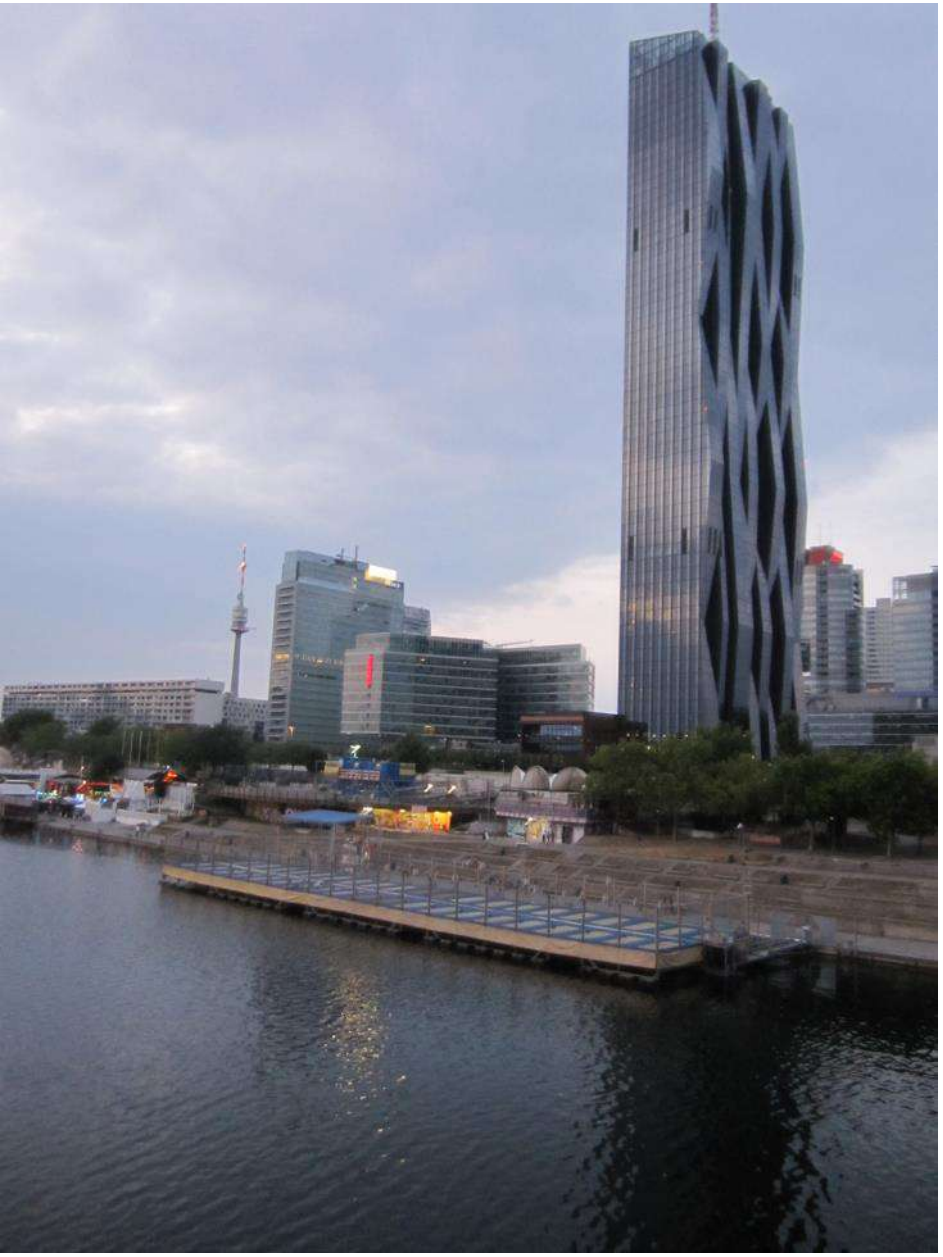

AXA


VIENNA
1047


AUSTRIA CENTER
www.acv.at

DC TOWER 1, 2. ARCH. DOMINIQUE PERRAULT, 2013, 2015
OFFICE, HOTEL


1052



1055

STOCKHOLM

1056

COPENHAGEN

1057

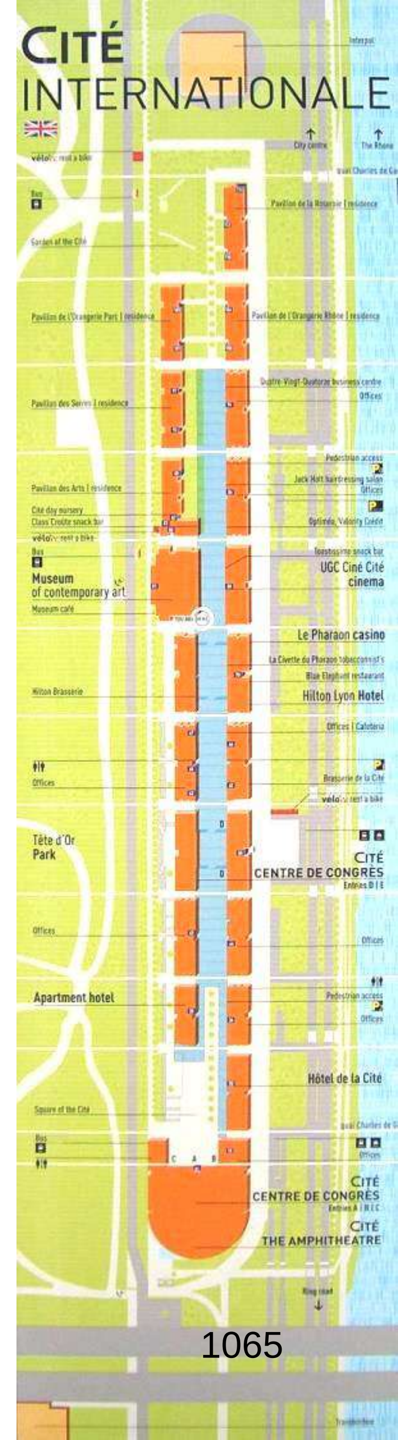
OSLO


DS LOUISE RESTAURANT & BAR
DS LOUISE

1062

1064

LYON


CITÉ
INTERNATIONALE
Museum
of contemporary art
UGC Ciné Cité
cinema
Le Pharaon casino
Hilton Lyon Hotel
Tête d'Or
Park
CITÉ
CENTRE DE CONGRÈS
Apartment hotel
Hôtel de la Cité
CITÉ
CENTRE DE CONGRÈS
CITÉ
THE AMPHITHEATRE


Palais des


Ceci est une
œuvre d'art
Escalade
interdite
P1

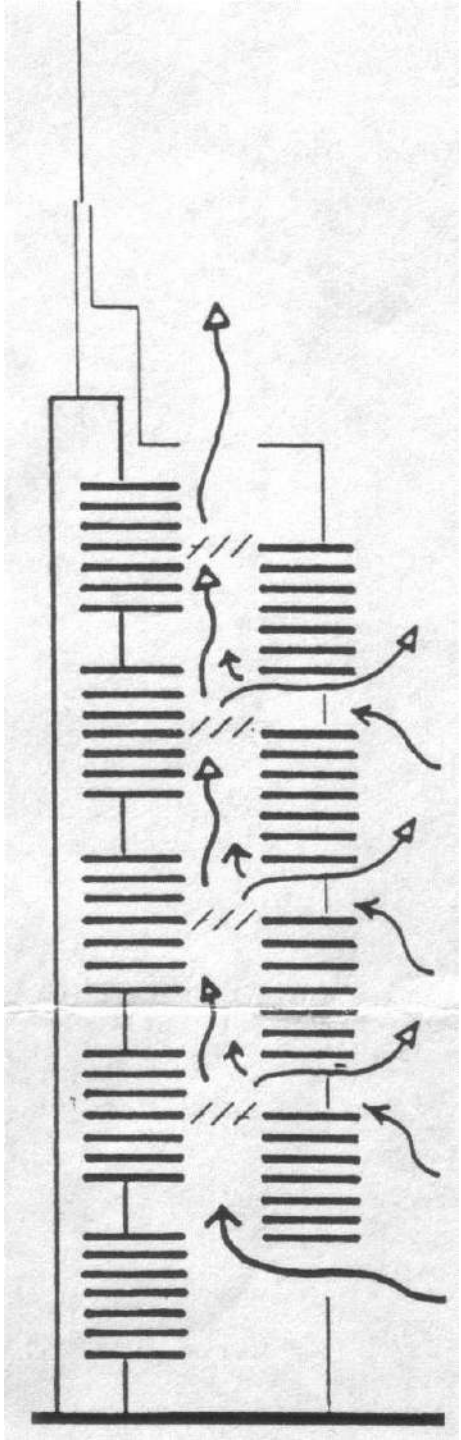
1069

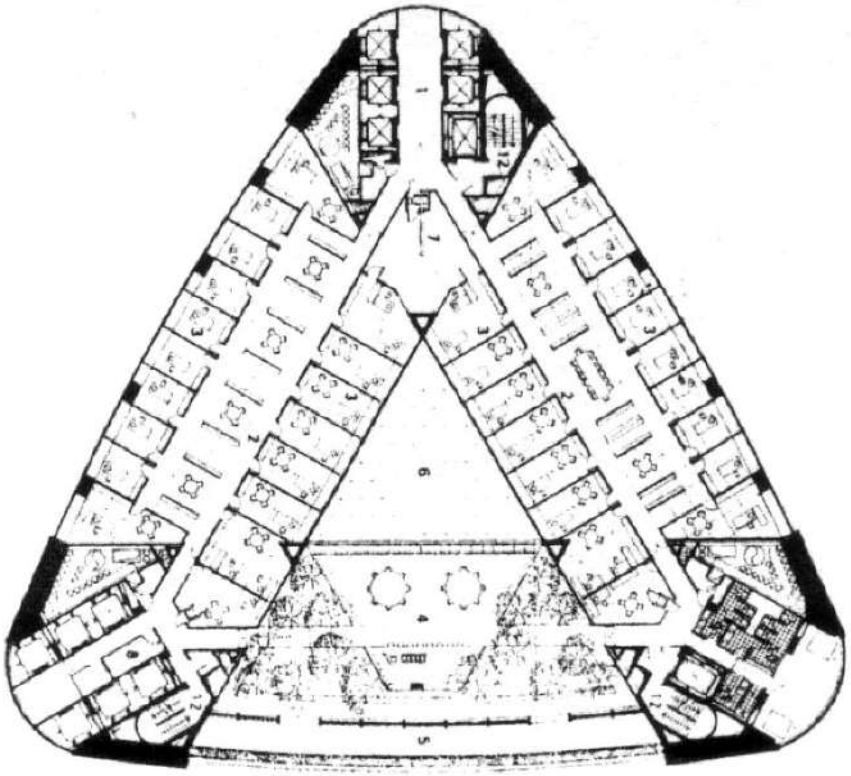
FRANKFURT AM MAIN

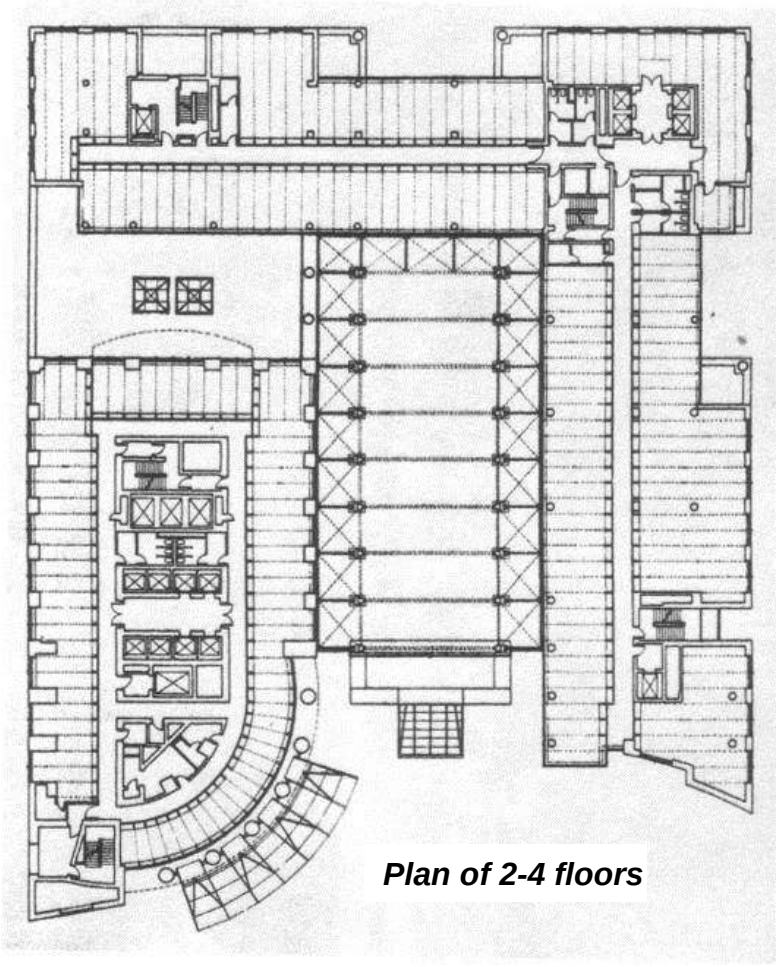
1071

FRANKFURT AM MAIN

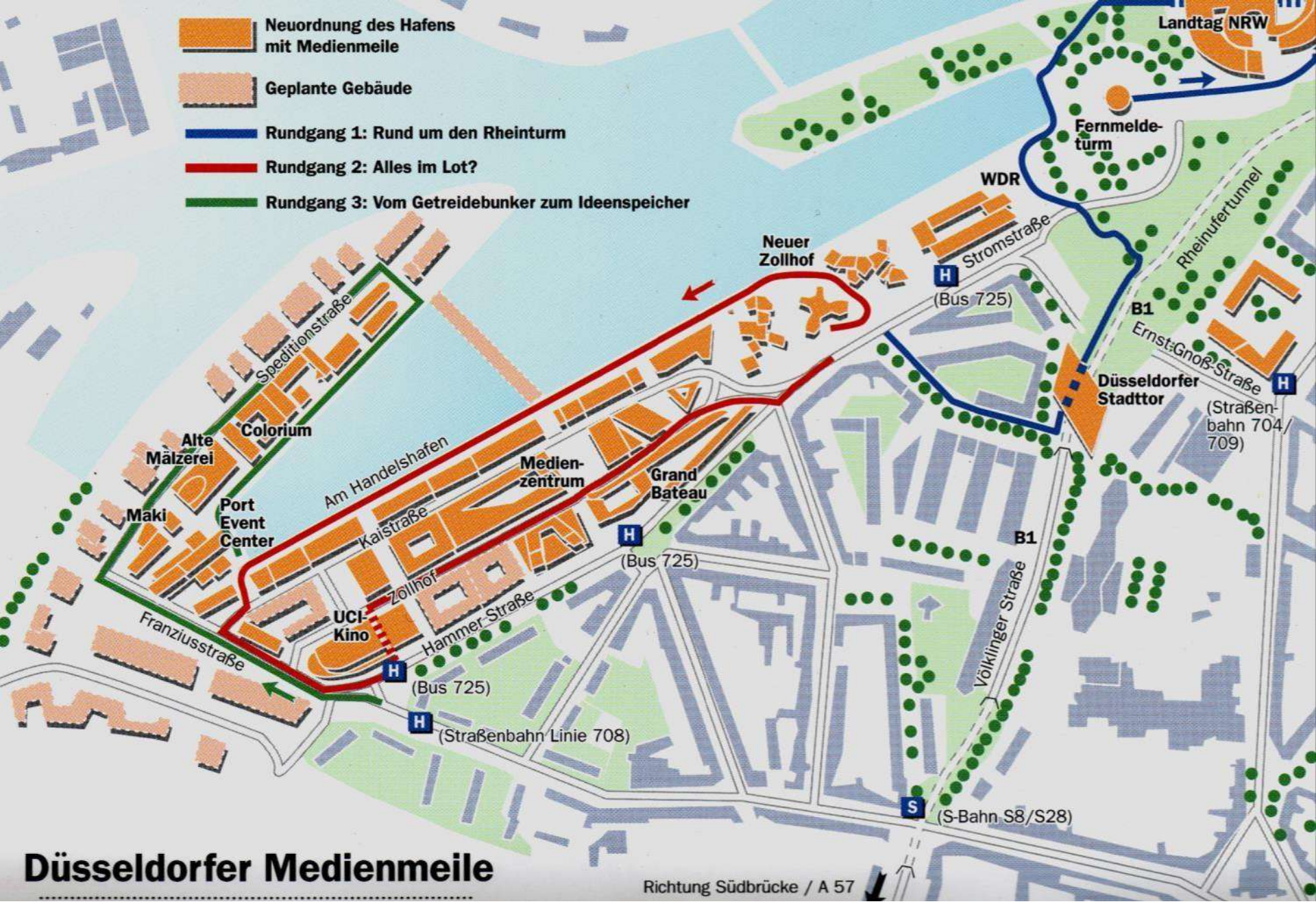

Frankfurter
Wir kümmern uns drum







Plan of 2-4 floors


Neuordnung des Hafens mit Medienmeile
Geplante Gebäude
Rundgang 1: Rund um den Rheinturm
Rundgang 2: Alles im Lot?
Rundgang 3: Vom Getreidebunker zum Ideenspeicher
Landtag NRW
Fernmelde-turm
WDR
Neuer Zollhof
Stromstraße
(Bus 725)
Rheinufertunnel
B1
Ernst-Gnoß-Straße
Düsseldorfer Stadttor
(Straßen-bahn 704/ 709)
Speditionstraße
Colorium
Alte Mälzerei
Am Handelshafen
Medien-zentrum
Grand Bateau
Maki
Port Event Center
Kaistraße
Zollhof
UCI-Kino
Hammer Straße
Franziusstraße
(Bus 725)
(Straßenbahn Linie 708)
Völklinger Straße
(S-Bahn S8/S28)
Düsseldorfer Medienmeile
Richtung Südbrücke / A 57

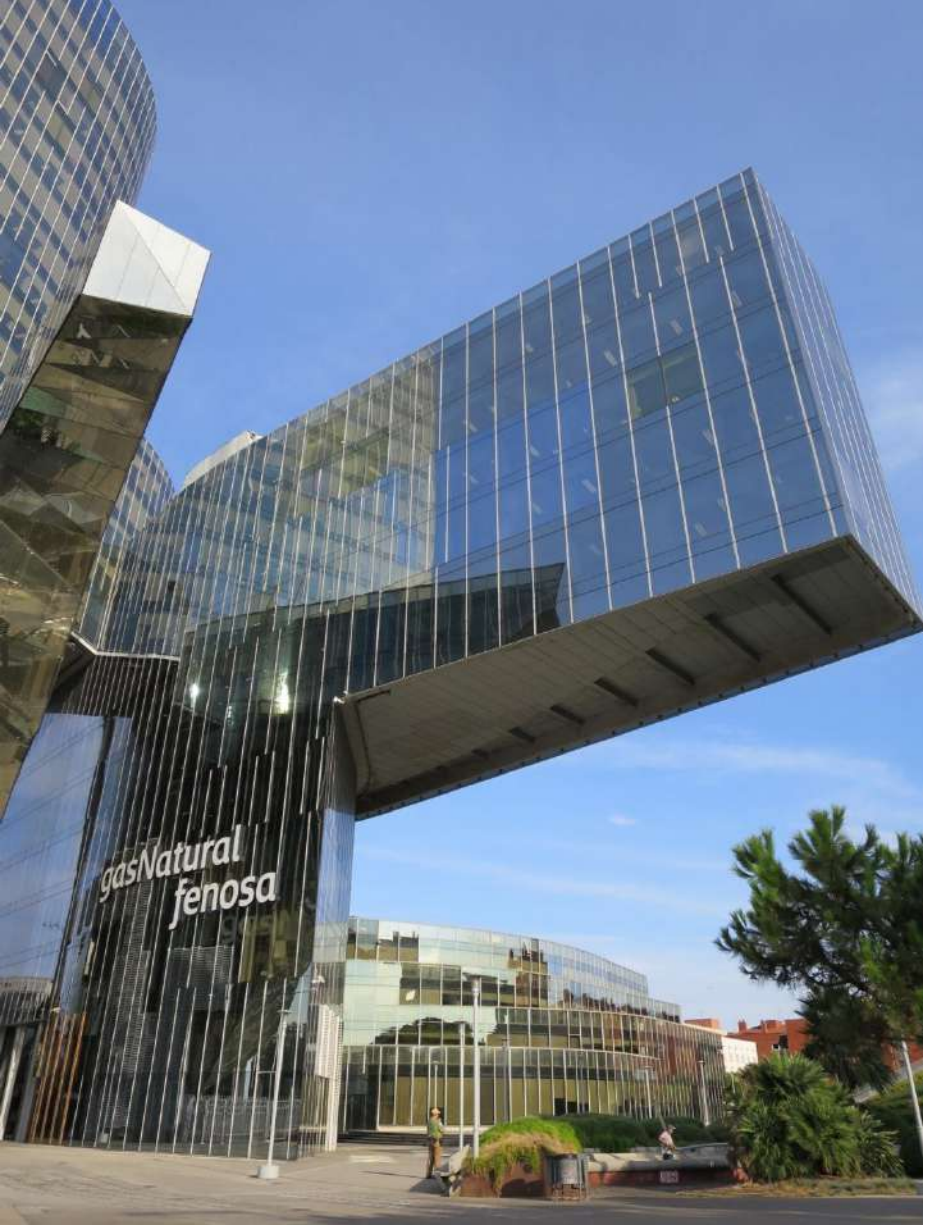
MUNICH, BMW CENTER


WELCOME
TO THE TEAM

1082

BARCELONA. AGBAR TOWER, ARCH. J. NOUVEL, 1999


Cafeteria



BARCELONA. GAS NATURAL HEADQUARTERS, ARCHITECT E. MIRALLES, 1999

BARCELONA. PORTO FIRA, ARCHITECT T. ITO, 2010

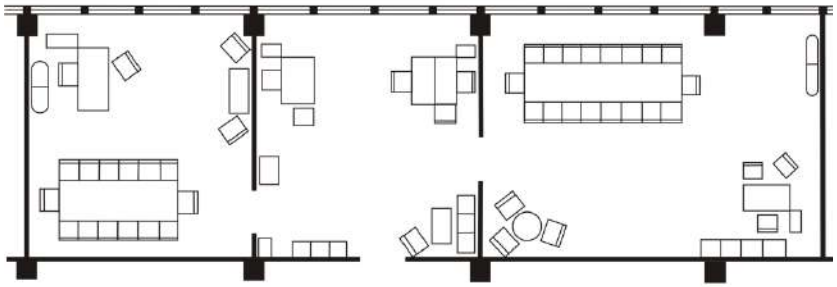

HOTEL PORTA FIRA
OLYMPUS

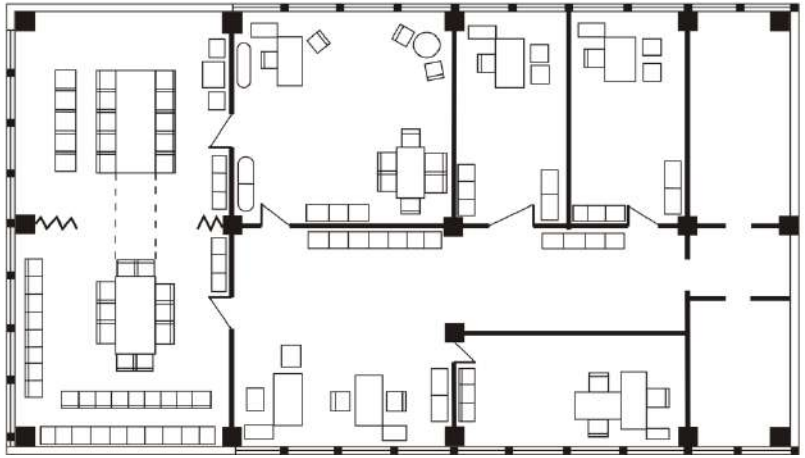

Prange schuhe
SAMSUNG

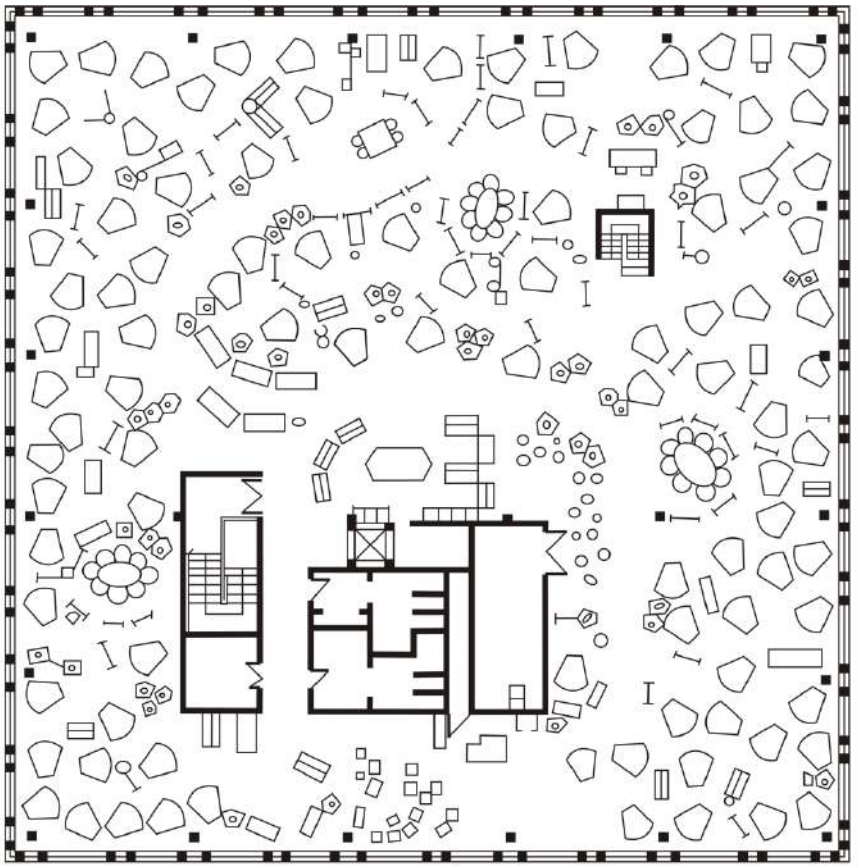
MODERN ADMINISTRATIVE AND OFFICE BUILDINGS

The diversity of spheres of life in our country determines a significant number of various government bodies that manage these areas at various levels: federal, district, republican, regional, local. These include ministries, state committees, administrative and economic institutions (associations, departments, management boards, offices, agencies, etc.), legal institutions, communication institutions, editorial offices and publishing houses, credit and financial institutions (banks, treasury, inspection), etc. Very often, different institutions are located in the same building. These can be cooperative buildings of the legislative and executive authorities, public organizations, design bureaus of various profiles, etc.

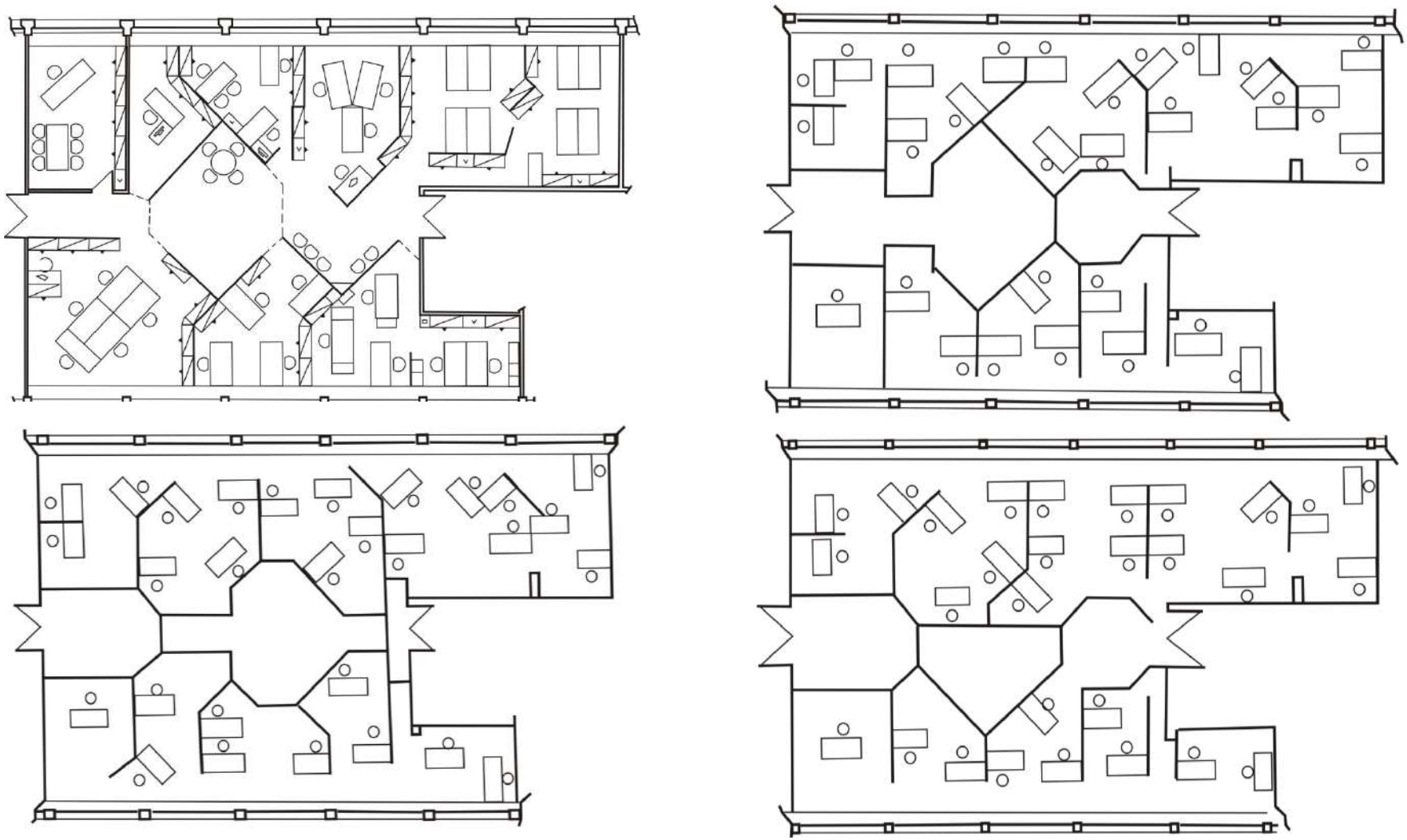
An office **(English office, from Latin officium-service, duty) is a special public building or room for certain processes that are provided by individual and collective work of employees that requires communication and exchange of information. Of all the types of structures today, it is the office building that is undergoing the greatest changes. Thanks to modern information technologies, the office is no longer rigidly tied to the place and time. A person works where there is a connection to a computer network. Despite this, the office does not lose its importance.**



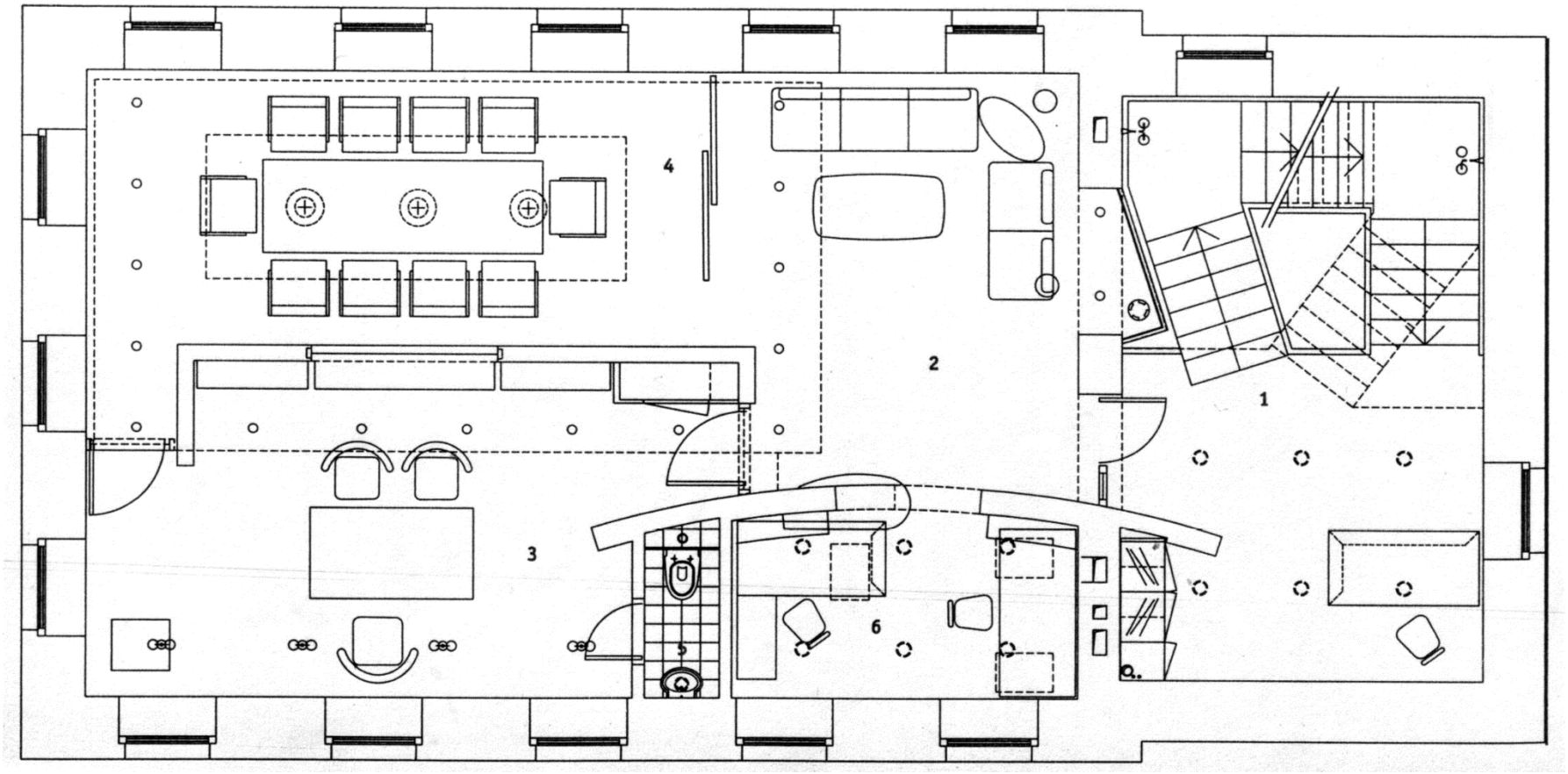




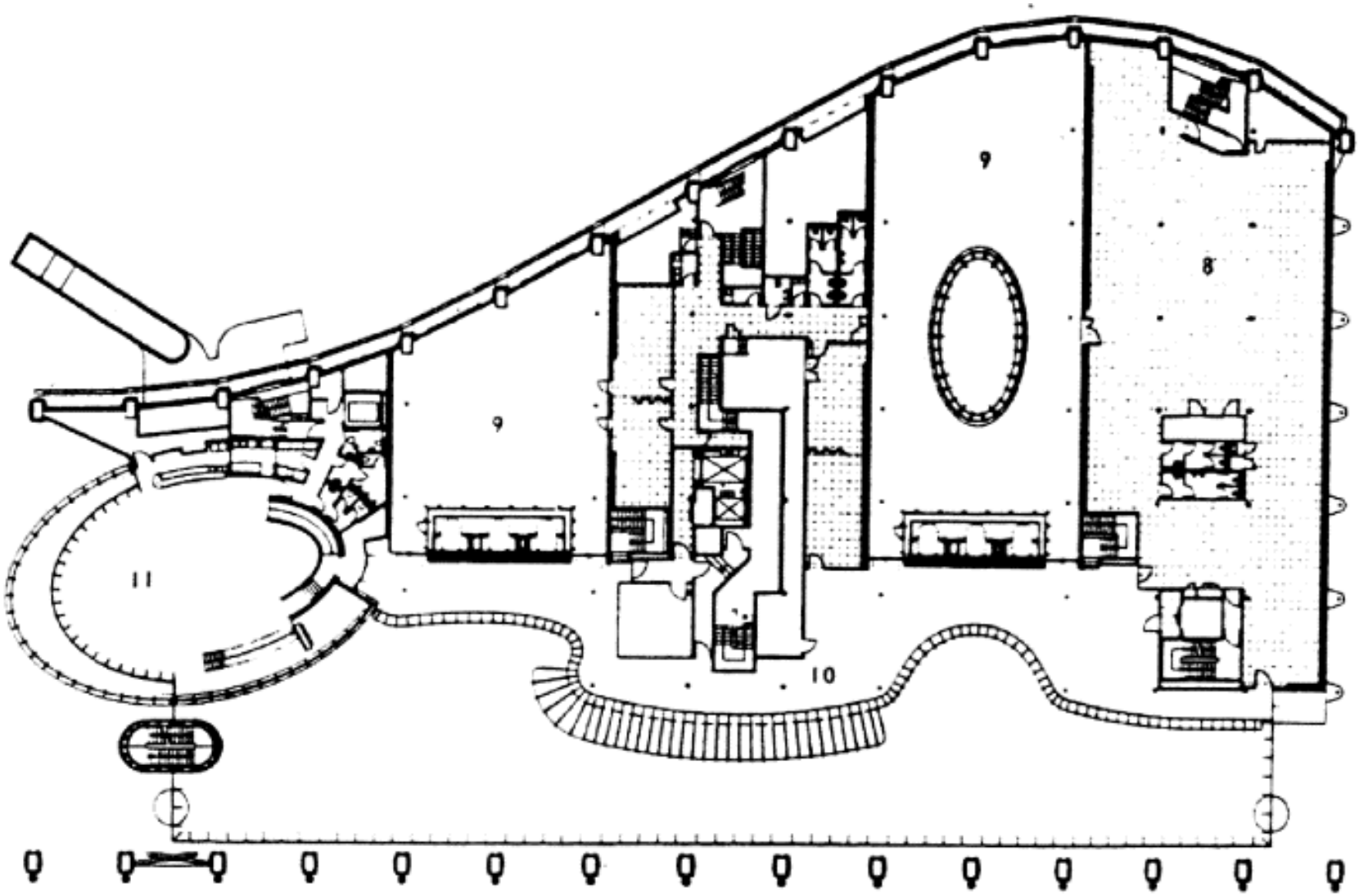
Office layout options



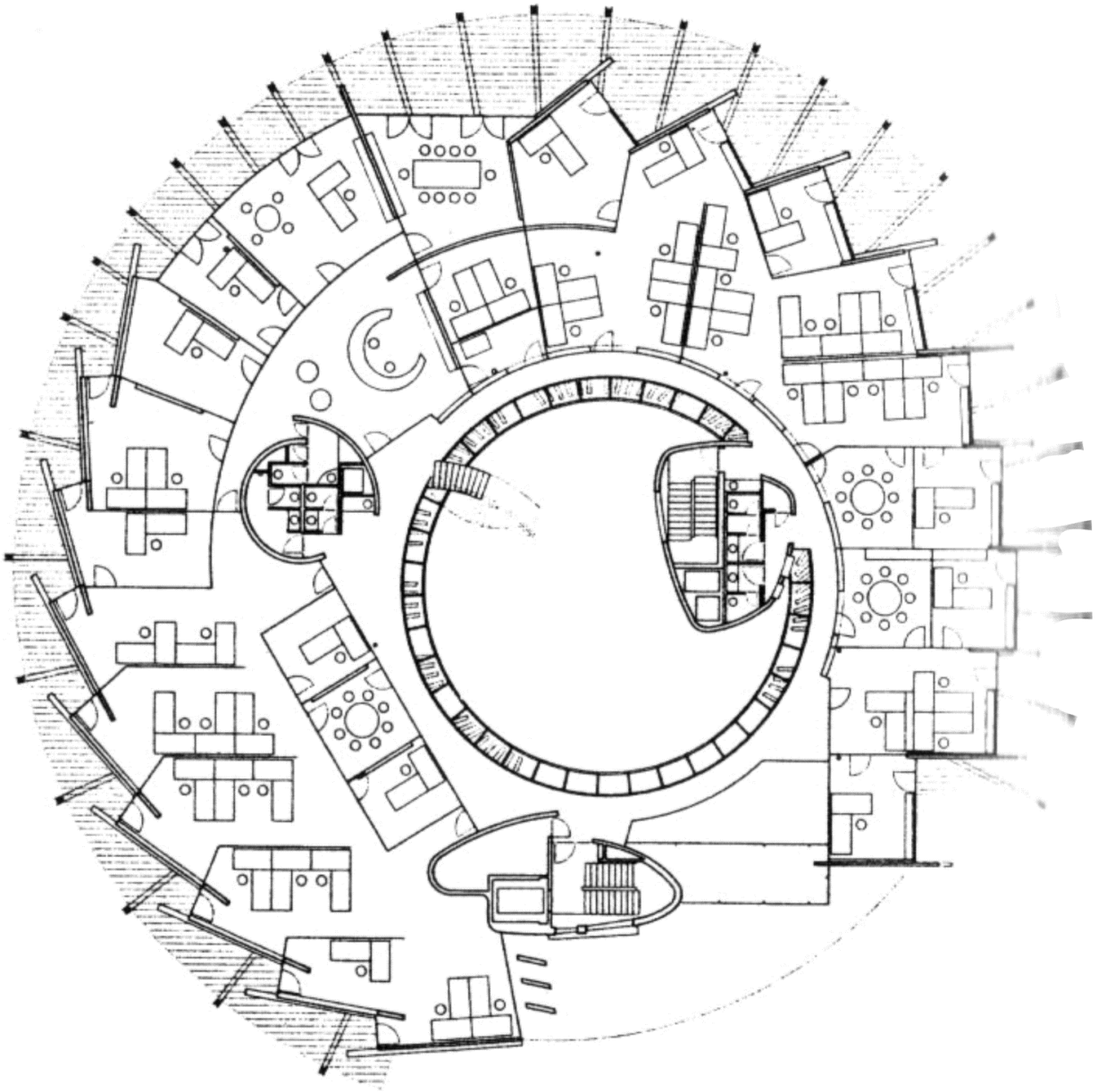
Options for organizing the work of 30 people in an office space



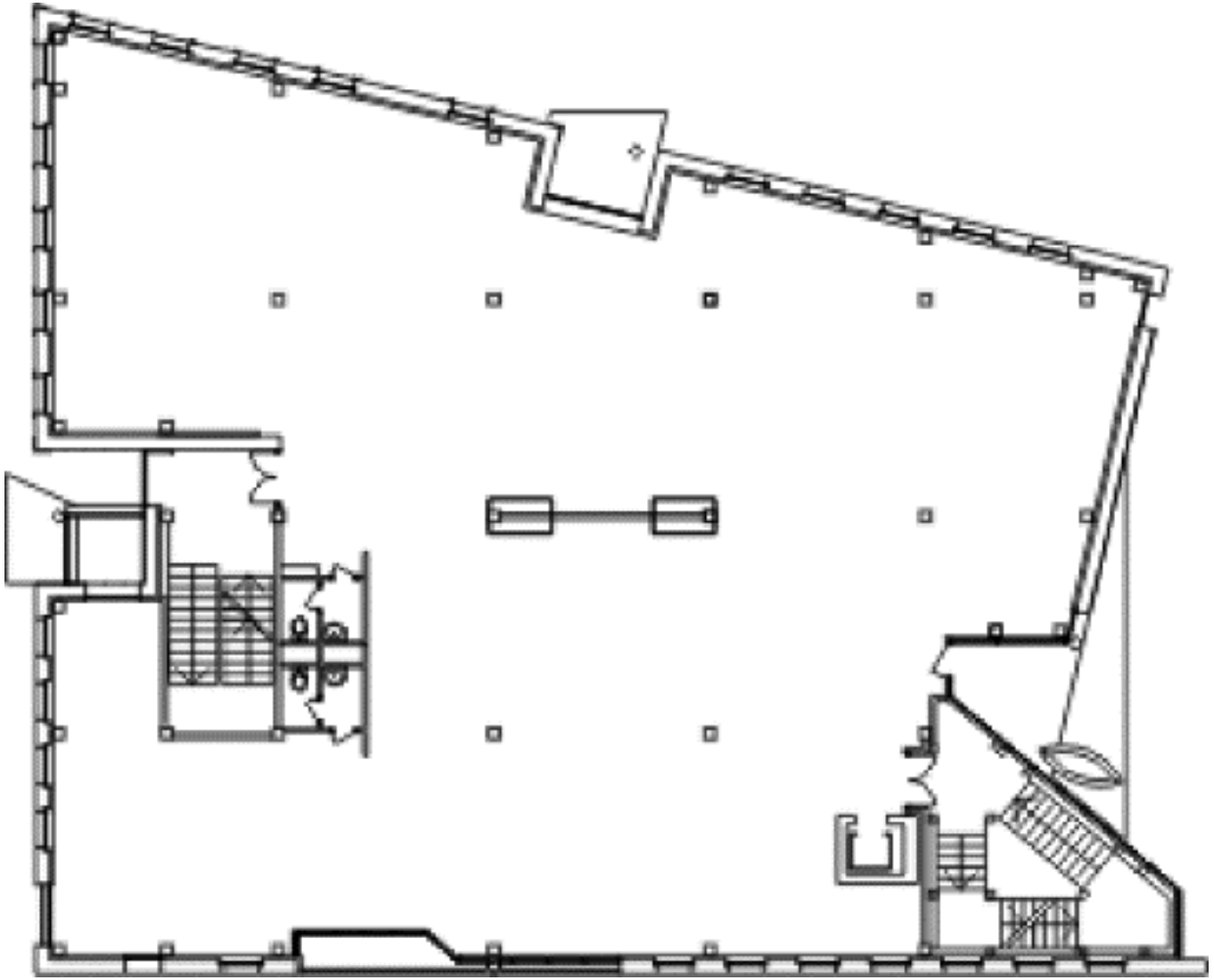
Office building on Novinsky Boulevard in Moscow, arch. A. Nadtochiy,V. Butko, 1998



Ludwig-Erhard-House Stock Exchange building in Berlin, architect N. Grimshaw,1994-1998

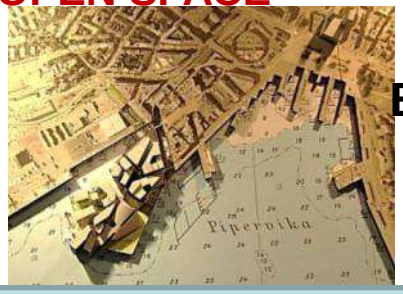


Office plans with furniture arrangement:
1 — office building in Baden-Württemberg, Germany, architect K. Tielig & Partners,1994



Business center "Iceberg" in Nizhny Novgorod, architect V. Bykov,A. Sazonov, D. Slepov, 2001

OPEN SPACE



BUSINESS CENTERS EVOLUTION

BUSINESS CENTERS OF THE XXIst CENTURY (2000-2022)

PUBLIC BUILDING

BUSINESS CENTERS of the XXs century

BUSINESS CENTERS OF THE XIXth CENTURY

BUSINESS CENTERS OF THE RENAISSANCE AND REFORMATION

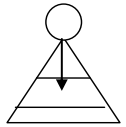
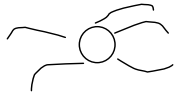
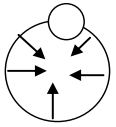
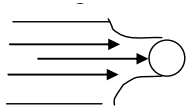
BUSINESS CENTERS OF THE MIDDLE AGES

BUSINESS CENTERS OF ANTIQUITY

***Chronology of the development of the dominant types of business centers*:**

1. Business centers of antiquity:
- ancient Greek business centers-acropolis, agora (V-centuries BC);
- ancient Roman business centers-forum, basilica (I-V centuries AD).
2. Business centers of the Middle Ages (X – XV centuries):
- kremlin, detinets, medieval castle;
-market square;
-city estate.
3. Business centers of the Renaissance (XVI - XVII centuries): town hall, town hall square.
4. Russian buildings of state administration (late XVII-XVIII centuries):
-public places;
-college buildings;
-state chambers.
5. Business centers of the era of the formation of capitalism (XIX century):
-traditional type: bank, stock exchange, trading house, apartment building;
-non-traditional type: home of hard work, shelter;
-fair.
-6. Business centers of the Soviet period (1922 -1991):
-specialized management building;
-universal administrative building;
-the business center of a large industrial association.
7. Modern business centers (late XIX-late XX centuries):
-city (city within a city) and building-conglomerate (vertical city);
-office, studio;
-embassy, consulate;
-country residence (prototype-medieval castle);
-headquarters;
-congress hotel, conference hotel;
-trade representative office;
-bank;
-stock exchange;
-business school;
-fair, exhibition;
-business club;
-center for social (psychological) rehabilitation;
-machine (display) room;
-terminal, a multi-purpose junction at the intersection of transport

THE RELATIONSHIP BETWEEN ORGANIZATIONAL PARADIGMS AND TYPES OF PUBLIC BUILDINGS

Type of organizational paradigm	Type of public building model
"Closed" organization model 	"Closed" - *structural* model of the building: vertical functional zoning; corridor planning structure; compact composite scheme; special purpose of the premises; strict focus and certainty of communication; incapable of transformation
"Random" organization model 	"Random" - *potential* building model: horizontal-vertical functional zoning; pavilion planning structure; dissected composite scheme; universal and special purpose of premises; communication is limited and random; dynamic, constantly in the process of transformation
“Open" organization model 	"Open" - *functional* model of the building: horizontal functional zoning, cell-hall, enfilade-ring, corridor-ring planning structure, compact composite scheme; universal purpose of the premises; strict focus and certainty of communication; dynamism, ability to transform
"Synchronous" organization model 	"Synchronous" - *a formal* model of a building: functional blocks are isolated from each other; cell layout structure; linear composition scheme; universal purpose of premises within a single cell; communication between cells is minimized, in each cell — autonomous; incapable of transformation

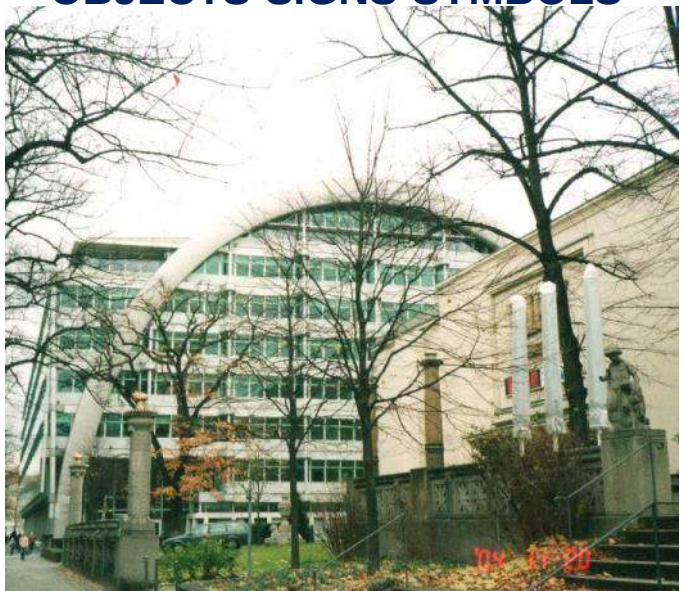
NEW TYPES OF BUSINESS CENTERS

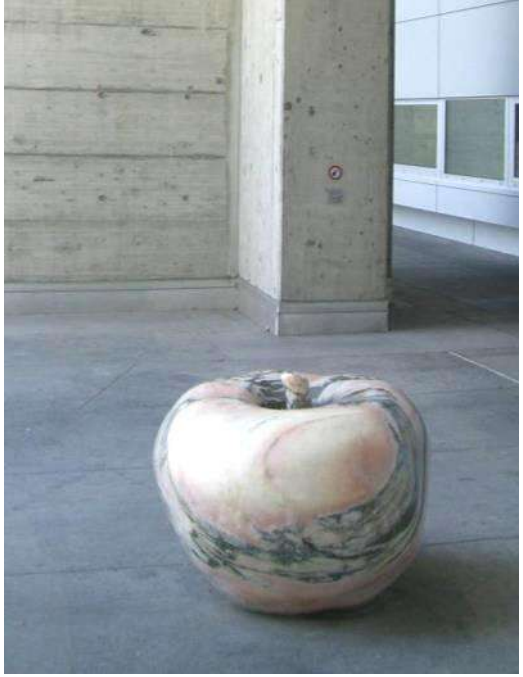
In recent years, with the transition to a single information society, the typology of business centers has expanded. Technoparks began to be built, and business incubators appeared on university campuses as a new type of multifunctional complex. Coworking centers have become popular, based on the model of a common space that participants, while remaining independent and free, use for their activities. In particular, coworking is used for "remote" employees: programmers, designers, beginners entrepreneurs-and occupies an intermediate place between working from home and using a separate office. The concept of "project office" - a division responsible for the methodological and organizational support of project management in the organization.

ARCH-GATE-GATE

PAST-FUTURE

OBJECTS-SIGNS-SYMBOLS

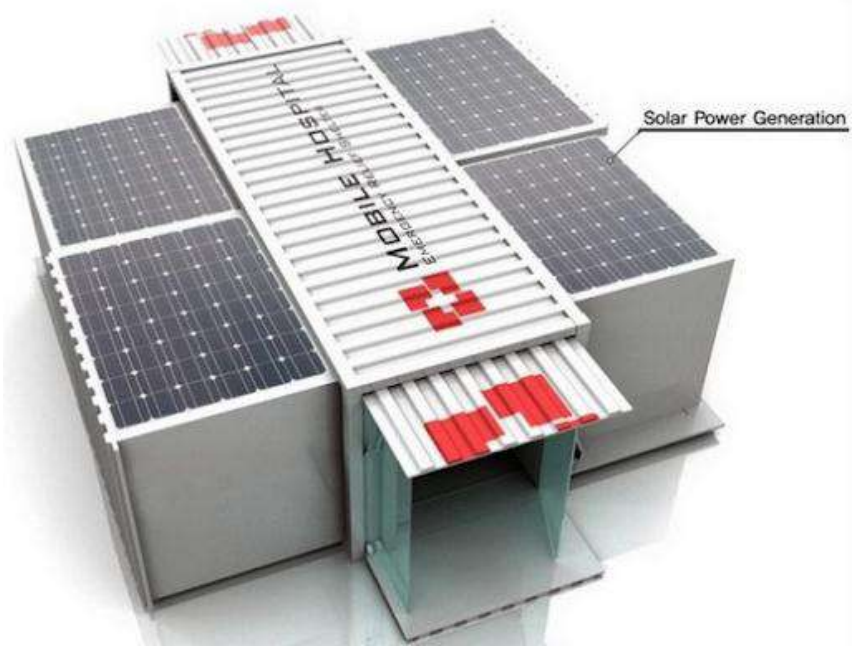


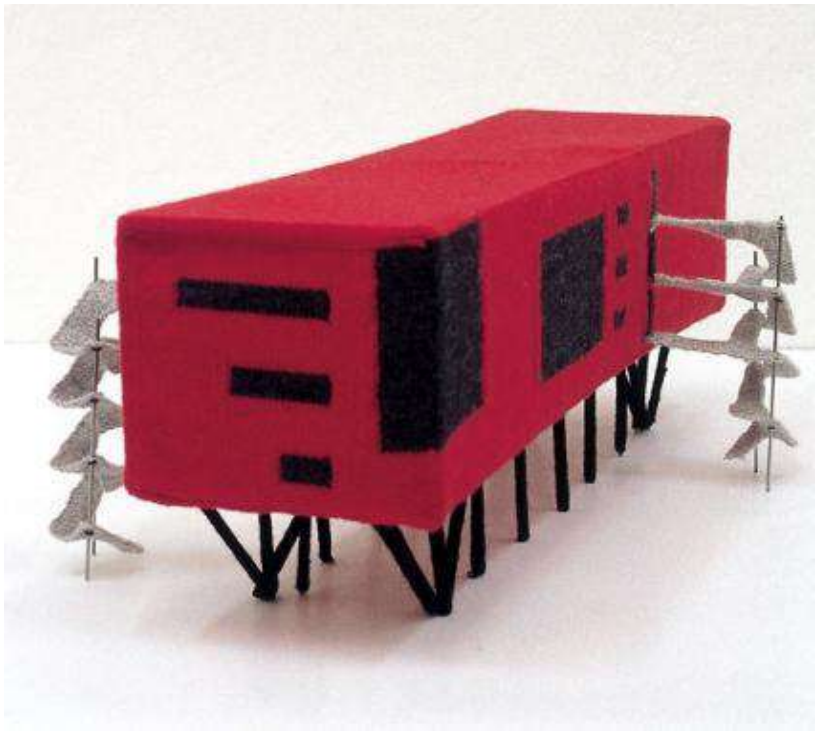


CITY TOY

LECTURE 19.

ARCHITECTURE OF TEMPORARY STRUCTURES





FROM BUILDING TO SPACE:

- **the concept of "information space" in architecture;**
- **information space as a type of public space**

TYPOLOGY of an INFOBOX as a TEMPORARY STRUCTURE:

- **three-dimensional solution of infoboxes**
- **infobox without internal function**
- **infobox in the internal space of a building**
- **change of function as a typological feature**
- **"box" or structure**

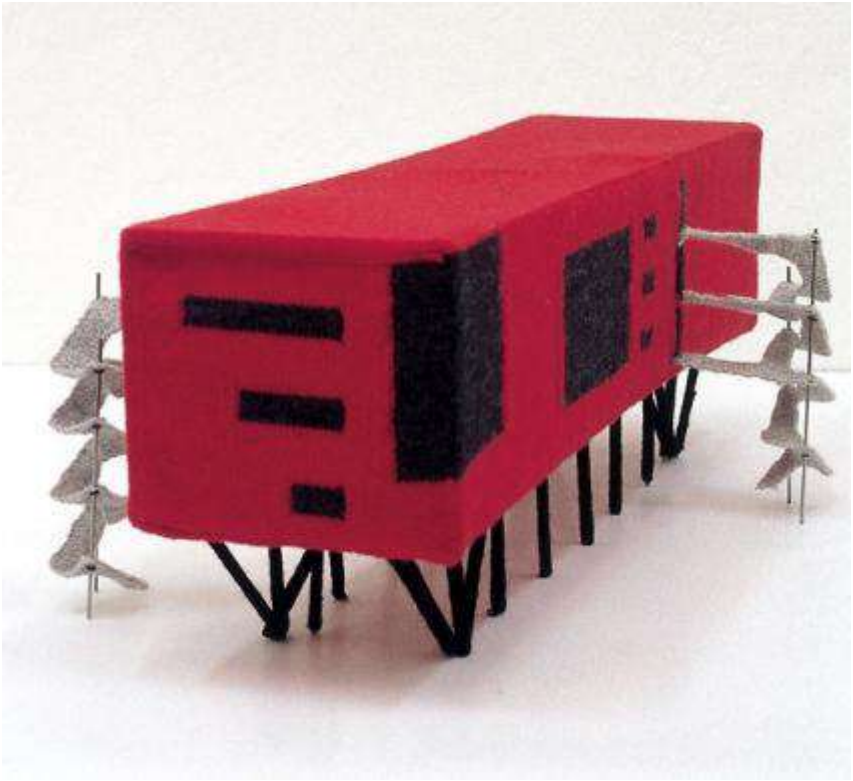
TEMPORARY STRUCTURE AS A HYPOSTASIS OF ARCHITECTURE:

- **aesthetics of temporary structures in the architecture**

TEMPORARY STRUCTURES IN SPATIAL AREASCITY FRAMES:

- **concept of potential spatial frameworks**
- **city information framework**
- **infobox as a conceptually new object**

infobox



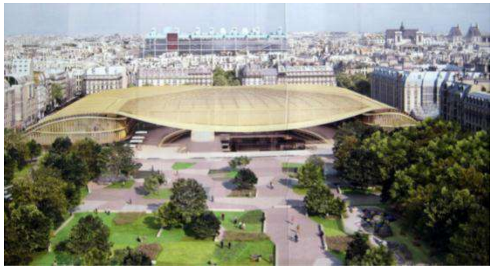
infobox cloud

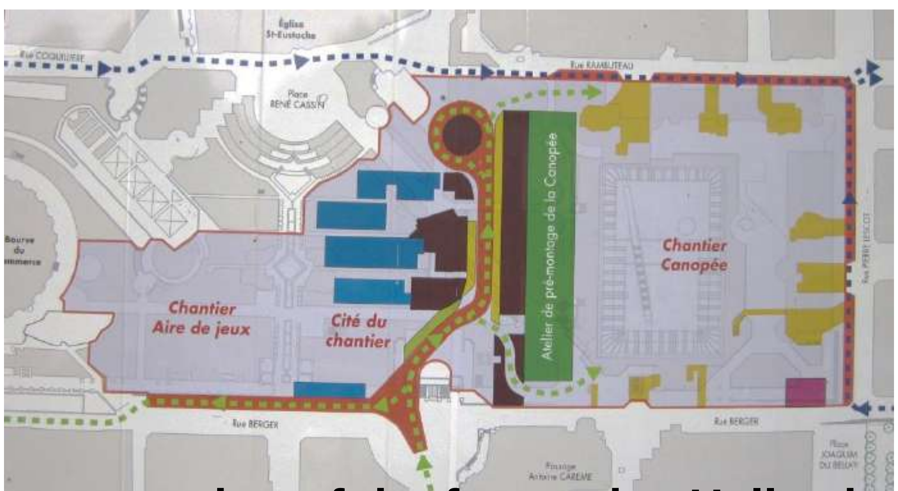
INFOBOX A TEMPORARY STRUCTURE IN THE CITY'S INFORMATION SPACE

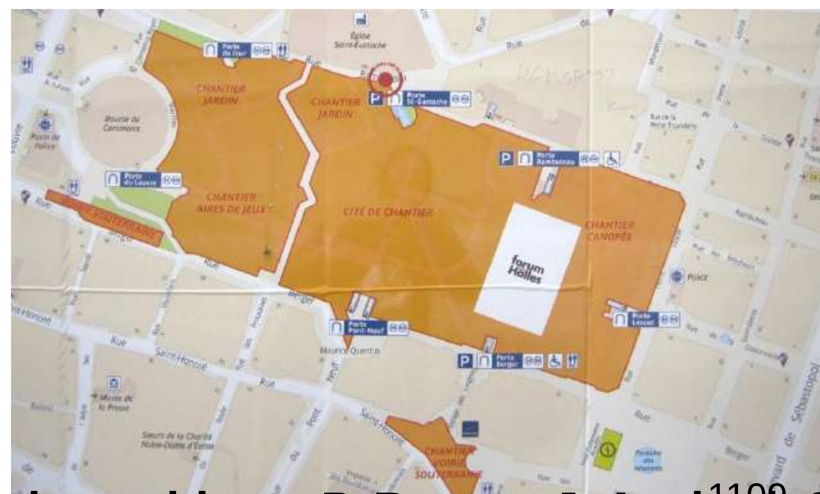
FROM BUILDING TO SPACE

Zaryadye Park in Moscow, arch. Diller Scofidio + Renfro, landscape architects Hargreaves Associates (USA), Russian urbanists Citymakers (Russia-Denmark)

INFORMATION SPACE AS A TYPE OF PUBLIC SPACE







Reconstruction of the forum des Halles in Paris, architect. P. Berger, J. Anziutti, 2007-2016

City Palace (architect F. Stella) and Humboldt Forum in Berlin

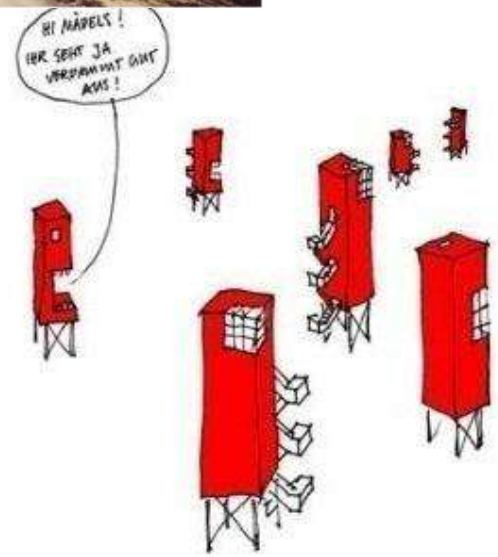
1111

Moscow, Manezhnaya Square and Neglinnaya str., July 2018

TYPOLOGY OF THE INFOBOX AS A TEMPORARY STRUCTURE

Infobox is electronic storage of information.
The concept is interdisciplinary and reflects the influence of virtual culture on material culture. The architecture that creates the environment of life has adopted this language and embodied it at the object level.
Infobox is a fairly new and rare type of architectural object, the formation of which, on the one hand, is associated with the development of information culture and, on the other hand, the culture of communication.
The concept of "infobox" contains the opposition "open" (information) and "closed" (its storage). On this dualism, an architectural type is built, designed to remove the contradictions of ideology by being

VOLUMETRIC AND SPATIAL SOLUTION OF INFOBOXES



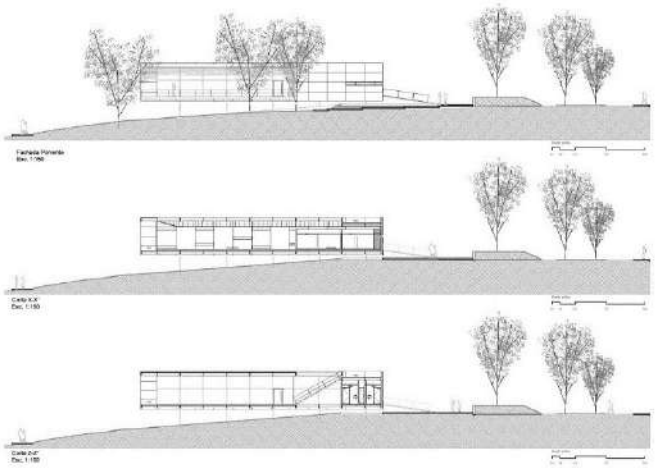
Infobox on Potsdamer Platz in Berlin, arch. Schneider + Schumacher, 1995

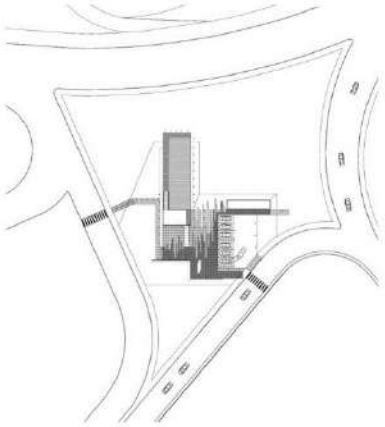
Westhaven-infobox in Frankfurt-am-Ma arch. Schneider + Schumacher, 2002

Infobox “Kupol" in Zaryadye Park in Moscow, 2014

Humboldt infobox in Berlin, architect T. Kruger, K. Schubert, B. Vandrike, 2011

ARCAM Architectural Center in Amsterdam, arch. Rene van Zuk, 2003





Infobox in Guadalupe Puebla, Mexico,
arch. Rodrigo Jaspedo and Enrique Betancourt, 2003

Cinnamon Tower and Pavilion in HafenCity in Hamburg, arch. Bolles and Wilson, 2008 - 2016

Set of infobox rooms:

- information and reference room;
- the exhibition space;
- presentation (film, lecture) halls;
- book and souvenir shop;
- offices; sanitary units;
- service rooms (min);
- storage rooms (min);
- technical rooms

INFOBOX WITHOUT INTERNAL FUNCTION

1120

Pavilion on the Town Hall Square in Bruges, architect T. Ito, 2002

The old harbor in Genoa. Observation lift, architect R. Piano, 2001

INFOBOX IN THE INTERNAL SPACE OF THE BUILDING

Interiors of the New terminal of the Heydar Aliyev Airport in Baku, Autoban Architect, architect S. Ozdemir, S. Kaglar, 2010-2013

CHANGE OF FUNCTION AS A TYPOLOGICAL FEATURE

Infobox "Muzeon" on the Crimean embankment in Moscow, architect I.

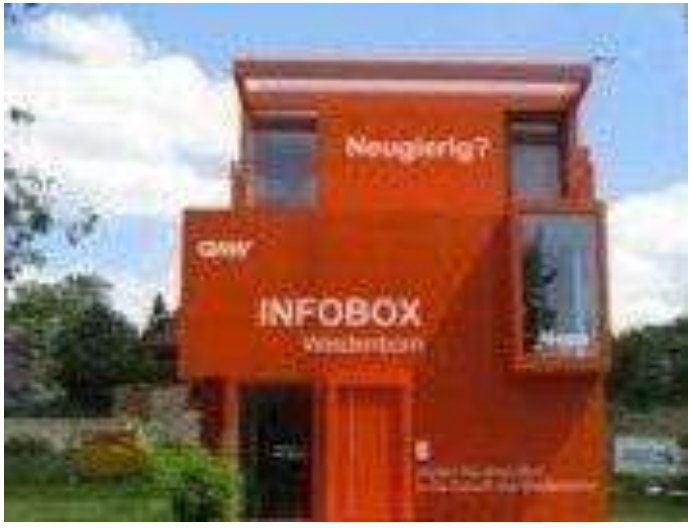
A "BOX" OR A STRUCTURE?

Infobox in Moscow, May 2018

Infobox in Cologne

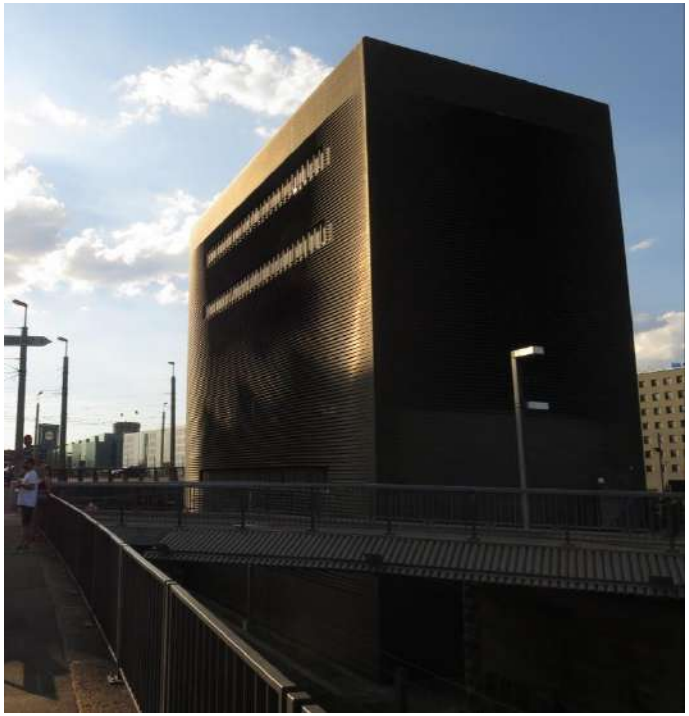
Infobox Hauptbahnhof in Zurich

Sale Center in Toronto, architect W. Alsop, 2006



Infobox at the conference ReMIX 2010, Moscow

Rail-Infobox In Rotterdam, 1997

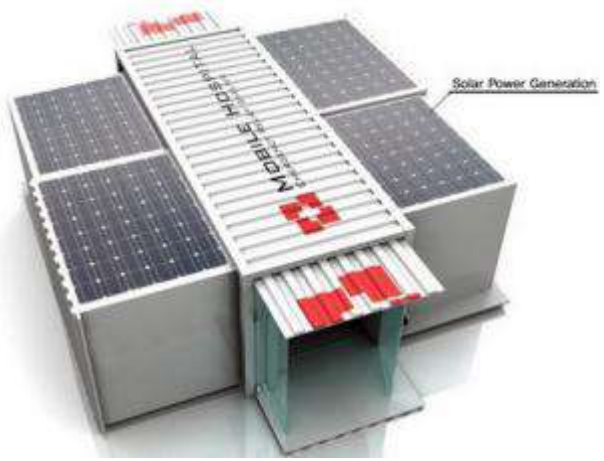


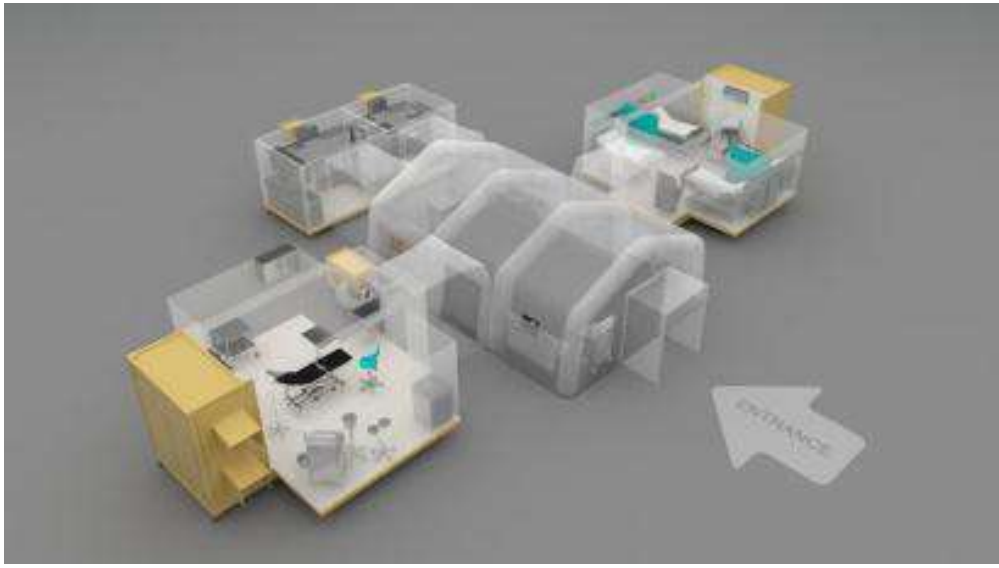
Signal boxes in Basel, arch. Herzog and de Meuron, 1994, 1999

TEMPORARY CONSTRUCTION AS A HYPOSTASIS OF ARCHITECTURE

Temporary prefabricated modular structures

PREFABRICATED MODULAR TEMPORARY MEDICAL CENTERS

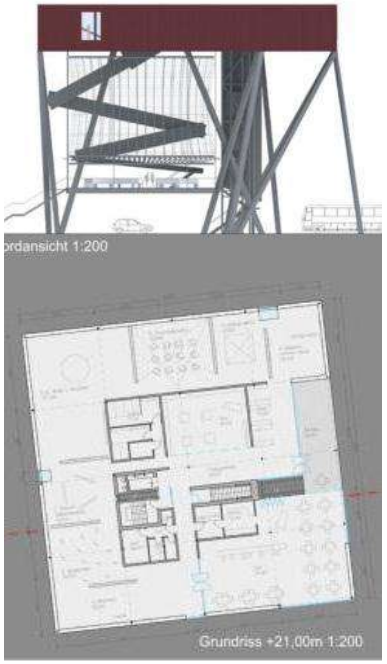


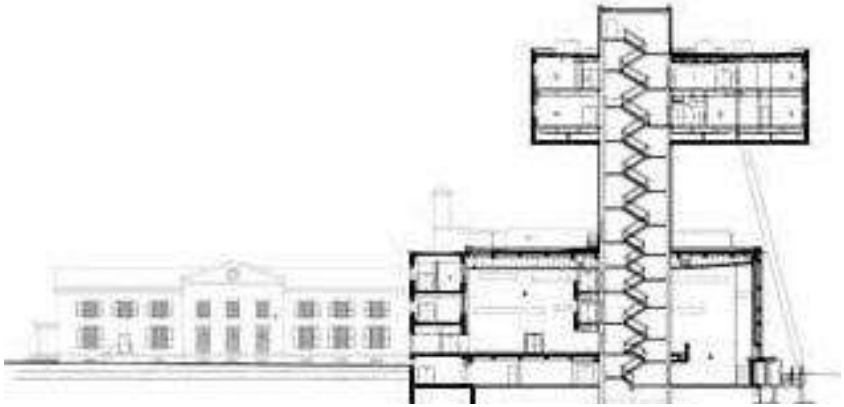


Temporary hospital in Kazakhstan, 2020

AESTHETICS OF A TEMPORARY STRUCTURE IN ARCHITECTURE

Transport Museum in Lucerne, arch. Gigon Guyer Bureau, 2009

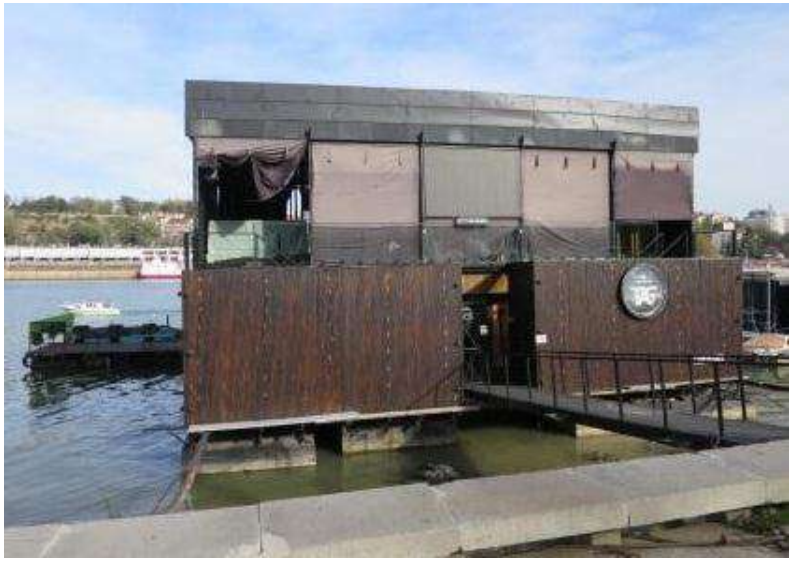




Infobox project for Central Station in Vienna,architect M. Walraff, 2008-2011

Design Center in Toronto, arch. W. Alsop, 2004

TEMPORARY STRUCTURES
IN SPATIAL FRAMEWORKS OF CITIES



Temporary structures on the Sava River embankment in Belgrade

1132

Facilities of the Danube Canal in Vienna

1133

The buildings of the Stadtbahn in Vienna, arch. Otto Wagner, 1890-1992

THE CONCEPT OF POTENTIAL SPATIAL FRAMEWORKS

HafenCity infobox System, Hamburg

1. Инфобокс Kesselhaus

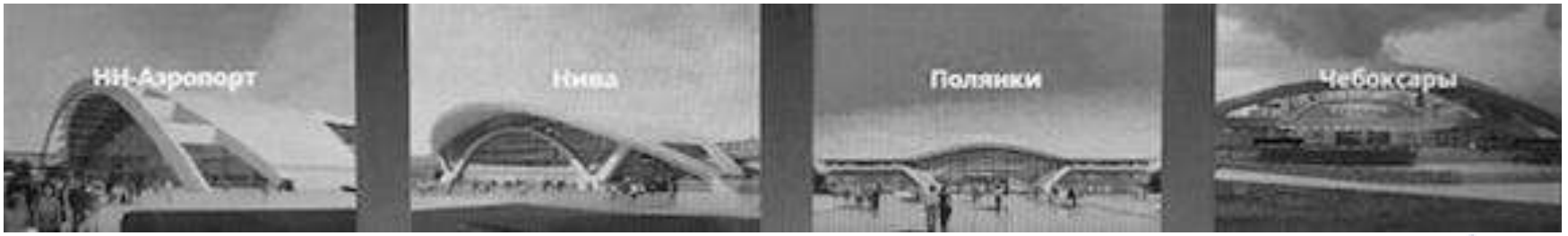
2. Павильон Cinnamon, арх. бюро Bolles&Willson,

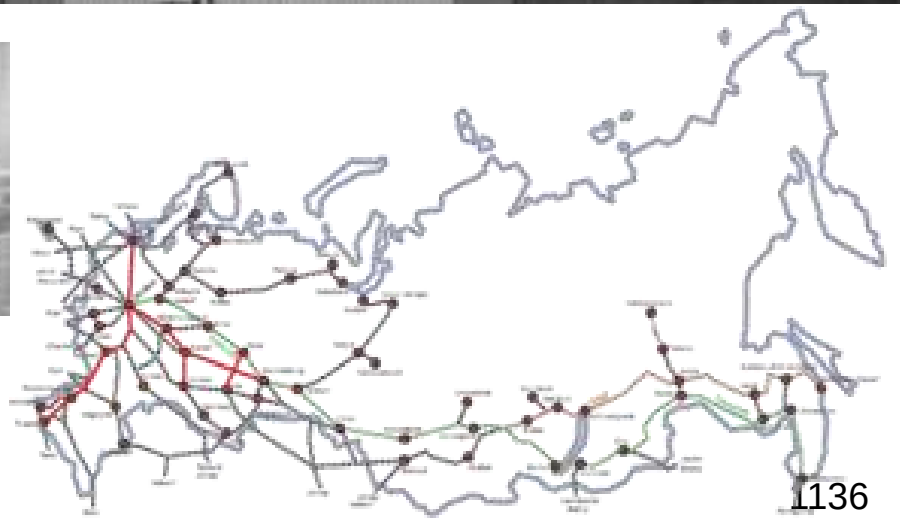
4. Инфобокс Осака

5. Смотровая башня

INFORMATION FRAMEWORK OF THE CITY

Infobox system on the Glognitz – Murzzuschlag railway line, Graz – Klagenfurt, Austria, arch. Wagner Graz





Projects Russian Railways until 2030

INFOBOX AS A CONCEPTUALLY NEW OBJECT

A virtual information space appears around the infobox, the role of which is to wait the appearance of a real public space. The infobox has a special role of the connection of times: these objects are bridges between the past, present and future. By definition, playing a subordinate role with a significant object, the infobox has its own typological features:

- simplicity of the planning scheme

- monofunctionality is a dominant information and exhibition function

- **structural scheme – frame, mainly metal, fast excitability**
- **self-sufficiency, small**
- **scale expressiveness**
- **artistic image**

- compact form

- high technology

Infobox system for the 2018 World Cup in Nizhny Novgorod,
Master M. Mikhailov, scientific supervisor Prof. A. Gelfond, 2018

LECTURE 20.

TECHNICAL AND ECONOMIC ASSESSMENT DESIGN SOLUTIONS FOR PUBLIC BUILDINGS.TECHNICAL AND ECONOMIC INDICATORS

GOALS OF THE FEASIBILITY STUDY DESIGN SOLUTIONS

The technical and economic assessment of the designed building includes an assessment of its spatial planning and design solutions. The purpose of the technical and economic assessment of the space-planning solution of the building is to check the compliance of the project indicators with the requirements of the design assignment and codes of rules for buildings of the designed type, to compare the indicators of the new project with the indicators of projects similar in purpose, capacity and number of floors of buildings.
The purpose of the technical and economic assessment of the structural part of the project is to identify the compliance of the project indicators for the consumption of steel, cement, specific heat consumption for heating, the complexity of construction and installation work with the control values of the corresponding indicators. Control indicators are regulated on the basis of indicators of similar projects, the designs of which meet the advanced level of modern construction technology.
The main methodological requirement for the technical and economic evaluation of the compared design solutions is compliance with their comparability.

This means excluding factors that may distort the results of the comparative assessment. For example, buildings of the same functional purpose may be compared. When comparing the space-planning variants of the project, the same structural system and building structures should be adopted in all the compared variants. Similarly, the comparison of design options is carried out in relation to a single space-planning standard. The technical and economic assessment of the project is carried out according to the volume - planning, cost and natural technical and economic indicators. Economic indicators: the number of construction cubing the total area of 1 m2 or a different unit of measure (the place in a hotel, place a student at the school, the workplace of the operator at the Bank etc.); the estimated cost of construction; operational the cost of maintaining the building; capital expenditures; labour costs; demand for basic materials and fuel. The calculation of the listed indicators is preceded by the calculation of the project's volume and planning characteristics in the following composition: number of floors; total, usable and calculated area; building volume and building area of the construction.

VOLUME-PLANNING FEASIBILITY STUDIES INDICATORS FOR PUBLIC BUILDINGS

1. ***The total area*** of a public building is defined as the sum of the areas of all floors, including technical, attic, basement and cellar.
The area of the mezzanines, passages to other buildings, glazed verandas, galleries and balconies of the auditoriums and other halls should be included in the total area of the building. The area of multi-light rooms should be included in the total area of the building within only one floor. The area of the attic floor is measured within the internal surfaces of the external walls and the walls of the attic, adjacent to the sinuses of the attic. With sloping exterior walls, the floor area is measured at floor level.
The floor area of buildings should be measured within the interior surfaces (with a clean finish) of the exterior walls.
In the total area of the building, the area of the covered unheated planning elements of the building (including the area of the roof in use, open outdoor galleries, covered loggias, etc.) is indicated separately.

2. ***The useful area*** of a public building is defined as the sum of the areas of all the premises located in the building, as well as balconies, mezzanines in halls, foyers, with the exception of stairwells, elevator shafts, internal open stairs and ramps.

3. ***The estimated area*** of a public building is defined as the sum of the areas of all the premises located in it, with the exception of corridors, vestibules, passages, stairwells, elevator shafts, internal open stairs, as well as rooms for the placement of engineering equipment and engineering networks.The area of corridors used as recreational facilities in buildings of educational institutions, hospitals, sanatoriums, recreation centers, cinemas, clubs and other institutions intended for recreation or waiting for those served should be included in the estimated area.

Area of the underground ventilation, building, design for construction on permafrost, attic and technical underground (technical loft) with a height from floor to bottom made by speaking out designs less than 1.8 m, and loggias, lobbies, on-outdoor balconies, porticos, porches, exterior open stairs in general, the useful and the settlement area of the buildings is not included. The area of the premises of buildings should be determined by their size, measured between the finished surfaces of walls and partitions (including plaster and internal insulation) at the floor level (without accounting for skirting boards). The area of the attic floor is taken into account with a decreasing coefficient of 0.7 in areas within the height of the inclined ceiling (wall) at a slope of 30° — up to 1.5 m, when 45° — up to 1.1 m, at 60° or more — up to 0.5 m.

4. ***The construction volume*** of a public building is defined as the sum of the volumes above the zero mark (aboveground part) and below the zero mark (underground part). It is defined within the confining surfaces with the inclusion of enclosing structures, light lanterns, domes, starting from the mark of the clean floor of each part of the building without taking into account the protruding architectural details and structural elements, underground channels, porticos, terraces, balconies.

The space under the building on supports, as well as the accessible underground areas under the building being designed for construction on permafrost soils, the volume of driveways is not included in the volume of the building.

5. ***Building area*** is the area of the horizontal cross-section along the outer outline of the building along the plinth, including the protruding parts(entrance platforms and steps, verandas, terraces, pits, entrances to the basement). The area under the building located on pillars, the passage under the building, as well as the protruding parts of the building that cantilevered beyond the wall plane at a height of less than 4.5 m, are included in the building area. In addition, you should specify the area of the underground parking lot that goes beyond the outline of the projection of the building.

6. ***Number of floors***. It is necessary to take into account all floors, including underground, basement, cellar, aboveground, technical, and attic when determining the number of floors.

When determining the number of ***floors*** of the aboveground part of the building, the number of floors includes all aboveground floors, including the technical, attic, basement, if the top of its overlap is above the average planning mark of the ground by at least 2.0 m. With a different number of floors in different parts of the building, as well as when placing the building on a plot with a slope, when due to the slope the number of floors increases, and the number of floors is determined separately for each part of the building. A mezzanine that occupies more than 40% of the space should be considered as a floor.

The underground space under the building, regardless of its height, as well as the inter - floor space and the technical attic with a height of less than 1.8 m are not included in the number of above-ground floors.

It is necessary to identify a principled approach to the use of existing standards, since it is the attitude to the design standards that sometimes initially determines the choice of a particular design solution. The main normative literature for the architect in our country is currently Codes of Rules. They are updated versions of Building codes and regulations, as well as Technical Regulations. In addition, there are Departmental Building Codes that apply to different types of buildings. These publications set out both the required and recommended standards. The norms are formed under the influence of many factors that have a decisive impact on the formation of architectural and planning solutions of public buildings: socio-economic, urban planning, environmental, climatic, functional, technological, structural, sanitary, ergonomic, fire - fighting. Currently, "green standards" are being formed, and the transition to Eurocodes is discussed. Therefore, it is always necessary to approach regulatory documents — codes of rules, technical regulations, building codes — creatively, understanding that this literature is constantly changing and improving simultaneously with the development of scientific and technical thought and a variety of professional communications.

Conclusion

This course of lectures covers the key approaches to the design of public buildings of different types. A public building is a complex structure of complex functions, structures, and forms. Currently, the development of new approaches to design is characterized by the use of renewable structural and finishing materials, alternative energy sources, taking into account environmental requirements. On the other hand, new types of buildings and structures are being formed: weekend centers, social rehabilitation centers, aqua parks, fitness centers, technology parks, business incubators, infoboxes, coworking centers, media libraries, recreational and leisure complexes. A fundamentally new role was assigned to the communications of buildings: in addition to transit, they began to perform other functions. In addition, in connection with the emerging transition from the point design of individual buildings to the design of the architectural environment of cities and settlements, attention to public spaces as spaces of social activity has become more acute.

Public spaces are defined as open spaces of public centers and landscape and recreational areas, closed spaces of public buildings and complexes, and interstitial spaces. Open public spaces — nodes of the urban framework: public and business centers, university campuses, research centers, hospital campuses, health resort complexes, sports complexes, residential centers of all levels of public service, residential spaces, courtyards, parks and squares, administrative and residential areas of industrial buildings. Closed public spaces — internal spaces of public buildings and complexes. They can be special with a dominant function — administrative, educational, sports, trade, museum and exhibition; universal, performing any of the social functions, working on the principle of changing functional priorities; mono-and poly-functional. Intermediate spaces include all types of communication spaces. On the basis of these messages, a spatial typology is formed, which has a decisive influence on the approaches to architectural design.

QUESTIONS ON THE COURSE "ARCHITECTURE OF PUBLIC BUILDINGS»

1. The main factors that form the typological features of public buildings.
2. The accepted classification of modern public buildings and complexes. The main groups of public buildings.
3. Existing public service systems. Step-by-step public service system. A system of community centers.
4. Methods of functional and planning organization of public buildings.
5. Functional zoning
6. Schemes for grouping the premises of a public building.
7. The scheme of cell grouping of premises.
8. Scheme of enfilade-ring grouping of premises.
9. Scheme of corridor-ring grouping of premises.
10. Composite schemes of public buildings.
11. Structural units of public buildings.
12. What premises can be located in the basement and cellar floors of public buildings?
13. What is the minimum width of the main and secondary corridors of a public building?
14. Techniques for lighting the corridors of a public building.
15. What is the width and slope of the staircases of a public building?
16. Techniques for ensuring fire safety in public buildings.

17. What is the maximum permissible distance between two stairwells of a public building, depending on the structural fire hazard and the density of the human flow?
18. Draw a diagram of a non-smoking staircase with a passage through the air zone.
19. Specify the norm of the cloak room area in m2 per person.
20. Specify the standard area of the lobby, including the cloak room, in m2/person.
21. Specify the minimum width and depth of the vestibule.
22. Draw a diagram of the staff facility room.
23. What rooms can be designed without natural light?
24. What groups of premises do the buildings of general education schools consist of?
25. What are the main groups of rooms that make up the buildings of art schools?
26. What functional areas should be provided for on the site of the medical institution?
27. What are the main groups of rooms that make up the buildings of hospitals?
28. Draw a diagram of the loading of storerooms in the buildings of trade and food.
29. What are the main groups of premises that make up the buildings of railway stations?
30. List the types of indoor and outdoor sports facilities.
31. Draw a locker room block with showers and sanitary units in the sports facility.
32. Draw a block of sauna rooms.
33. What functional blocks do museum buildings consist of?
34. List the types of entertainment facilities.

35. What are the main groups of rooms that hotel buildings consist of?
36. Draw a diagram of a two-room hotel room for 2 people for hotels of the highest category, indicating the main areas.
37. Draw a diagram of a three-room hotel room for 2 people for hotels of the highest category, indicating the main areas.
38. What functional blocks do bank buildings consist of?
39. Draw a block of premises for the bank's management.
40. Draw a diagram of the bank's storeroom with the pre-storeroom, indicating the main dimensions (plan and section).
41. List the types of parking lots, depending on the different characteristics.
42. What are the methodological foundations for the design of multifunctional buildings and complexes?
43. Which public buildings form the basis of the typology of the business center building?
44. What mandatory requirements must be met when designing public buildings that are accessible to low-mobility groups of the population?
45. How is the total area of the building determined?
46. How is the useful area of the building determined?
47. How is the estimated area of the building determined?
48. How is the total construction volume of the building determined?
49. How is the building area of a public building determined?
50. How is the number of floors of a public building determined?

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THANK YOU FOR YOUR ATTENTION!