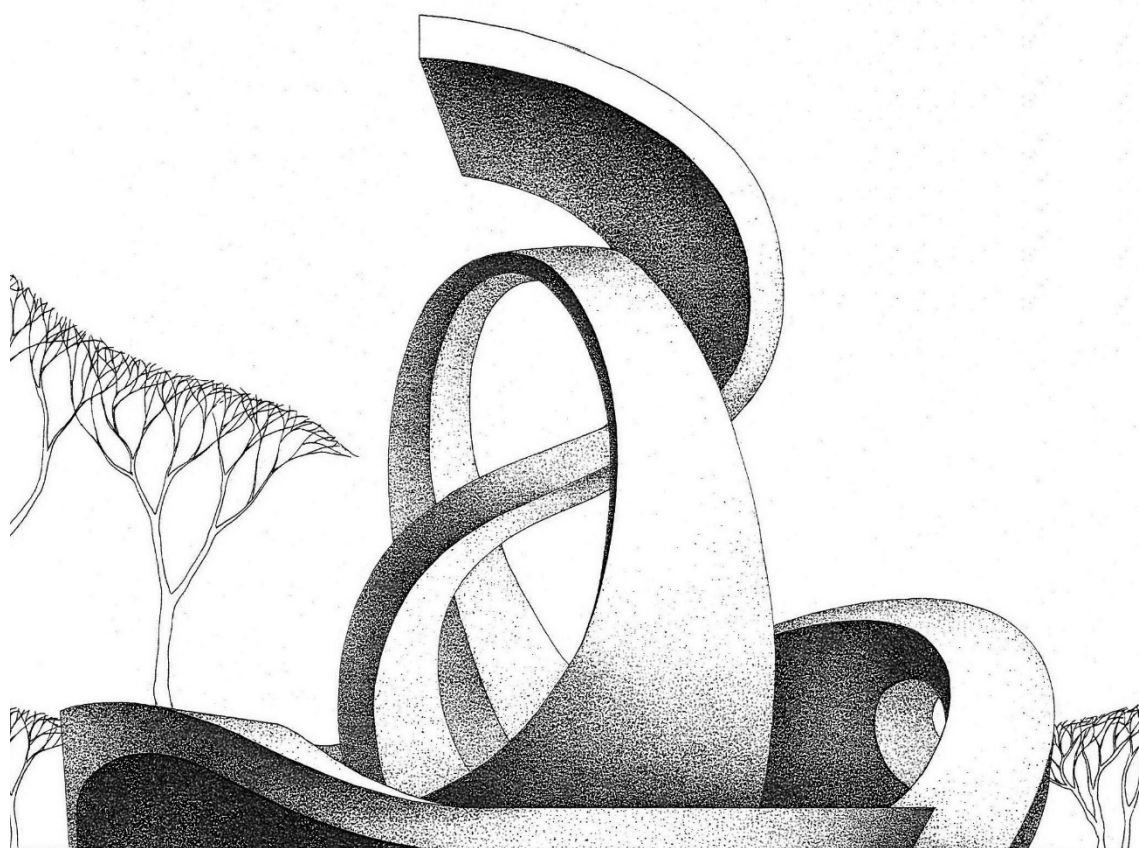


В.С. Дуцев, А.А. Зайцев, Д.А. Лошкарева

# FOUNTAIN

*Учебное пособие*



Нижний Новгород  
2024

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В.С. Дуцев, А.А. Зайцев, Д.А. Лошкарева

## FOUNTAIN

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*В.П. Бандаков* – канд. архитектуры, ГАП ООО НПО «АРХСТРОЙ»

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Instructions for a course project in the subject «Architectural Design» are given, the content and sequence of the course project are considered, recommendations and requirements for the design of small architectural objects without internal space are given on the example of «Fountain in the Park» or «Fountain in the Square».

Intended for students of NNGASU to complete a course project in the training directions 03.07.01 Architecture.

An approach to fountain design has been developed. Urban planning, functional, compositional aspects of fountain design are considered. Examples of graphic design in ink are given, various methods of revealing the plasticity, material and texture of the main form and elements of the fountain site landscaping are considered. The sequence of study project execution is disclosed. Examples of study projects carried out at the Department of History of Architecture and Fundamentals of Architectural Design are presented.

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## **1. General provisions**

In the first course project, the student considers the interaction of a small architectural ensemble and a natural landscape. The primary objective of the project is to identify the architectural focus of the space, considering the characteristics of the surrounding area. The theme of the project includes a fountain and small architectural forms that organize the park area. The peculiarity of the theme is that the project, based on a minimally developed utilitarian function of the object, offers a wide range of possibilities for solving the image of the structure and it puts into practice the graphic and compositional skills acquired in the first year of study of volumetric-spatial composition. In addition, the design takes into account the planning conditions of the specific park area and treats the structure not as isolated from its surroundings, but as an ensemble that includes the main form, a variety of landscaping elements and green spaces. In this way, the student gets accustomed in the first project to an integrated approach in design and to the active use of natural space.

From a methodological point of view, the training project is carried out according to the following plan:

- research of existing similar objects and projects (work on a summary);
- acquire skills of graphic drawing in ink using various tools (graphic exercise);
- analyzing the topographic background and functional zoning of the site (situational and general plans);
- volumetric and spatial organization with plastic development of fountain elements;
- architectural drawings.

## **2. Goals, objectives and composition of the project**

The topic of the course project is the design of a fountain, which aims to achieve a comprehensive solution to the volumetric-spatial composition with plastic elaboration of the main form and additional landscaping elements that activate the relief of the site. The fountain should be considered as a complex ensemble, and its creation requires the solution of various tasks.

In the process of course project execution it is necessary to solve the following tasks:

- analyze the characteristic features of the relief, vegetation, site configuration, determine the availability of any buildings, pedestrian roads and other structures; on this basis, assess the initial urban planning situation and determine the role and place of the future structure in it;
- develop the volumetric and spatial form of the structure plastically and draw up a general compositional model, including the main shape of the fountain and landscaping elements of the site;

- determine the fundamental design solution of the fountain;
- show a high level of graphic performance in architectural drawing and modelling.

The solution of these tasks involves the following sections of the training project:

- pre-project analysis of the existing fountains is reflected in the summary (the summary is based on an additional assignment);
- various techniques of graphic representation in ink are shown in the graphic exercise;
  - the general planning solution, reflecting the urban planning situation, reveals the park area organization idea with a designed fountain in its structure;
  - the planning solution with the fountain area landscaping is shown on the general plan drawing;
  - the principle volumetric and spatial solution of the fountain is presented in the form of a simple and generalized model without small details (M 1:50);
  - the detailed design of the fountain plastic and landscaping elements is shown on orthogonal drawings of the facades, plan and sectional views.

### **Training Project Composition:**

1. Clausura (independent development of a sketch-idea, carried out in the first lesson after the introductory lecture on the theme "fountain").
2. Graphic exercise (performed and evaluated before the preliminary design is approved).
3. A working model in a simplified form in search of a fountain idea is preferably made of cardboard at a scale of 1:50 for the preliminary design approval.
4. Graphic part of the preliminary design (performed on a canvas stretcher 0.55x0.75 m):
 

- site layout plan	M 1:1000, 1:2000
- general plan	M 1:200
- two facades	M 1:20, 1:50
- section drawing	M 1:50
- plan	M 1:50
5. The graphic part of the final design is carried out in the preliminary design scale, and the final model in a generalized form without small details is made of Watman drawing paper. In some cases, a linear scale can be used to create a better composition of the drawings on the worksheet to depict the facade.

### **3. Urban planning solution**

The general urban planning solution is shown on the site layout plan:

- the location of the park or its fragment in relation to existing streets and residential quarters is indicated;
- the main park entrances, as well as the main and additional pedestrian walkways linking the recreation areas of the park zone are identified;
- the project site is allocated.

The main task of the urban planning solution shown on the site layout plan is the general organization of the park area space with the designed object in its structure.

In order to identify the nature of the fountain site layout, it is recommended to detail the structure of the site itself at a larger scale and to show the landscaping of the site on the general plan drawing. In each specific case, the area and configuration of the site are determined according to the author's idea and design assignment. The recommended site area is 400 – 600 m<sup>2</sup>.

### **3.1. Assessment of the compositional qualities of the site**

When assessing the features of the territory (a topographical basis is attached to the task for designing a fountain), which influences the nature of the composition of the fountain, such landscape forms as relief, vegetation and water areas are identified. There are no compositional dominants on passive relief. The possibilities for perceiving the ensemble are limited, because it is located in one plane and viewed from one level. The architect's task is often to create an artificial active terrain: earth-filled hills and platforms, depressions and recesses, etc.

In design solutions on active relief, as a rule, the existing compositional center is strengthened, relief forms, terraces, slopes, and elevation differences are revealed. In conditions of active relief, the architect's task is to make compositional use of the characteristic features of the site.

When analyzing green spaces, several compositional states are identified: compact arrays with the presence of free spaces; groups of trees, individual trees; the vegetation is shrub and meadow. The project proposal should provide a wide view of the ensemble from the main pedestrian paths, and it is also desirable to plant landscaping in the absence of vegetation.

### **3.2. Functional zoning of the fountain ensemble**

Functional zoning is shown in the drawings of the site layout plan and general plan, where various problems are solved using various graphic techniques. The site layout plan graphically reveals the general planning or urban planning solution of the park territory or its fragment within the boundaries of the topographic base given according to the assignment; the position, configuration, boundary of the site and main pedestrian links are

determined. The general plan shows in more detail the functional zoning within the boundaries of the designed area of the fountain, and defines an integral composition consisting of the main form and landscaping elements. For example, the fountain area may include a passive recreation area (various areas, terraces, benches, etc.) and an active recreation area (walkways, staircases, playgrounds). Each site may have a different size, configuration and pattern of decorative paving surface, visually indicating the different functions of the recreation areas and their boundaries. If we consider the drawing of the general plan as a combination of the artistic solution and functional zoning of the designed space, then this drawing will be a frontal composition, which traces the stylistic unity of all forms and identifies the compositional center (the main form of the fountain). The scale of the general plan drawing allows all areas to be graphically separated according to their functions, and the pattern of the decorative surface of the paving can only be depicted conventionally, revealing the distinctive feature of each form or zone.

As a rule, the fountain area is divided into three conventional functional zones: entrance, transition, culmination. All zones may not have a clear division.

The entrance zone contains preliminary information and is a conventional entrance, fixed by the initial element or a special landscaping type. The next conventional zone is the transition zone, which organizes a gradual transition to the main form. In these zones, a psychological restructuring is carried out, a pause is created, which is necessary for the visitor to switch attention to the perception of the main form. The landscaping of the entrance and transition areas includes various landscaping elements, small architectural forms, and platforms or terraces to intensify the relief. The last zone, which completes the composition, is the culminating zone and is distinguished by the main form. Depending on the position of the fountain site and its surroundings, the entire complex can be ceremonial or chamber. In certain urban planning conditions, it can be located both at the entrance and in the depths of a park or square. Moreover, its site can be compact or extended, depending on the author's idea and the assigned setting.

#### **4. Volumetric-spatial organization of the fountain ensemble**

The volumetric and spatial solution of the ensemble should be a logical continuation of its urban planning solution. It dictates the position of the composition center, proportional ratios of the main and adjacent elements of the complex. At the same time, depending on the nature of the site and creative preferences of the author of the project, the object can be designed in contrast or in nuance with respect to the surrounding area.

The center of the composition in this case will be the main form of the fountain - the direct water-distributing volume. As a rule, it rises above the surface of the reservoir as the main accent. This volume can be artistically



conceived as a simple architectural form or a combination of several forms. The variety of fountain designs is based on the properties of the form. When composing, the importance of each feature in the form creation should be taken into account:

- the size of the form and its divisions correlates with the human figure in scale and characterizes the monumentality or intimacy of the structure;
- geometric characteristics determine the plasticity of the shape and the type of its design: rectangular, oblique shapes correspond to rod, frame, folded, ribbed structures, curvilinear shapes correspond to the structures of arches, shells of various curvatures;
- the massiveness of the form causes a feeling of lightness or heaviness of the structure, which is achieved by identifying the type of material and its texture (identifying the features of the internal structure) and texture (identifying the type of treated surface);
- the configuration of the form or the specific arrangement of its parts determines the individuality of the composition as a whole, the specific feature of the form, the dynamic or static character, identifying the central, dominant element of the main form.

The fountain bowl is an important compositional element. It can have a different outline: picturesque or regular, depending on the site features and the main form structure. The water reservoir (fountain bowl) with enclosing structures should unite compositionally the fountain itself and the adjacent landscaping. Depending on the general idea, the volumetric and spatial composition of the fountain can be presented in the form of several planning solutions:

- the **concentric model** determines the types of symmetry and rhythm in the horizontal and vertical development of the main form elements; the main form is located in the center of the reservoir (Appendix 10);
- the **sector model** - elements of the form can develop asymmetrically and unevenly in different directions horizontally and vertically, the main form can be located either in the center of the fountain bowl or off-center; the configuration of the reservoir can be presented in a complex geometric form (Appendix 11);
- the **multi-core (multi-center) model** involves the connection of separate structures into a single composition; each fountain as a separate structure can have its own form and bowl, the plastic solution of which is subject to the dominant fountain form; water reservoirs as flowing spaces create a unified ensemble (Appendix 12).

The overall composition should organize the viewer movement along the route set by the architect to ensure the best visual perception of the author's idea. In addition, the fountain ensemble can serve a different function in a park or public garden: to be a local landmark on the transit route; to act as a hinge and denote the change of movement directions; finally, to complete the composition, being its culmination. For this purpose such means of architectural composition

as meter and rhythm; symmetry, asymmetry, dissymmetry; system of proportions are used.

## **5. Plastic development of the main form of the fountain and complementary landscaping elements of its area**

The spatially developed fountain structure includes a dominant form and secondary landscaping elements of the site. The main form can be complex and represent a complex of fountains that organize a specific recreation area in a park area. This complex is one of the accents in the overall system of landmarks of the park. Holistic perception of an object occurs not only from distant observation points, but also from close distances. Therefore, it is necessary to create an architectural composition that would combine the plasticity of large and small divisions of the general form.

Conventionally, three characteristic viewing areas of the fountain can be distinguished:

- the zone of silhouette perception approximately corresponds to approaching a distance of up to four object heights;
- the zone of holistic perception approximately corresponds to approaching a distance from four to one height of the object;
- the zone of fragmentary perception corresponds to approaching a distance from the same height of the object to the direct approach.

When developing the plastic elements of a fountain, the designer's special attention requires taking into account all viewing areas. The first zone requires not only the silhouette of the dominant, but also the position of the main form, taking into account the relief and orientation of the facades relative to the approaches. The second and third viewing zones - the zones of closest approach to the viewer - require the creation of elements comparable to a person. An angle of 45 degrees is the limit for the organic perception of the dominant. From closer points, perception is carried out fragmentarily.

Plastic development of the structure should be carried out using architectural composition without the use of sculpture elements. To achieve expressiveness, you can use forms with different properties (geometry, configuration, texture, etc.). It is possible to use such building materials as monolithic and exposed concrete, natural and artificial stone, metal, glass and their combination.

The solution of the main form implies accompanying elements, both included in its composition and separately standing. The plastic unity of large architectural forms and their details implies a continuous ornamental surface, freely developing in plan and on facades. The surface of the main shape of the fountain, the surfaces of retaining walls, terraces, walkways, stair railings should be made in the same style. For this purpose, various ornaments and other plastic techniques are used to process the form surface to reveal the patterns and textures of materials. Small forms: flower stands, flowerpots, benches, theater

stands, etc., as well as lamps and advertising installations of various types should act as elements of a single ensemble.

## **6. Design solution**

New constructions have expanded the idea of the morphology of the fountains' architectural language. Complex forms of various spatial structures occupy a marked place in the architecture of modern fountains along with the traditional ones.

The constructive solution of the main form can be interpreted in two directions: following utilitarian or aesthetic needs. In the first case, the design solution is to ensure convenient functioning of the complex, in the second it is an important element of the artistic and figurative composition of the object.

The main projections - facade, plan and architectural section - show the design solutions of the main form and the fountain bath with enclosing structures, as well as the ornamental surface of the bath bottom and the platform directly adjacent to the fountain. In this project, the design solution is depicted schematically. In a constructive solution, post-and-beam, frame, arched, folded, dome and other structures can be used as a basis, which allows you to organize space elegantly using architectural means, providing complete freedom in the search for original solutions. Using a variety of architectural forms, both simple and complex composite forms, leads to the figurative expressiveness of the fountain's external design.

## **7. Basic requirements and sequence of training project**

The following basic parameters of the structure should be taken as the main conditions to carry out a training project of a fountain in a park:

- the area of the fountain site is recommended to be 900 – 1500 m<sup>2</sup>;
- the dimensions of the main shape of the fountain are recommended to be 3 – 8 m;
- the area of the fountain bowl is recommended to be 30 – 50 m<sup>2</sup>.

The training design sequence includes the following stages, which, if completed in full, help the student to complete the project accurately and within the assigned deadlines.

### **7.1 Clausura**

Using the acquired knowledge on architectural design, the student must make up independently, correctly and quickly (within one class activity) depicting the author's concept. The clausura is made on a sheet of A-2 format using, at the author's request, various techniques for graphic design of the idea (pencil, ink, watercolor). The clausura includes the following images:

axonometry or perspective of the fountain from two angles, a facade, a schematic plan and a section (M 1:50). A human figure should be depicted on the façade to determine the scale of the fountain visually. An example of the clausura graphic design is provided in the Appendix 1.

## **7.2. Graphic exercise**

This task is aimed at mastering various techniques for graphic architectural drawings in ink. The work is done on a sheet of A-3 format. A sample graphic exercise and the composition of the task are given in the Appendix 2.

When drawing general plans, facades and plans, you can use various graphic techniques to reveal the plasticity, volume, material, texture and pattern of the ornamental surface of the main form, as well as other elements of the fountain area landscaping. Graphic techniques used to identify the features of the main form and landscaping elements of the fountain are shown in the Appendix 3. Types of ornamental surface covering retaining walls, fences and the bottom of the fountain bath, as well as types of paving of alleys, platforms and terraces are shown in Appendix 4. Samples of surroundings indicating different types of green spaces are also given in Appendix 5

## **7.3. Sketch-idea**

To organize a unified ensemble of the fountain it is necessary to integrate the urban planning solution of the park zone, the planning solution of the area with the fountain and the plasticity of the main form. The complex process of integrated design, on the one hand, is divided into stages, on the other hand, covers all project parts simultaneously varying the degree of each part development at each particular design stage. At the first stage when searching for a general idea, the student needs to express the original author's concept of a single ensemble, presented in the most general form. It is recommended to use a drawing and model as visual material. The following should proceed from the general idea: an urban planning solution with general functional zoning, illustrated in a site layout plan; schematic diagram of landscaping within the boundaries of the site (general plan); artistic, figurative and constructive idea of the main form of the fountain (facade, axonometry or perspective, schematic plan and section). Achieving stylistic unity of the above solutions is the basis for approving the sketch-idea. The approved solution becomes, in turn, a task for a detailed study of each fragment and part of the project. Using knowledge about the patterns of shape formation and the properties of form in an architectural composition, the student must organize a stylistically unified space of the park area, determine the position and configuration of the site, and propose the idea of the main form of the fountain as a dominant in the culmination zone,

determined by the perception scenario. The artistic concept should be revealed in the plastic solution of the main form of the fountain and in the general composition of the alleys and areas of the park zone.

Thus, to approve an sketch-idea, the student must submit a site layout plan, general plan, axonometry or perspective, facade, schematic plan, made in the form of drawings, sketches reflecting the main idea.

**To move on to the detailed study of the schematic design**, it is necessary to present the facades and plan in M 1:50, a simplified generalized working layout, which should be made from cardboard in M 1:50.

#### **7.4. Schematic Design and Working Model**

After approval of the sketch-idea, you can begin to develop the schematic design.

The **working model** is made on a scale of 1:50 and is a volumetric-spatial composition, which consists of the main form and the bowl of the fountain. When constructing an architectural composition, as a rule, various patterns are used, and complex combinations of forms are used - forms of different geometry, configuration, size, massiveness, texture, etc. (Application 14).

The graphic part of the schematic design is carried out on a canvas stretcher 0.55 X 0.75 m. When working on a schematic design, the student can experiment and apply various graphic techniques to achieve the greatest expressiveness of his work. The schematic design must correspond to the final design in terms of the composition of the drawings and the layout of the sheet. The schematic design and the working model are approved and assessed at the department examination.

#### **7.5. Requirements for main projections**

**The site layout plan** shows schematically the existing site layout and the design solution. It is advisable to place the site layout plan (M 1:1000, 1:2000) in the upper left corner of the canvas stretcher (other options are possible). The existing site layout - streets bordering the park zone, driveways, entrances, main alleys, sites, buildings and structures, green spaces, characteristic features of the relief. The design solution takes into account the main existing constraints. The author proposes a creatively redesigned park zone structure with additional alleys, sites, and also highlights the designed area with a fountain. An example site layout plan image is given in the Appendix 6.

**The general plan** (M 1:200) is being developed within the boundaries of a site with an area of 900–1500 m<sup>2</sup>. The general features of the general plan should correspond to the characteristics of the fountain site on the site layout plan. To organize the fountain area, various types of landscaping are used, as well as various landscaping elements and small architectural forms: platforms,

terraces, stairs, retaining walls, flower beds, flowerpots, benches, theater stands, lamps, advertising installations of various types, various types of ornamental paving surfaces for areas. In the general plan drawing, the landscaping elements are shown schematically, and a basic drawing of the ornamental surface of the cladding and paving of the areas is given. An example of the general plan is given in Appendix 7.

**The facade** (M 1:20, 1:50, linear scale) is an orthogonal projection that most fully reflects the plasticity of the main shape of the fountain. Therefore, special attention should be paid to the location of the main facade on the sheet, and also provide space for the second facade on a smaller scale. It is necessary to include a human figure and a surrounding area in this drawing to determine visually the scale of the fountain, proportionate to the person and environment. Examples of graphical plasticity of the main form of fountains are shown in Appendix 8.

**The plan and the section** (M 1:50) contain information about the horizontal and vertical dimensions of the structure. In addition, orthogonal projections allow you to show the general design solution from different sides. The plan must show the ornament of the fountain bath surface and the paving pattern of the area adjacent to the fountain. The plan should include, in addition to the fountain, an area adjacent to it with a width of 1-3 meters around the perimeter. The following dimensions of the fountain can be accepted: the height of the main form, as well as the length, width or diameter of the bath can be 5-8 m; bath depth – 0.5 – 1 m.

The architectural section shows the fundamental design solution with the main vertical marks of the form division and the expected water level in the fountain bath. The overall dimensions of the bowl and the main shape of the fountain on the plan are given in millimeters, rounding the last number to 0. Marks on the sections are given in meters, accurate to the thousandths place (three decimal place), rounding the last number to 0. Examples of plan design and architectural section are given in the Appendix 9.

**The project**, as a final solution, is carried out according to the above requirements for the composition of the project. An additional requirement is the compulsory drawing in ink with the use of various graphic tools and techniques to reveal the complex plasticity, texture of the material, light-and-shadow relations of the volumetric form of the fountain.

**The final model** is compulsory when submitting a course project; it is made from Watman drawing paper on 1:50 scale (plasticine and papier-mâché are not allowed or can serve as a supporting structural frame).

**The name of the project** “Fountain in the park (in the square)” is recommended to be placed at the top of the sheet, the font type is chosen at the project author discretion, font size is 15–20 mm. The abstract text, captions for orthogonal projections and text in the corner stamp are 4 - 5 mm in size.

Various fountain teaching projects are shown in the Appendix 13.

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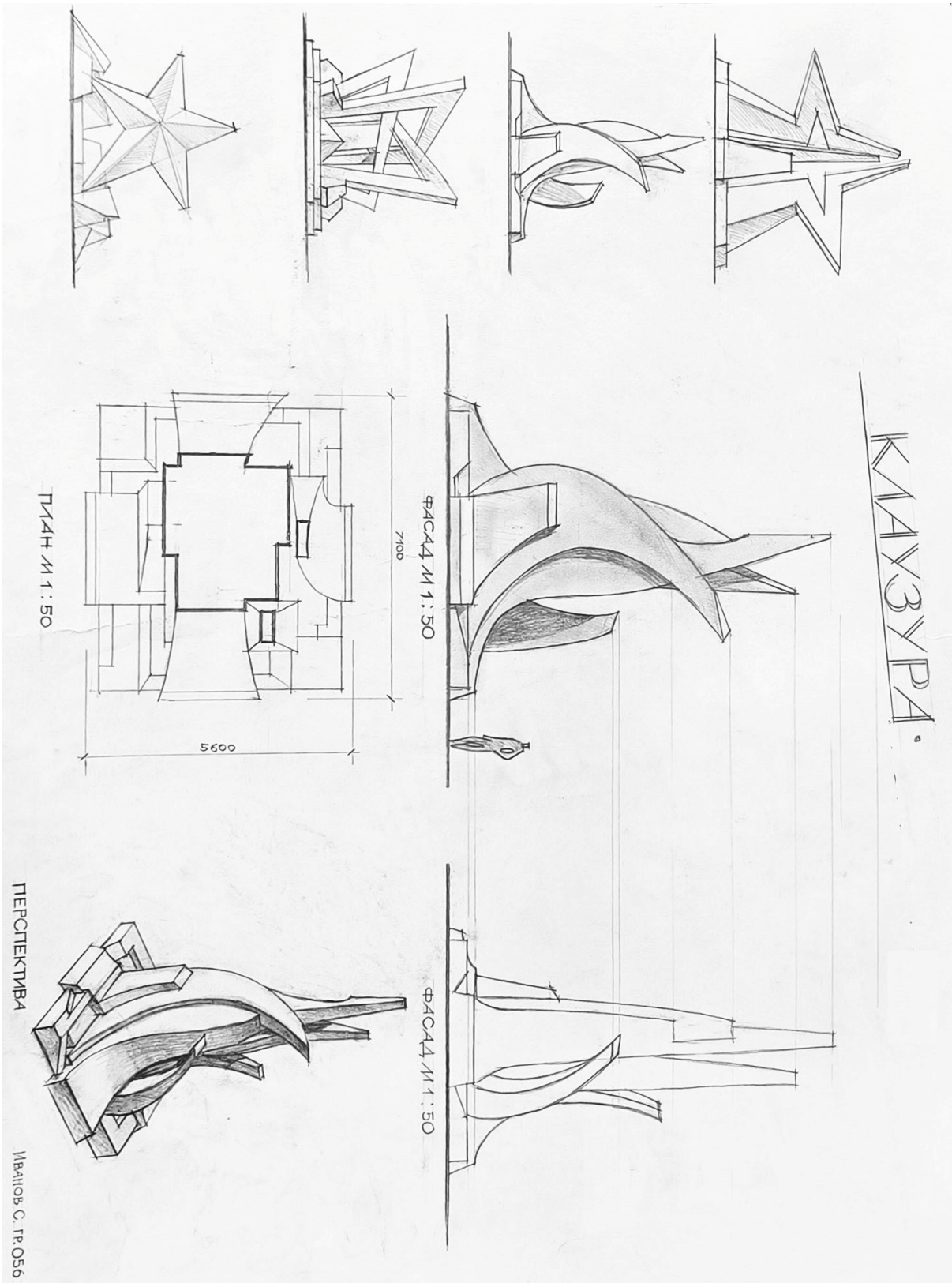


Fig. 1 Example of clausura graphic design

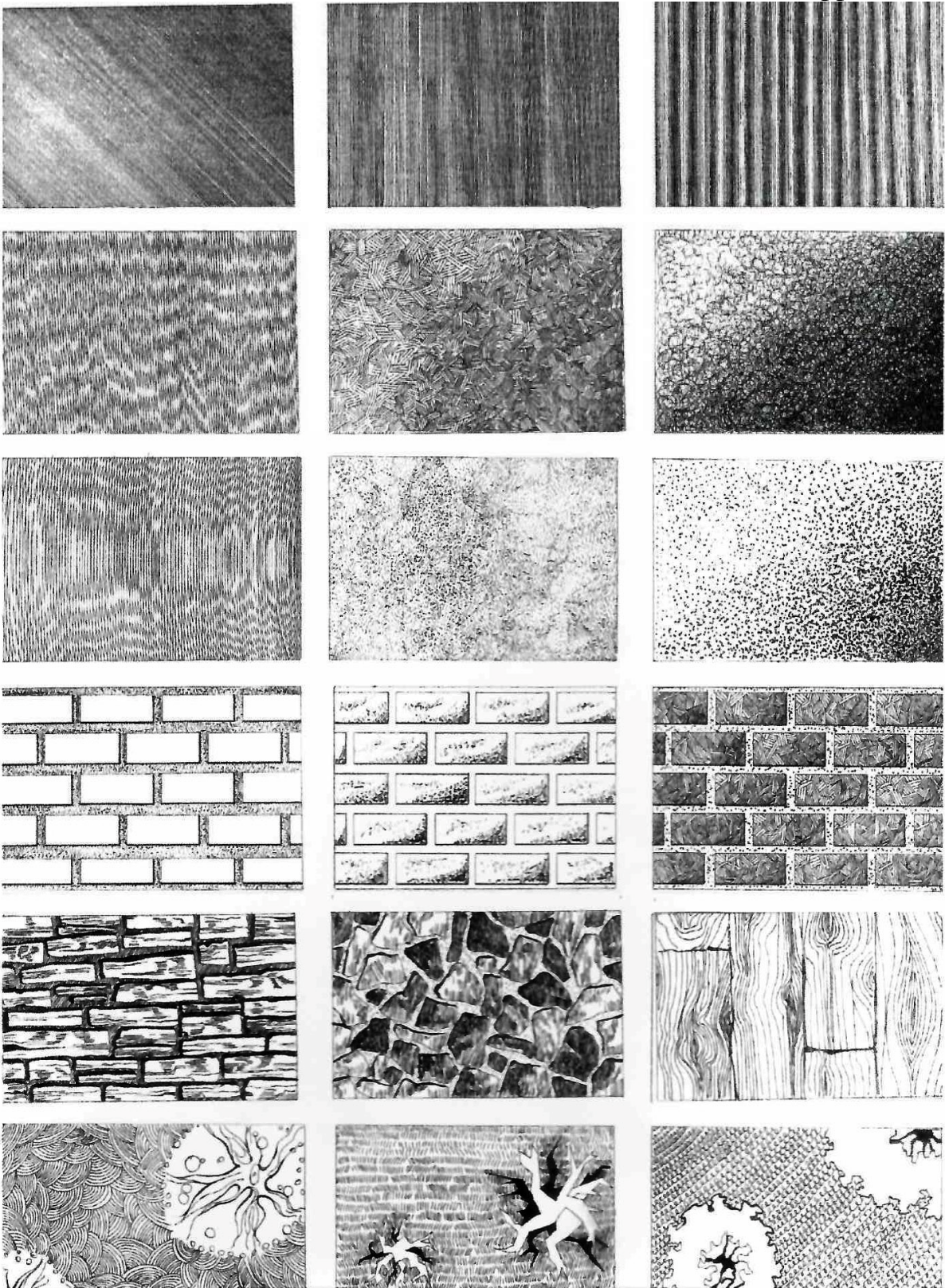


Fig. 2 Example of graphic exercise

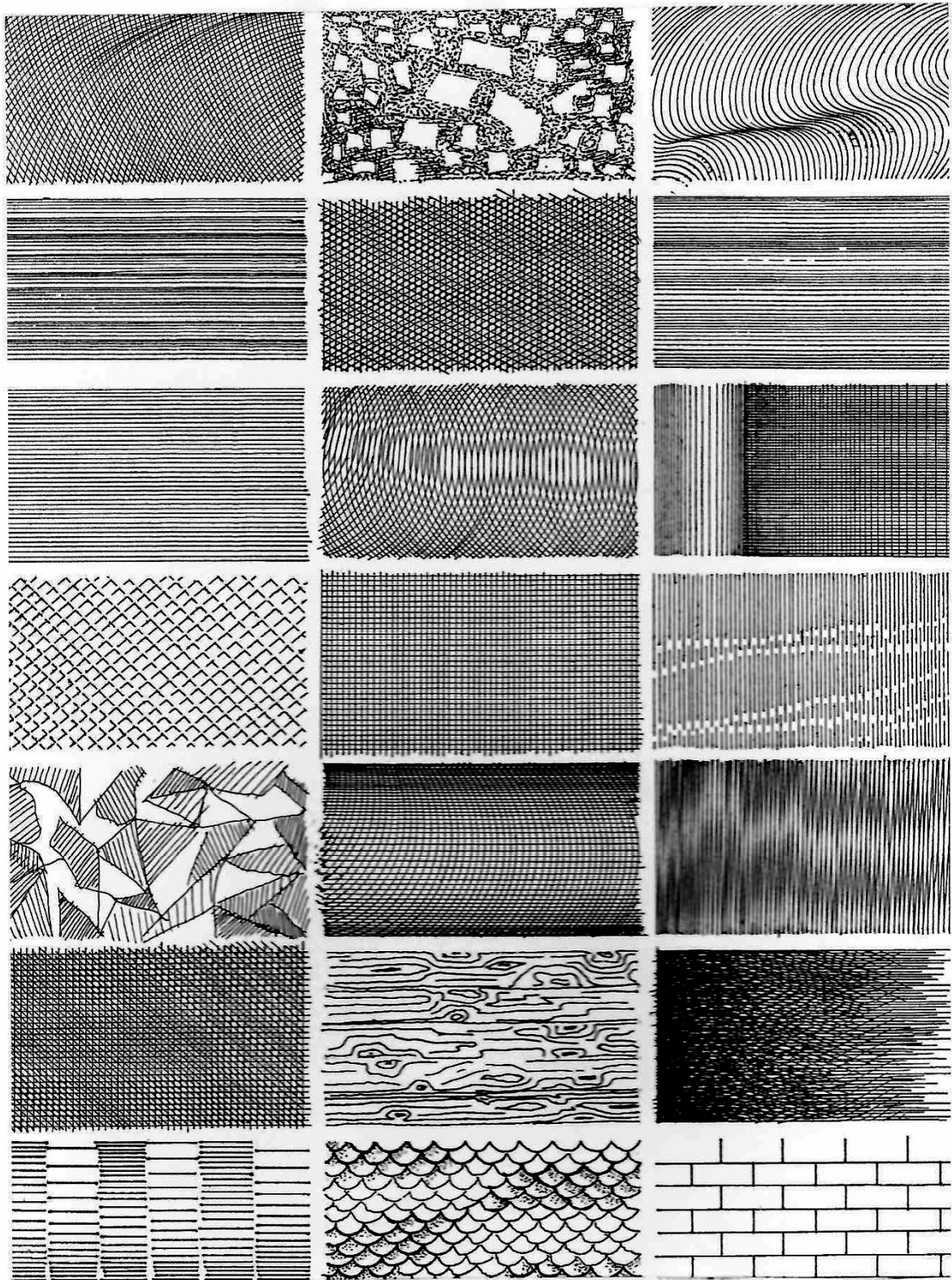


Fig. 3 Graphics techniques

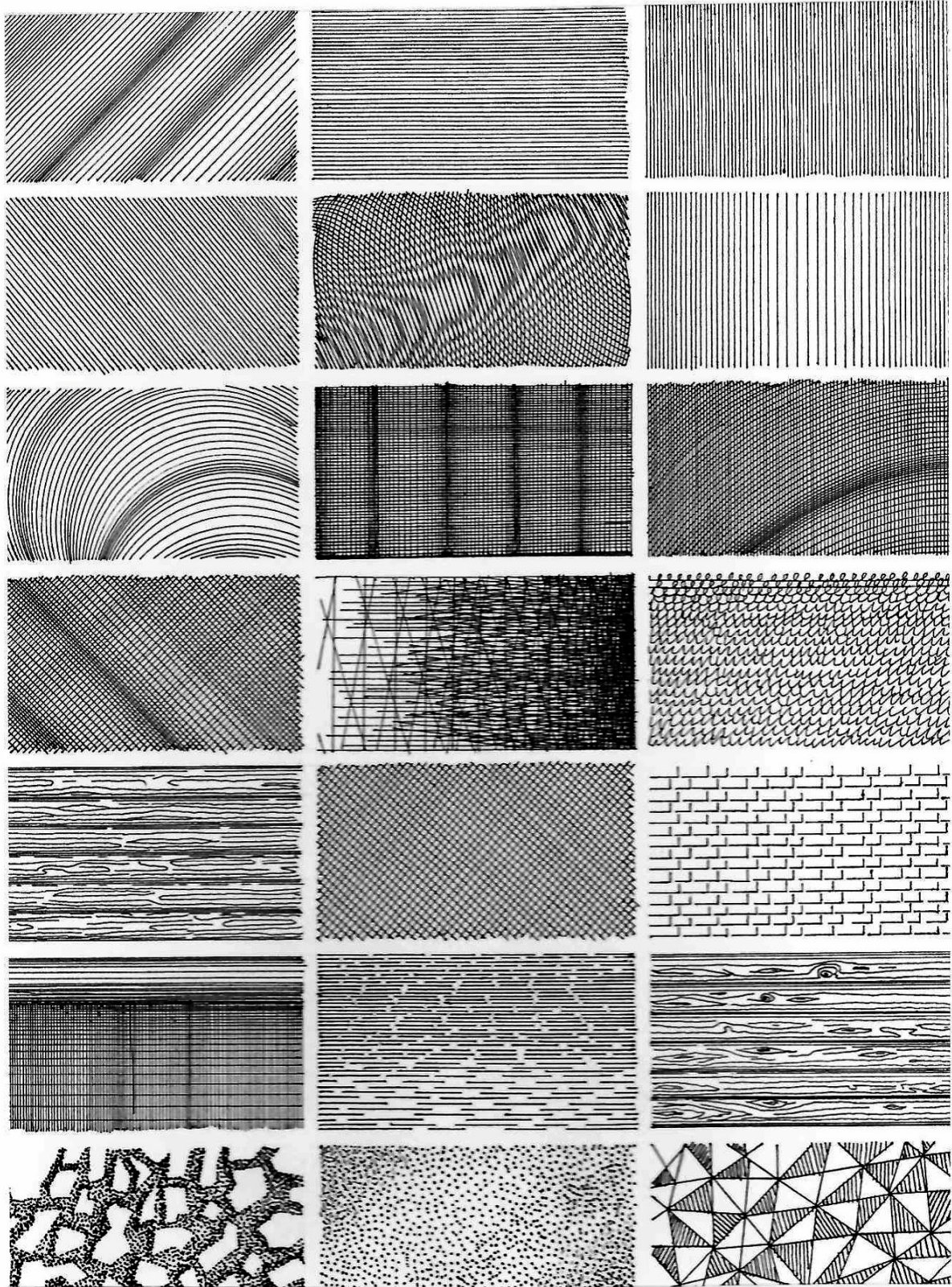


Fig. 4 Graphics techniques

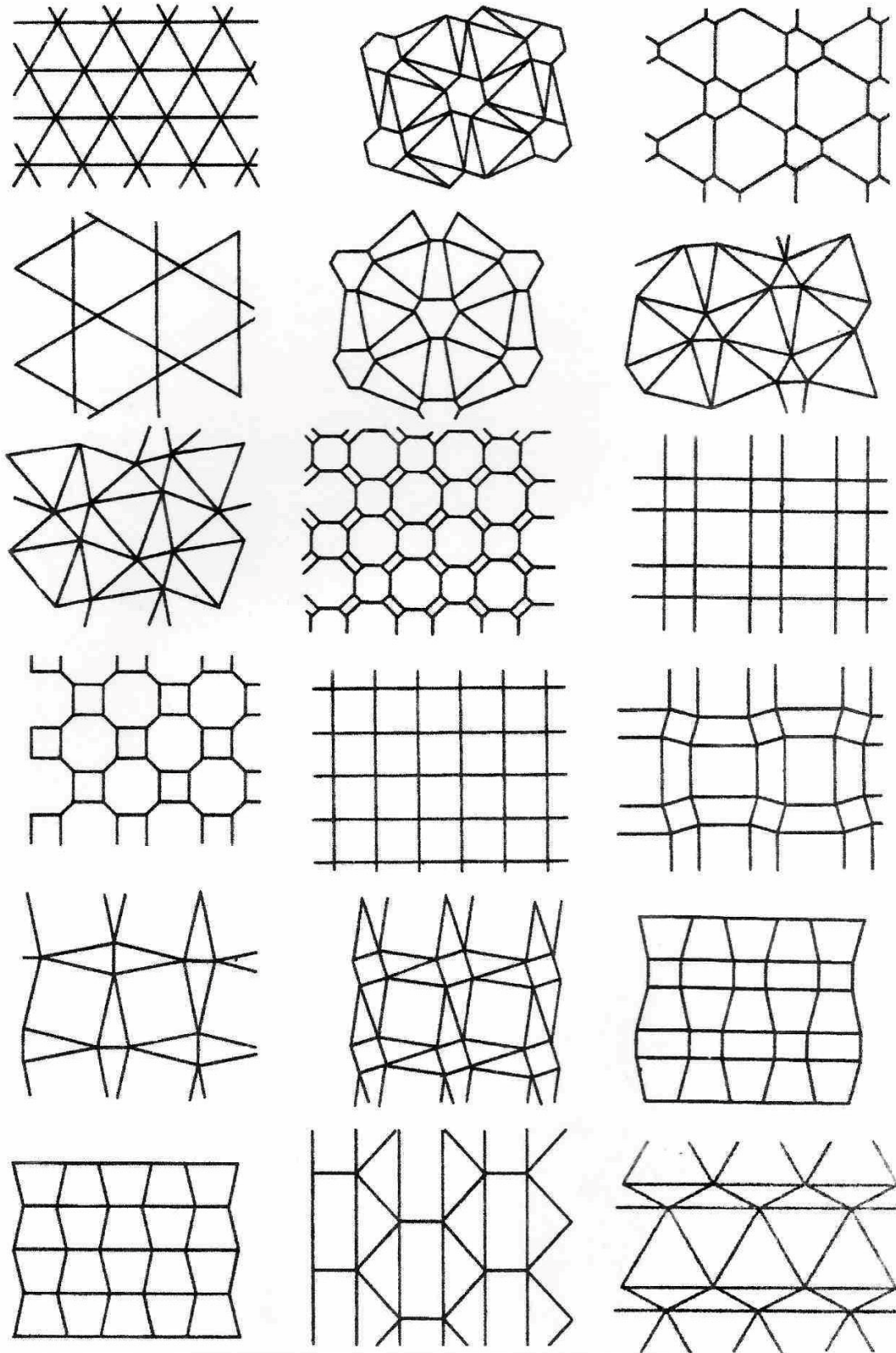


Fig. 5 Types of ornamental surface and paving

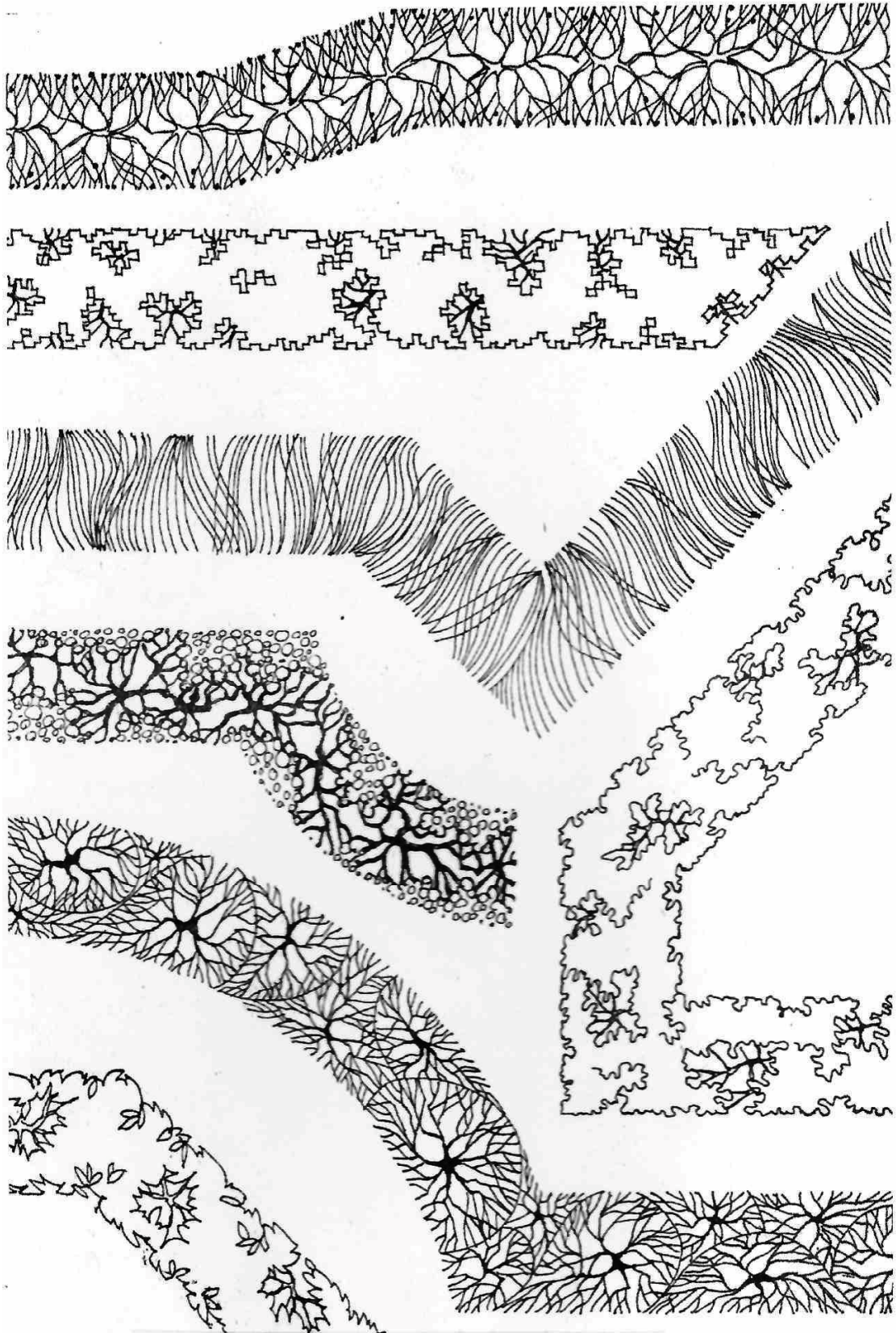


Fig. 6 Samples of surrounding area

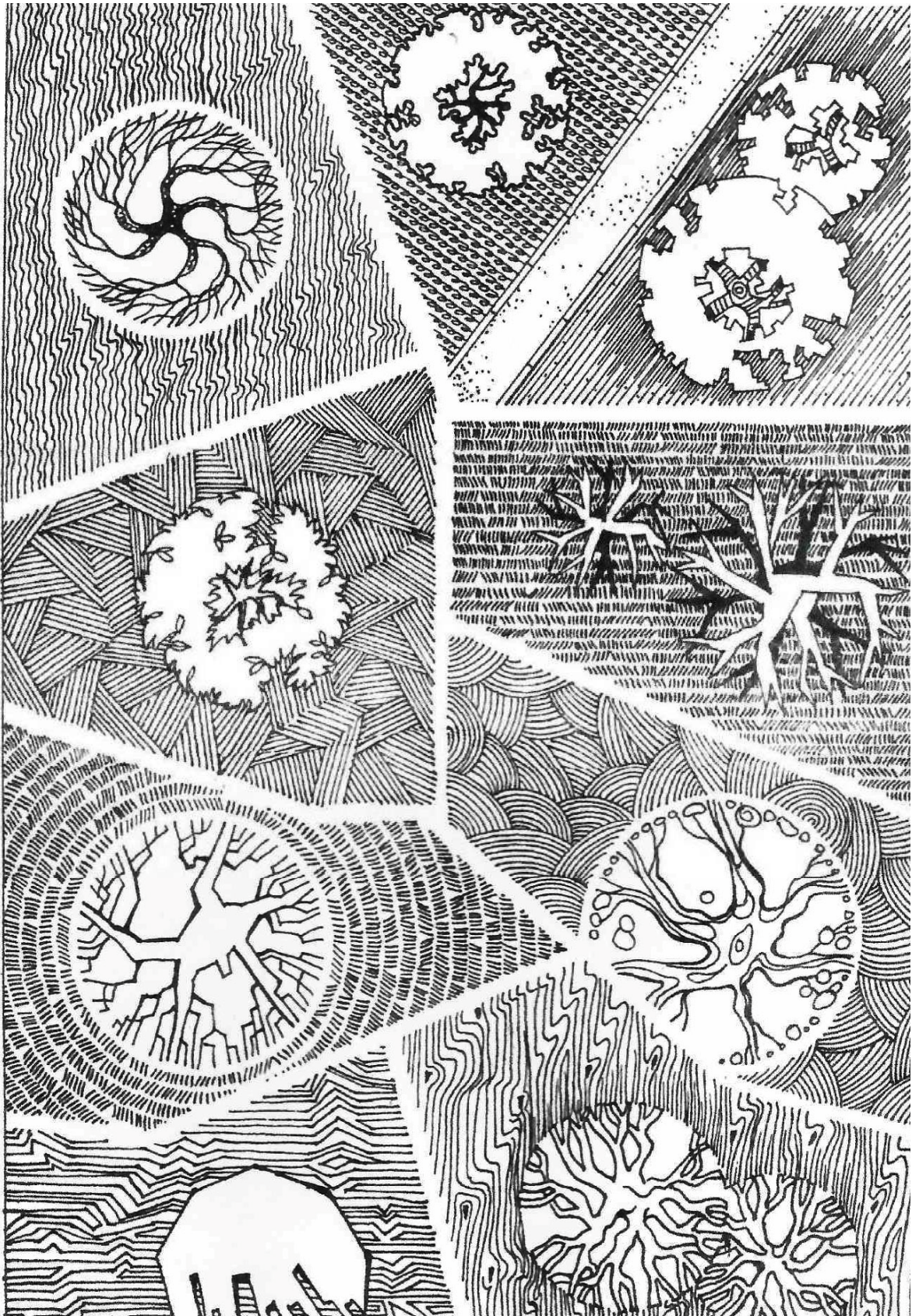


Fig. 7 Samples of surrounding area

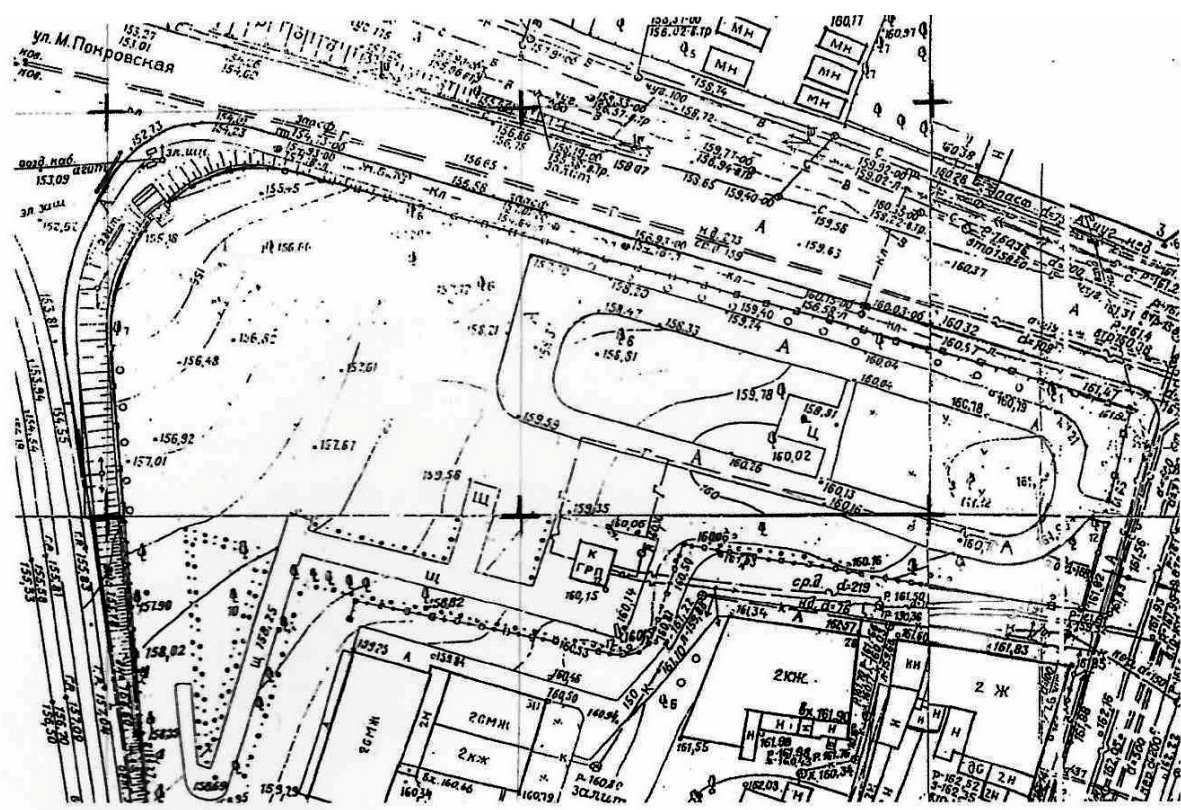


Fig. 8 A sample of a topographical basis, which is attached to the fountain designing task.

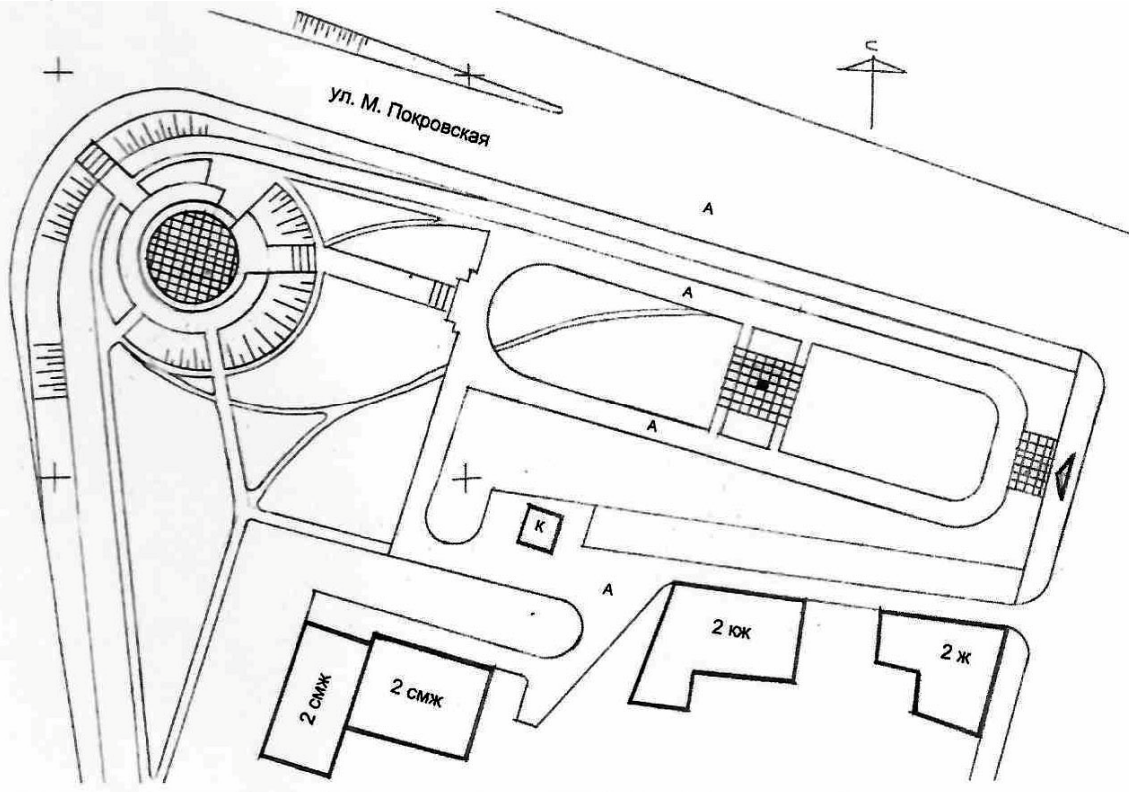


Fig. 9 Example of a site layout plan



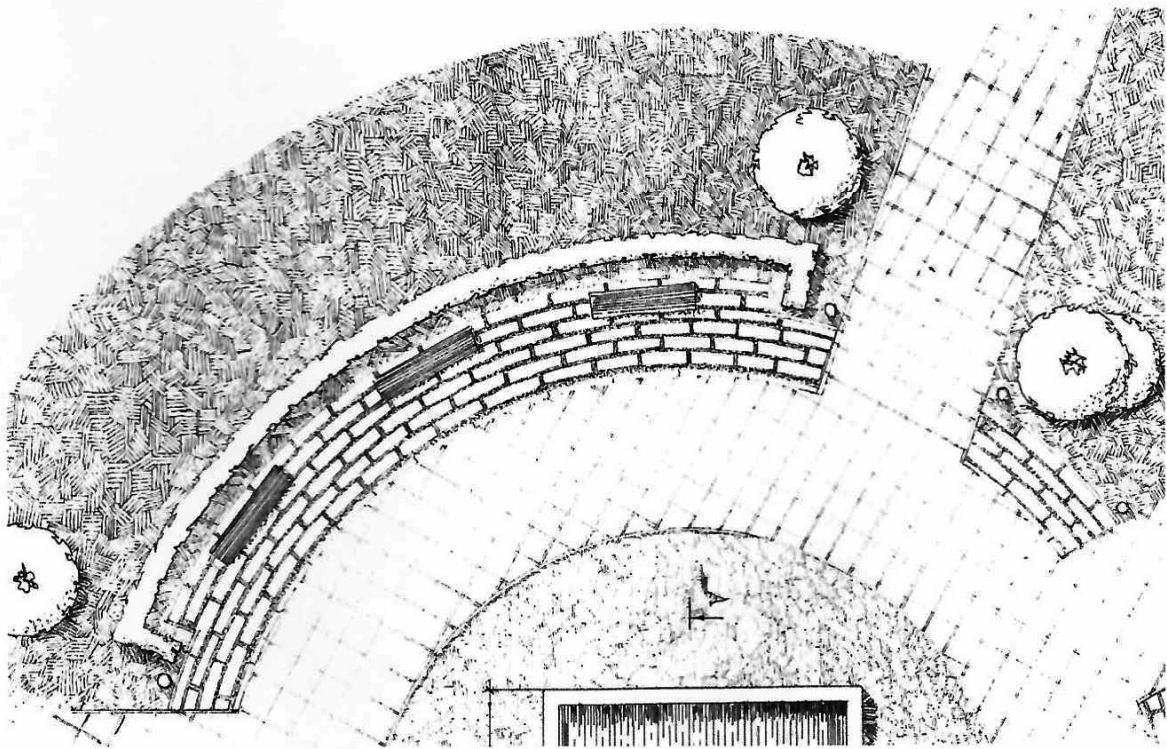
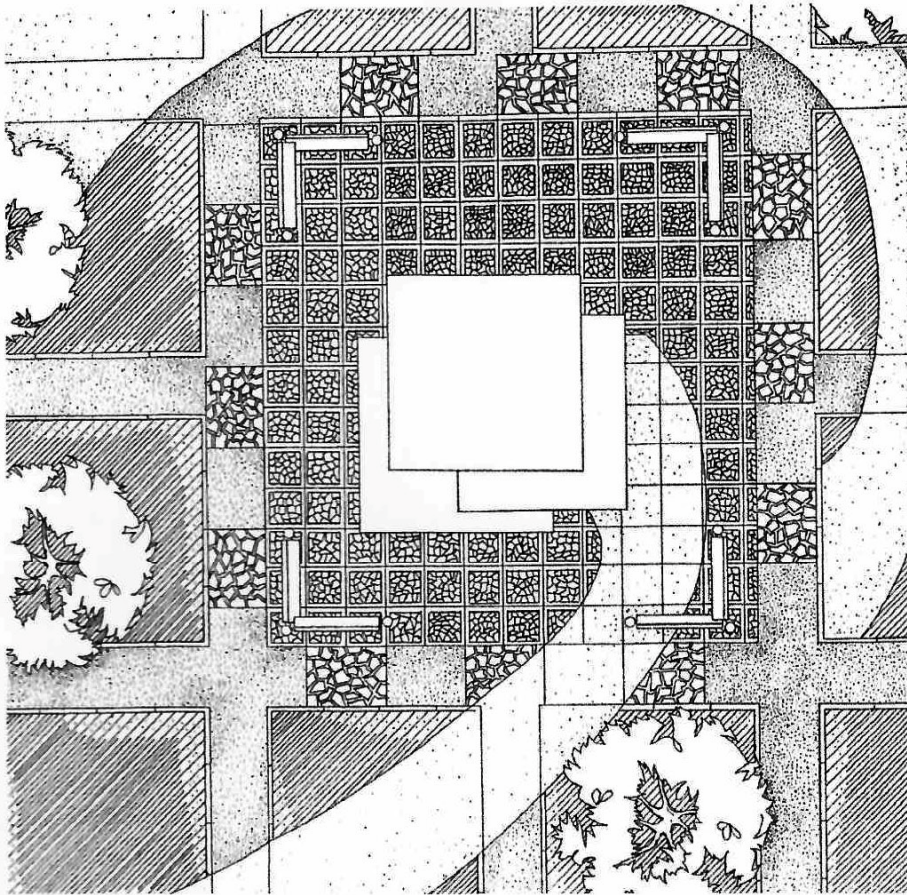


Fig. 10 Fragment of the general plan

## Appendix 7 (continuation)

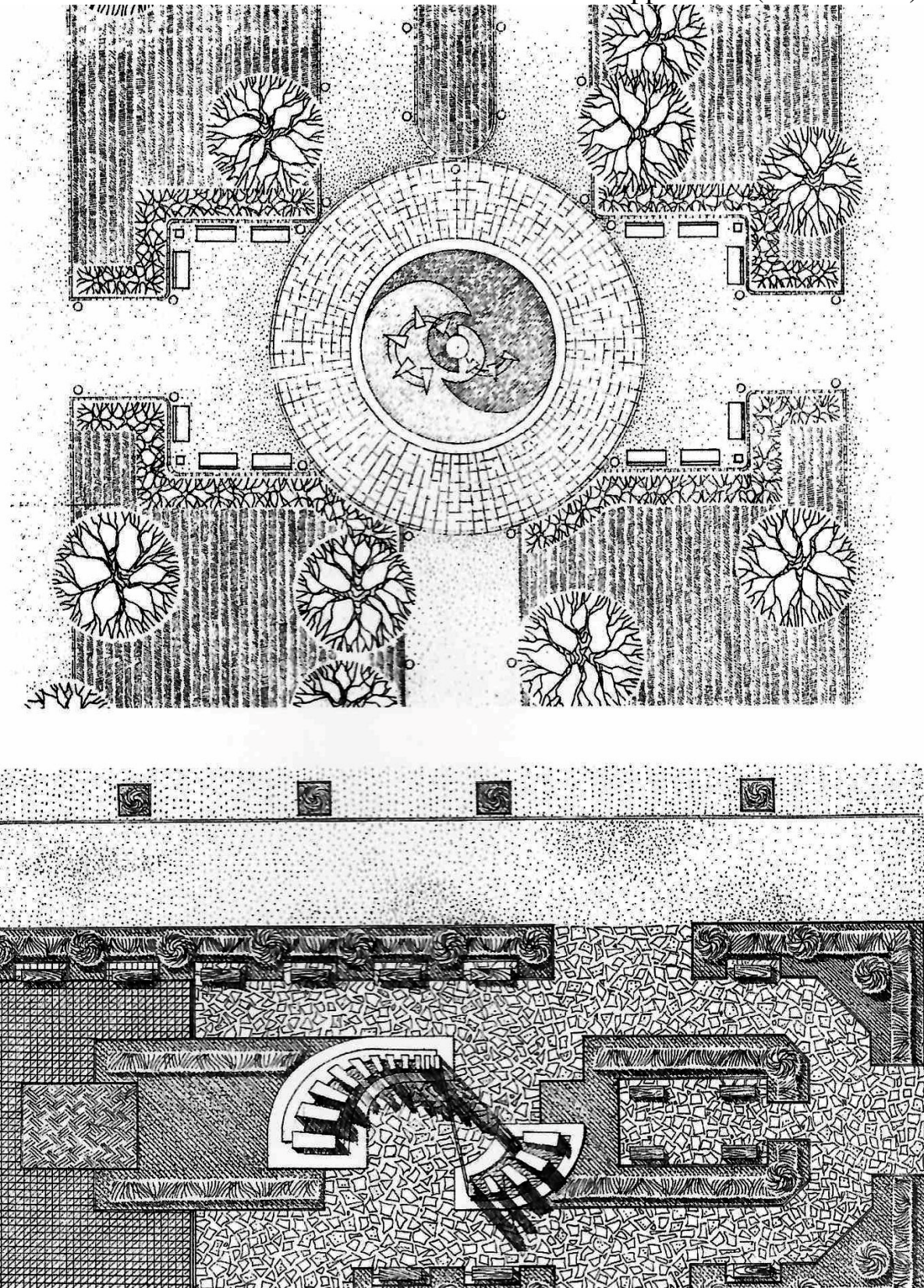


Fig. 11 Fragment of the general plan

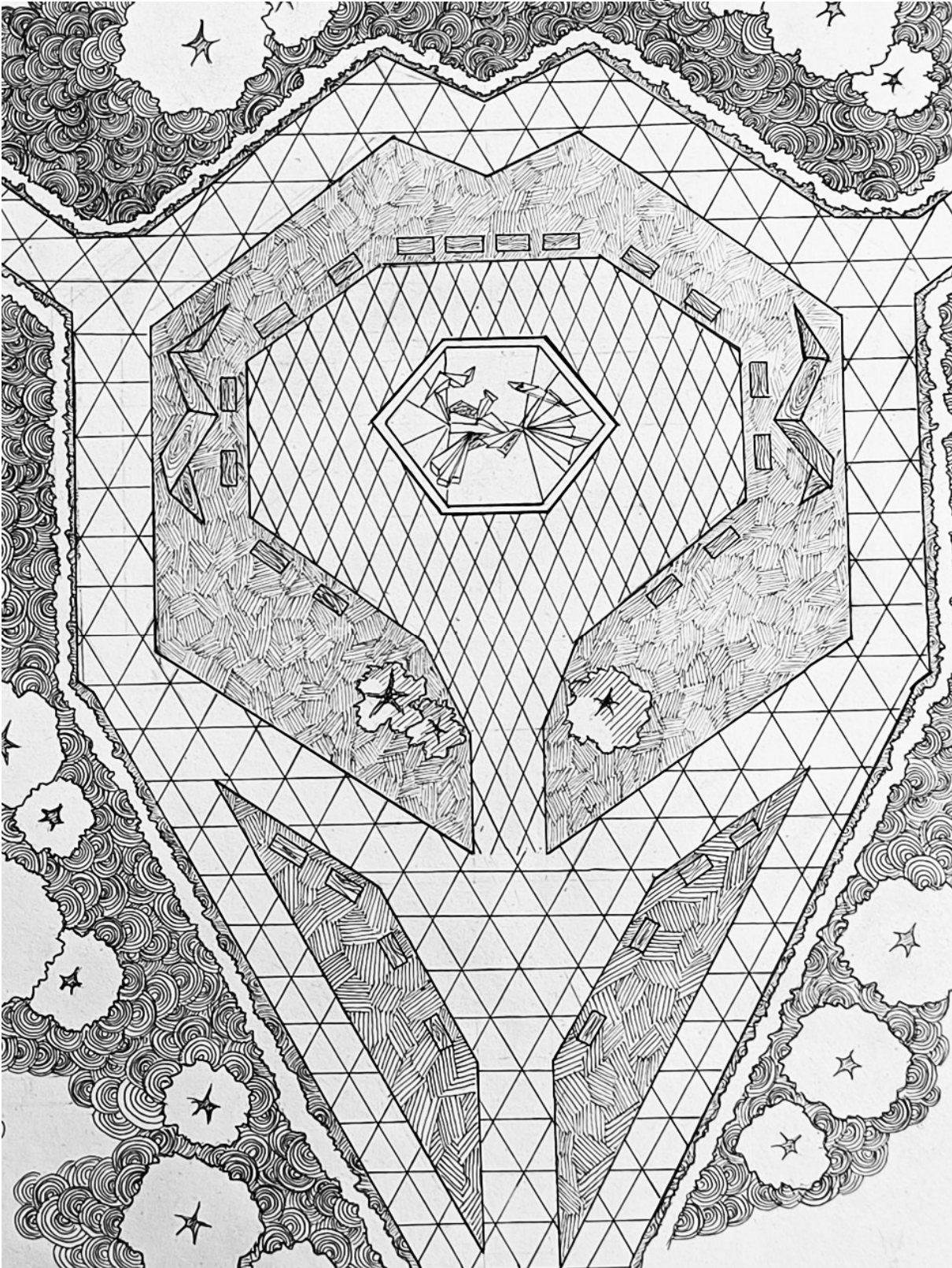


Fig. 12 Fragment of the general plan

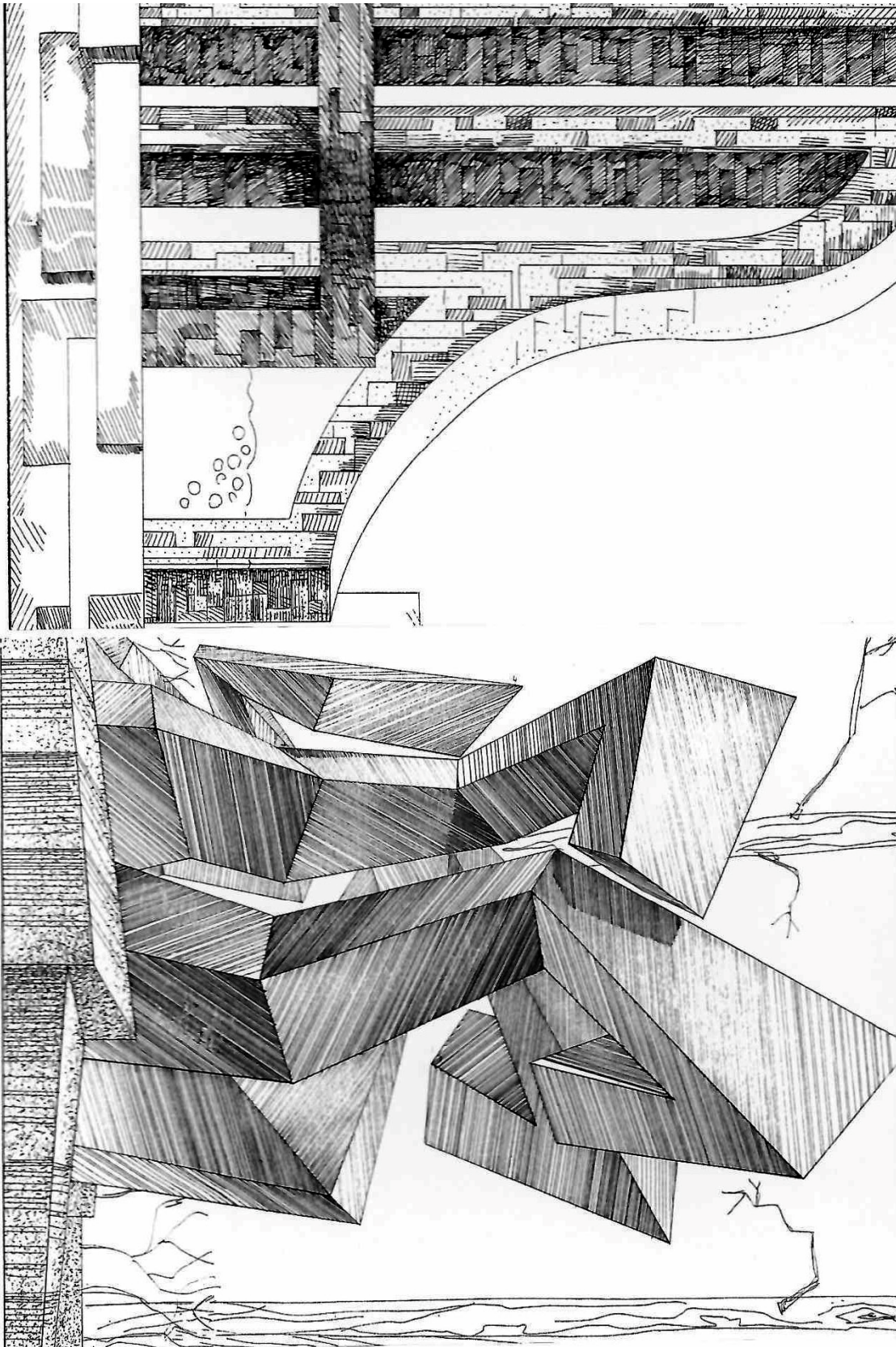


Fig. 13 Examples of graphic representations of facades

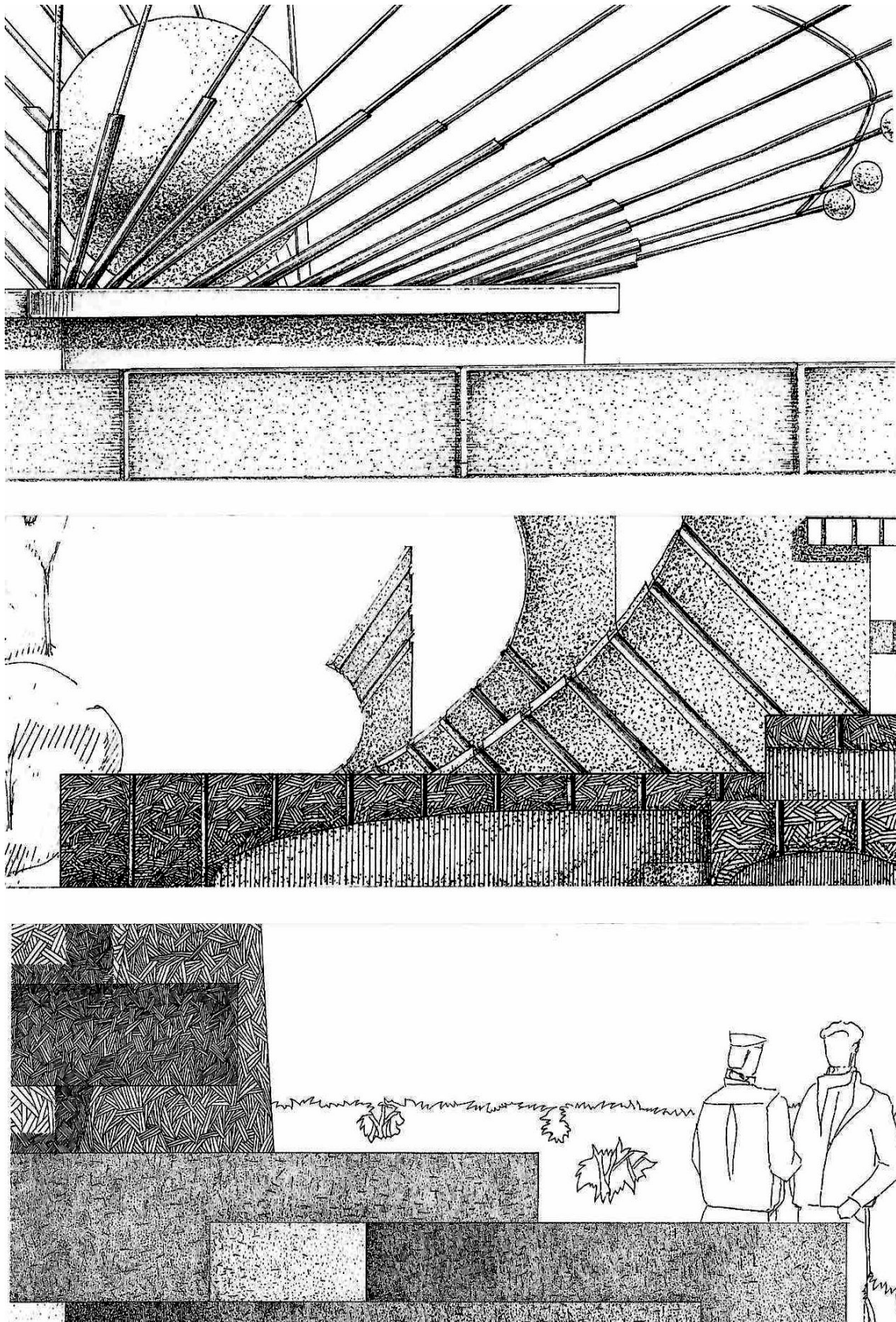


Fig. 14 Examples of graphic representations of facades

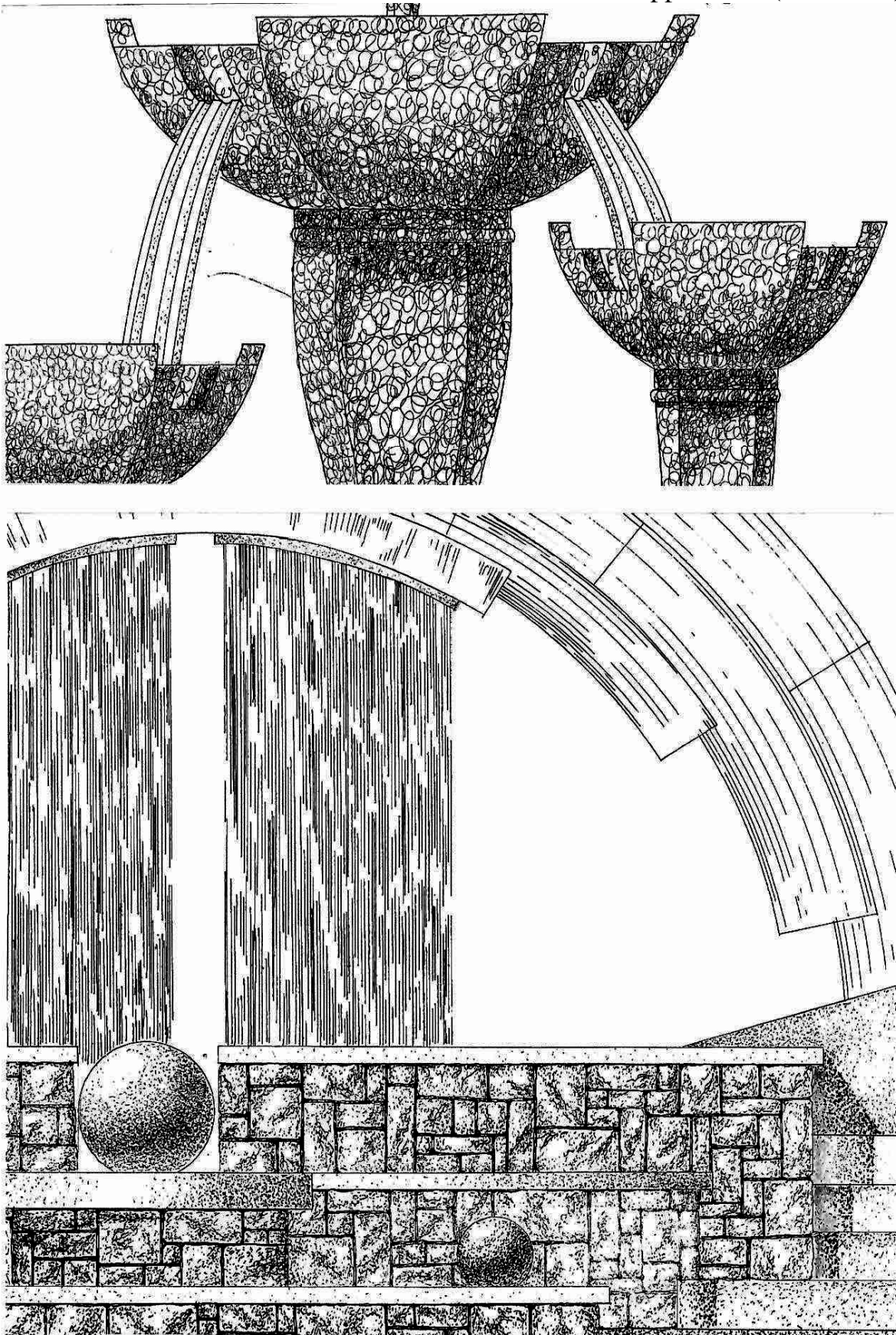


Fig. 15 Examples of graphic representations of facades

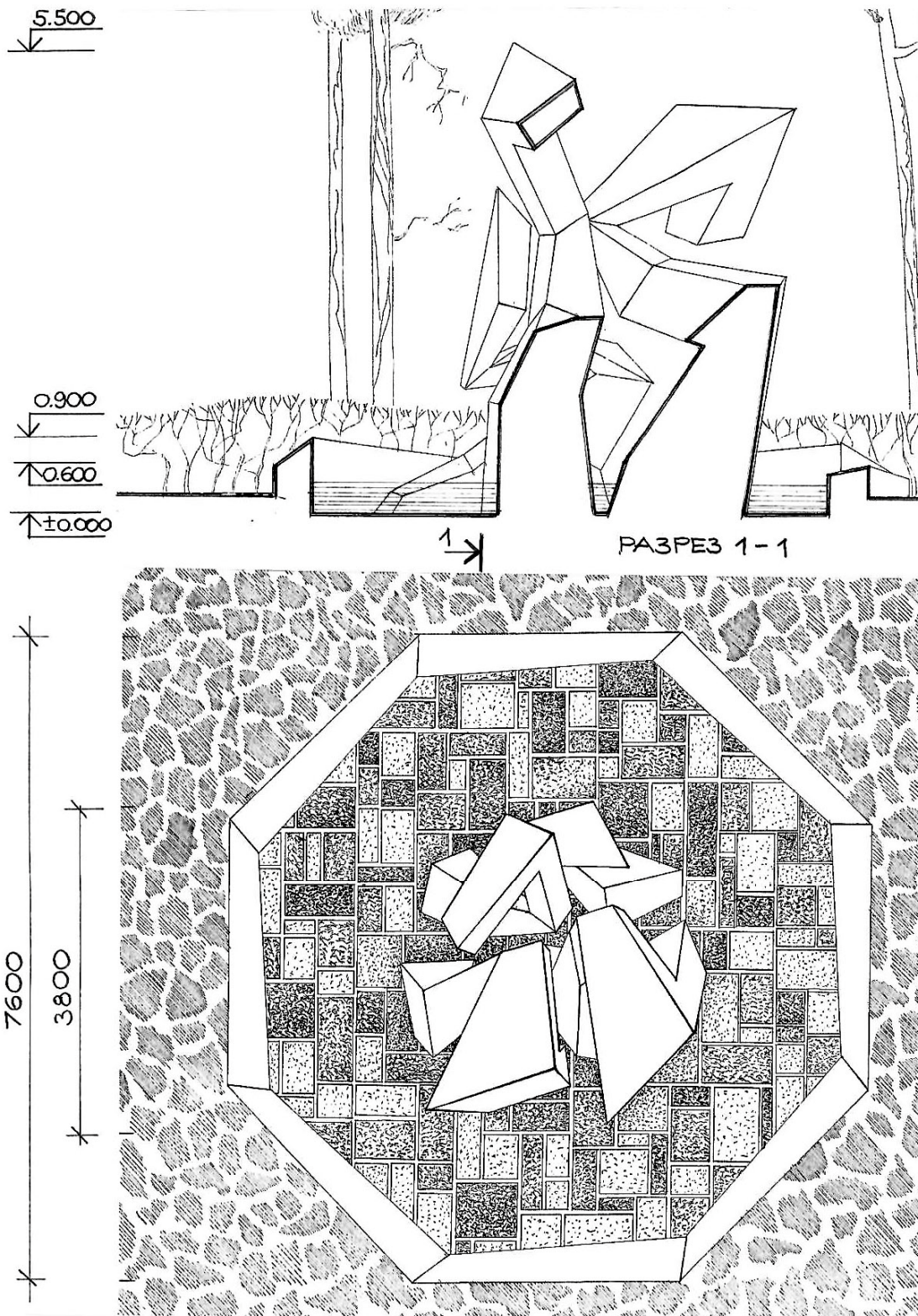


Fig. 16 Examples of graphic representation of the plan and architectural section

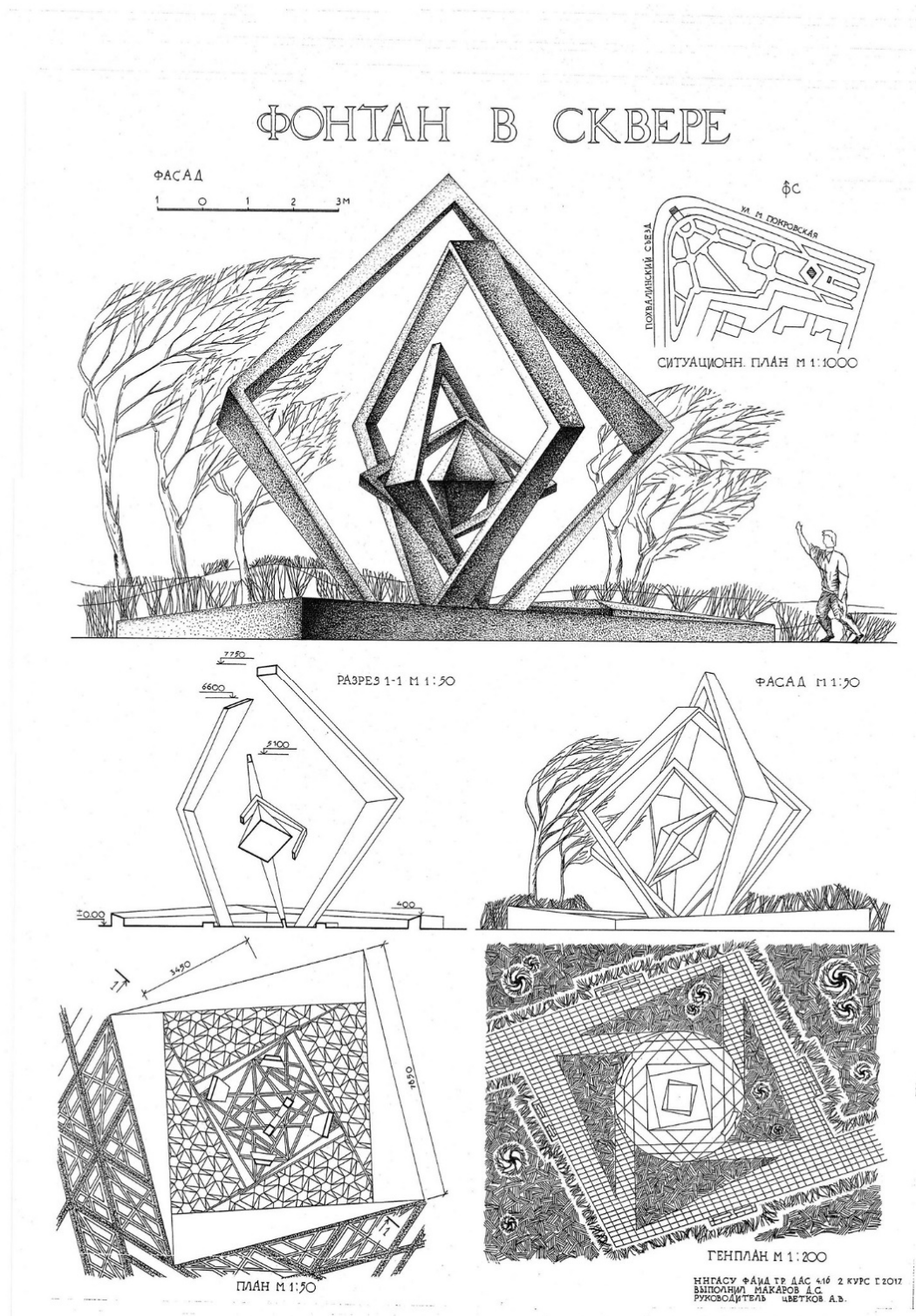


Fig. 17 Examples of works using concentric composition



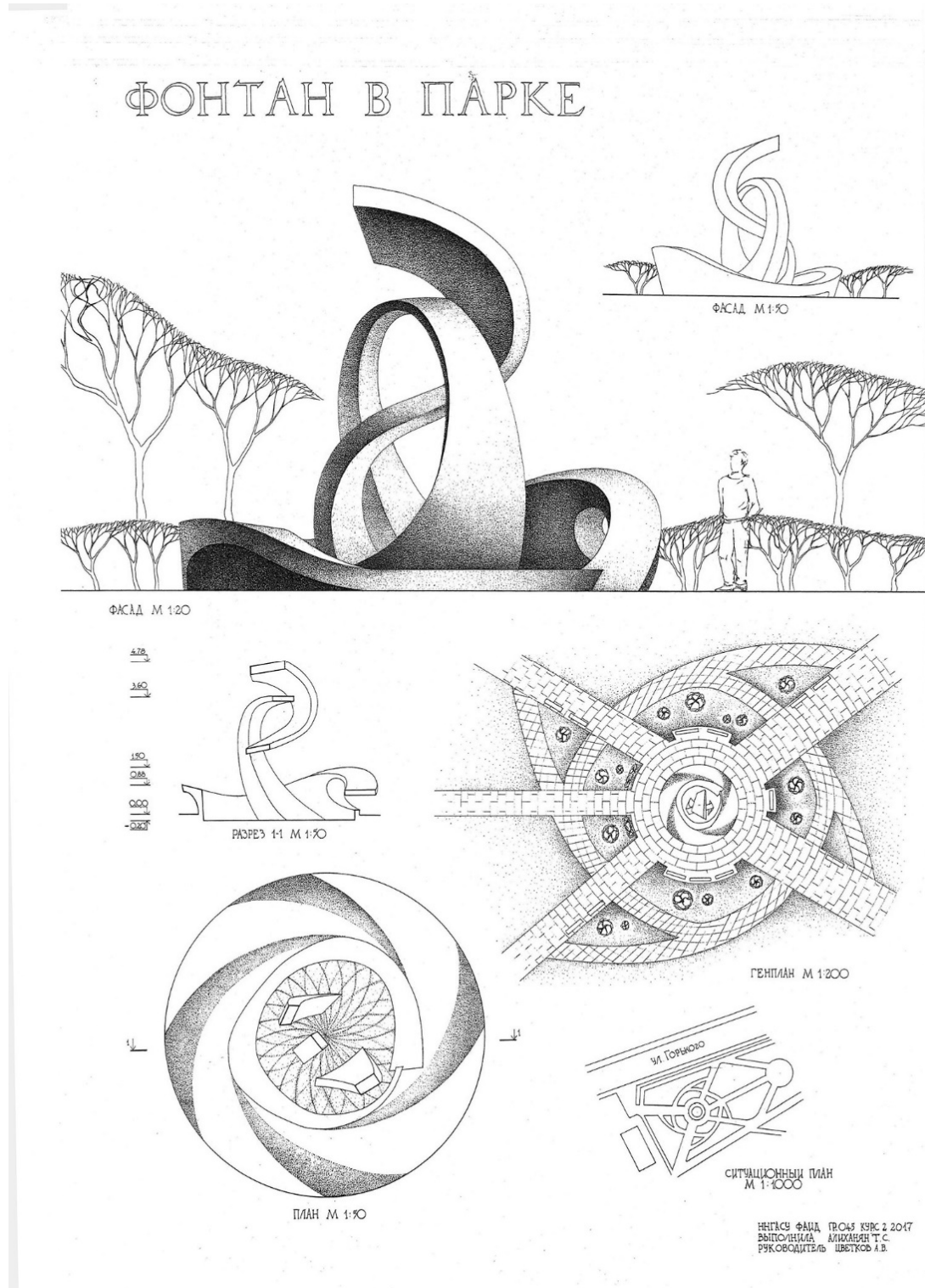


Fig. 18 Examples of works using concentric composition

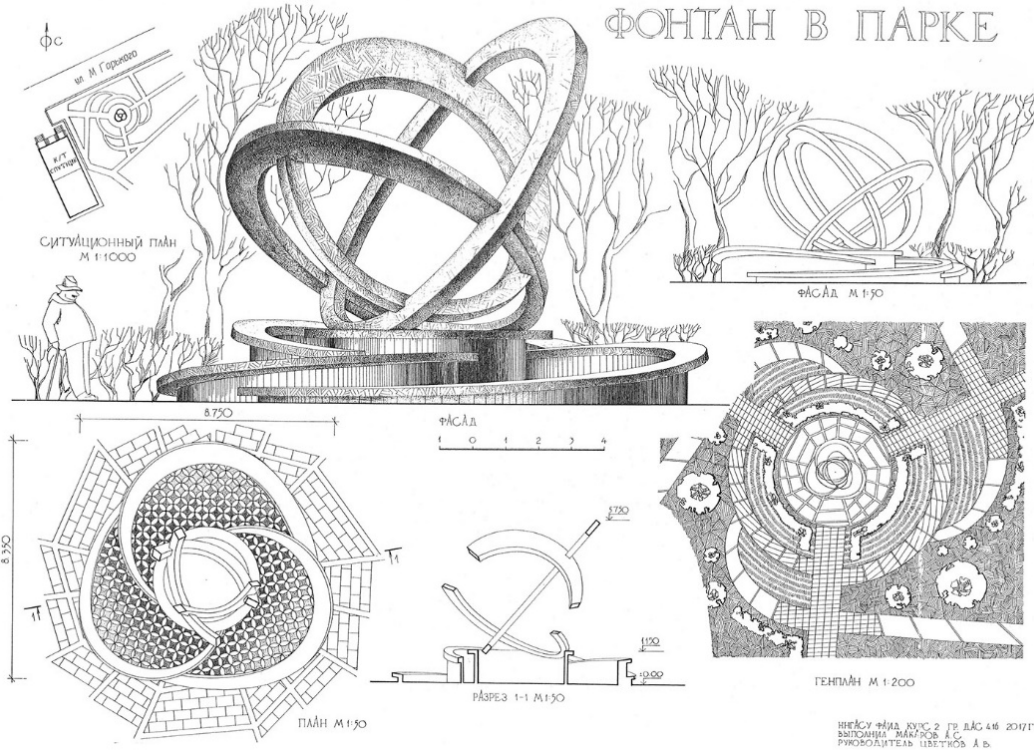


Fig. 19 Examples of works using concentric composition

Appendix 11

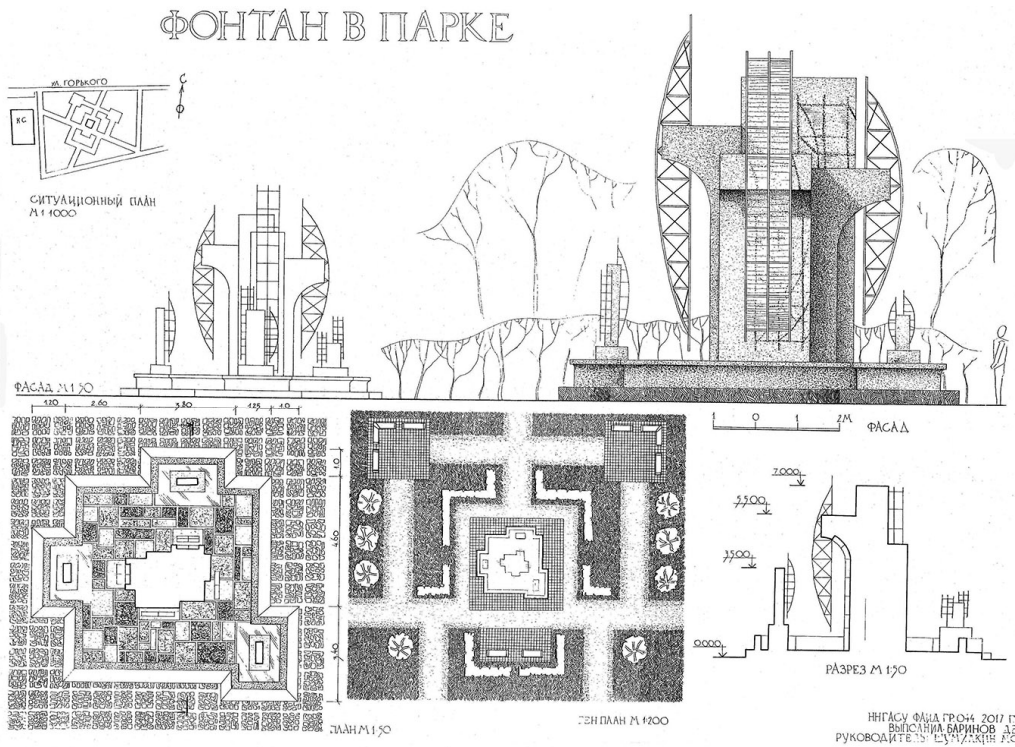


Fig. 20 Examples of works using sector compositions

Appendix 12

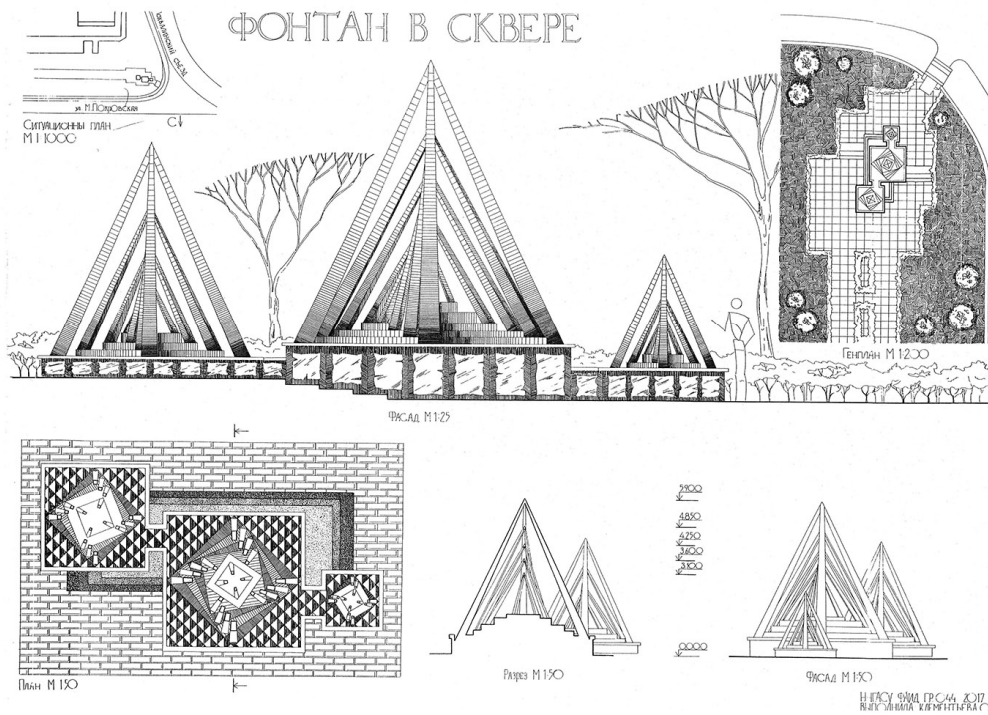


Fig. 21 Examples of work using multicentric composition

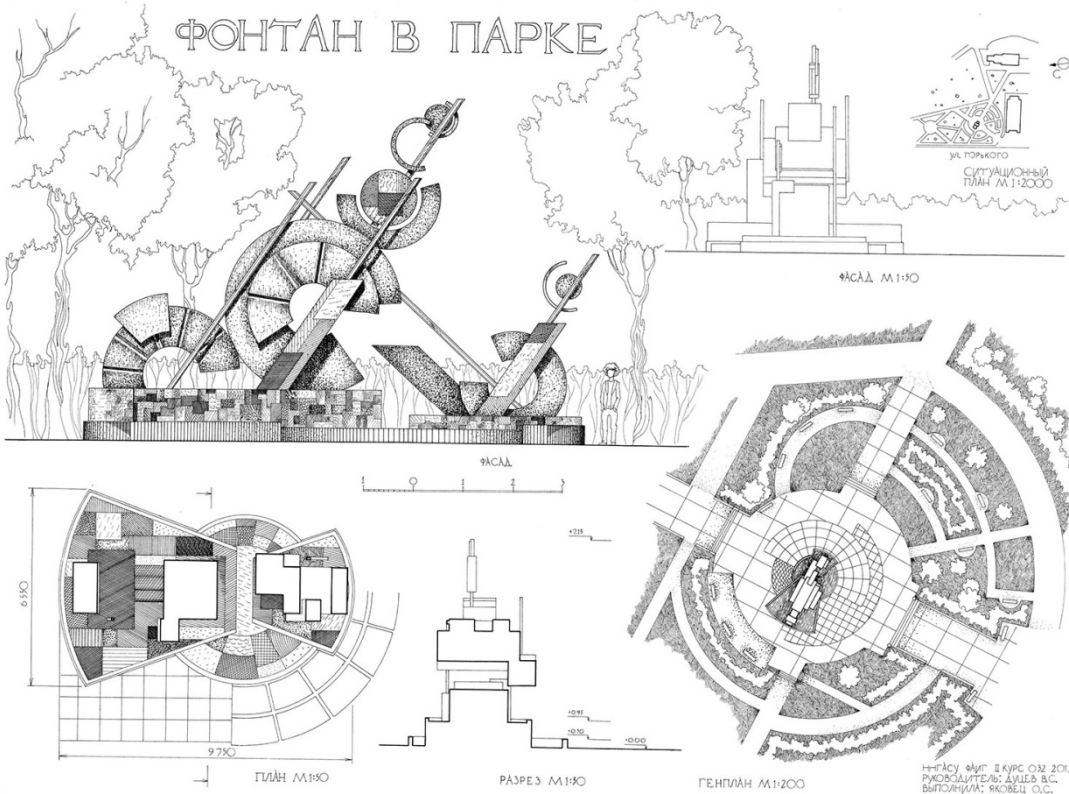


Fig. 22 Examples of work using multicentric composition

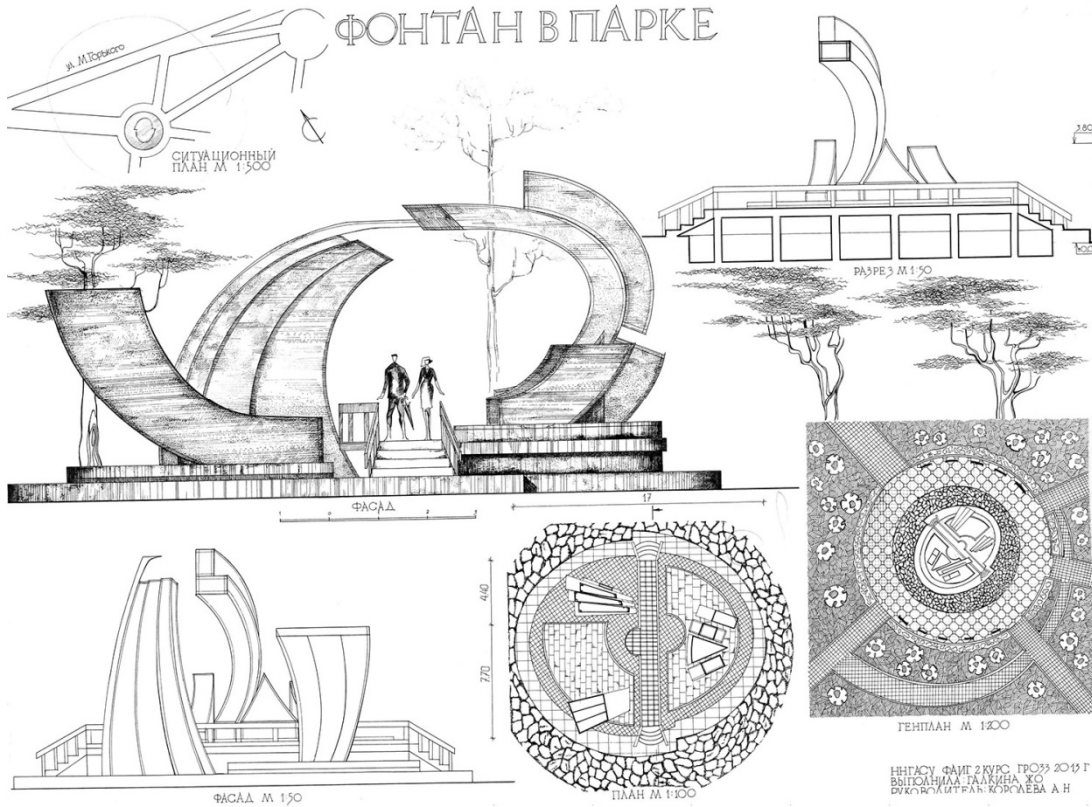


Fig. 23 Examples of work using multicentric composition

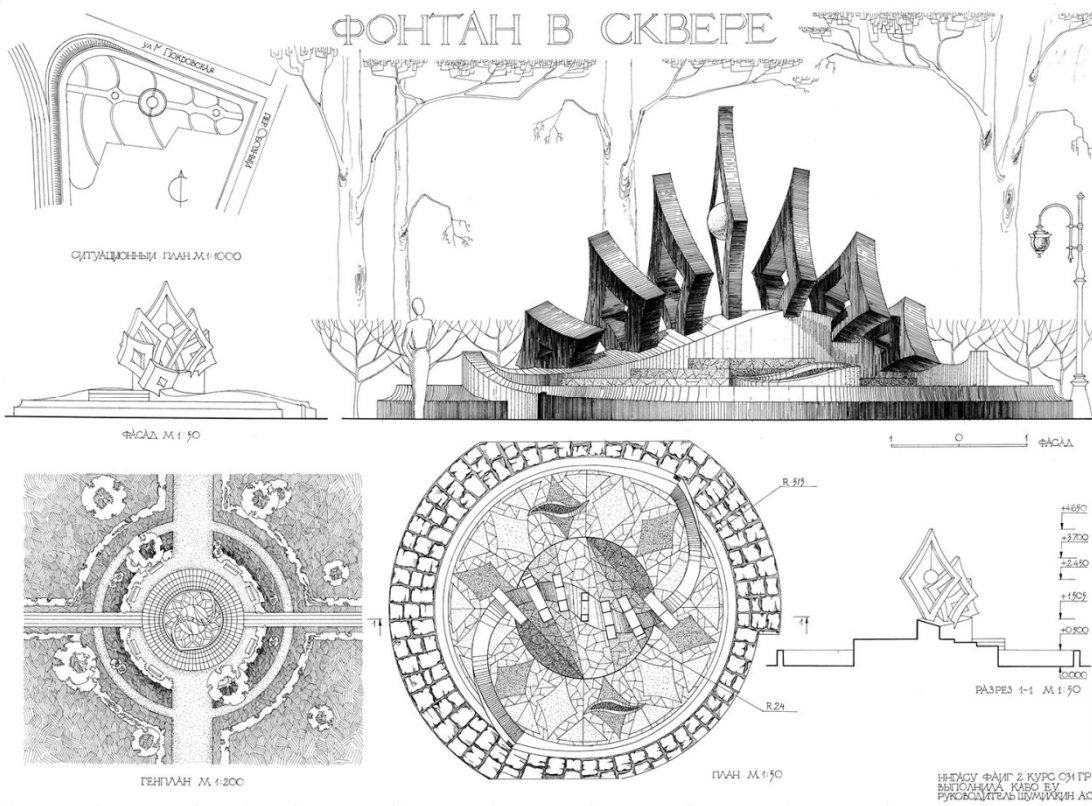


Fig. 24 Examples of work using multicentric composition

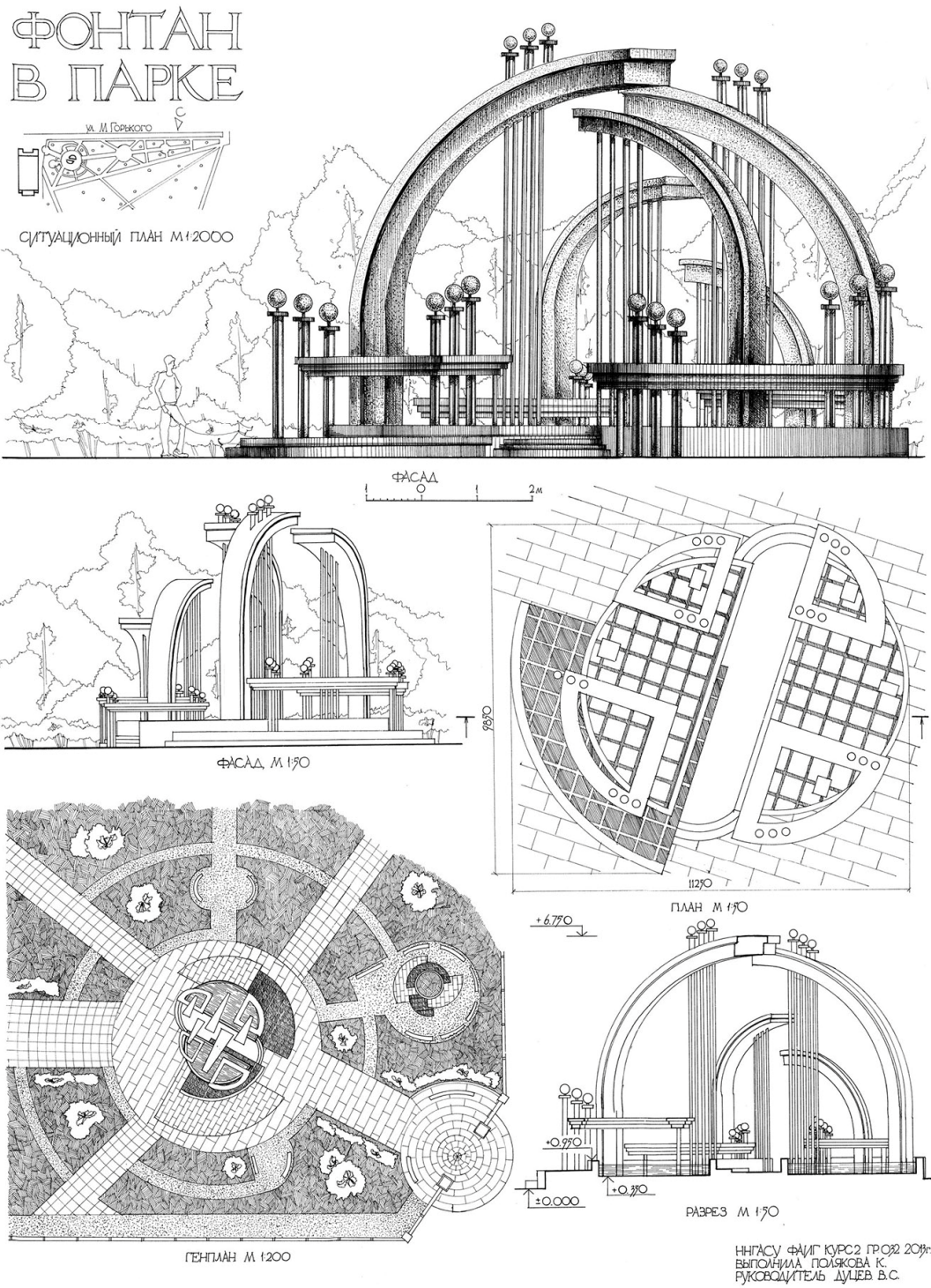


Fig. 25 Fountain. Training project

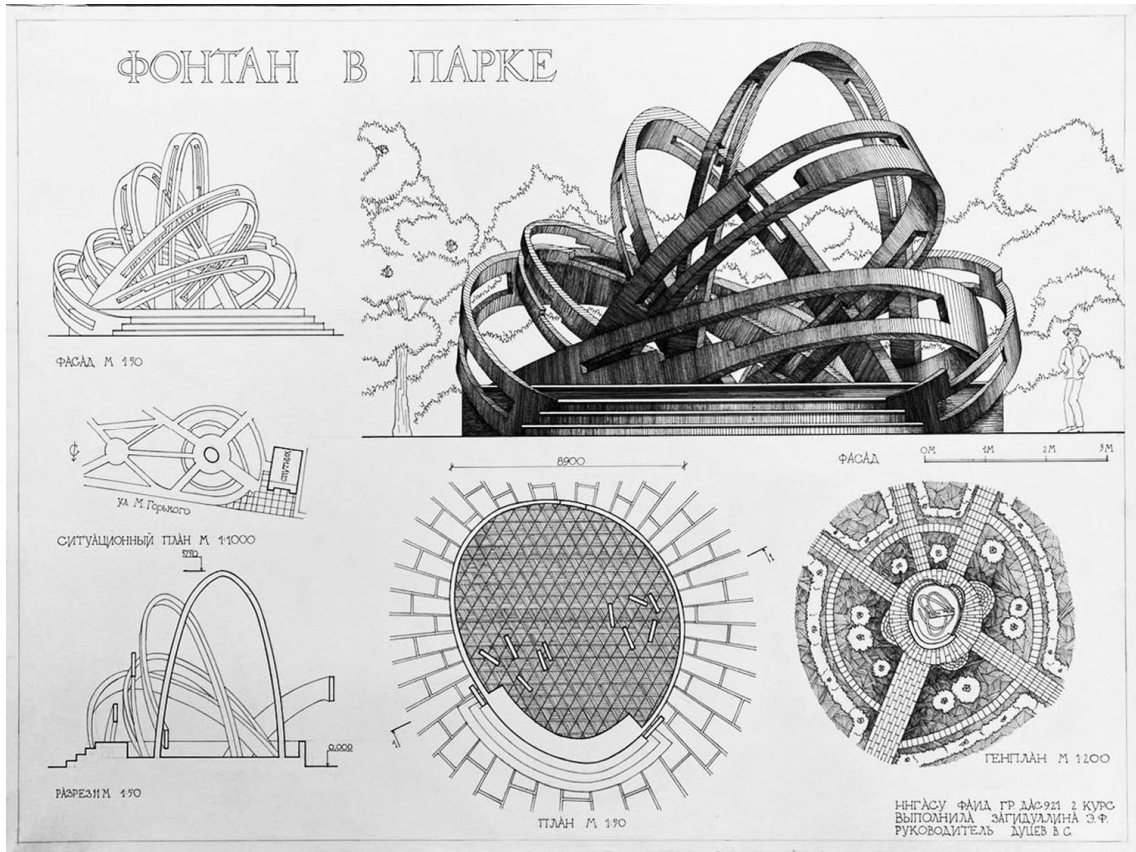


Fig. 26 Fountain. Training project

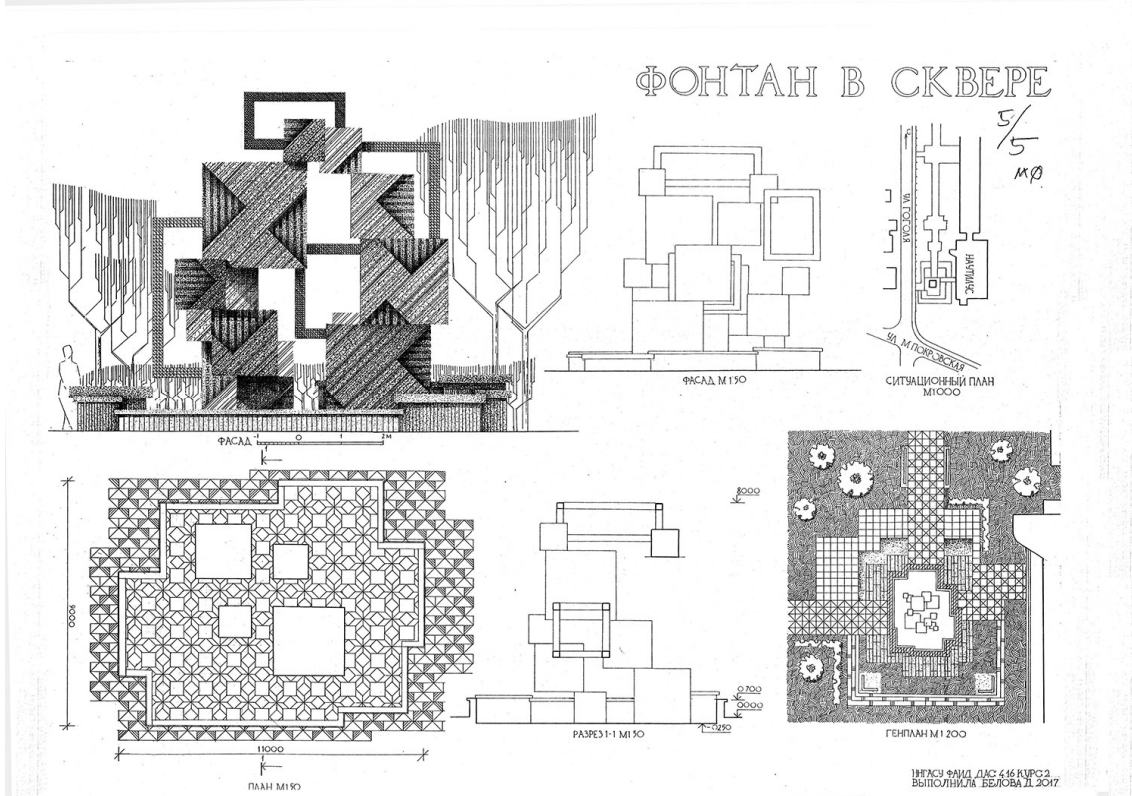


Fig. 27 Fountain. Training project

Appendix 13 (continued)

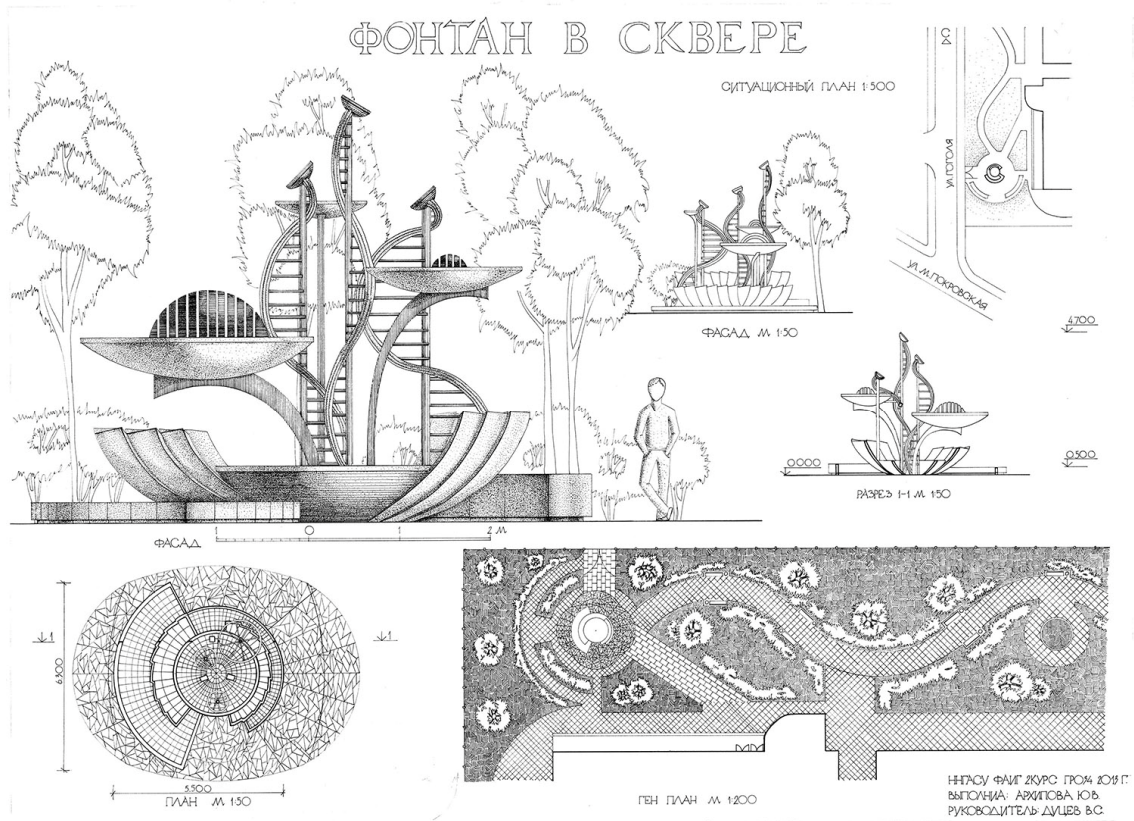


Fig. 28 Fountain. Training project

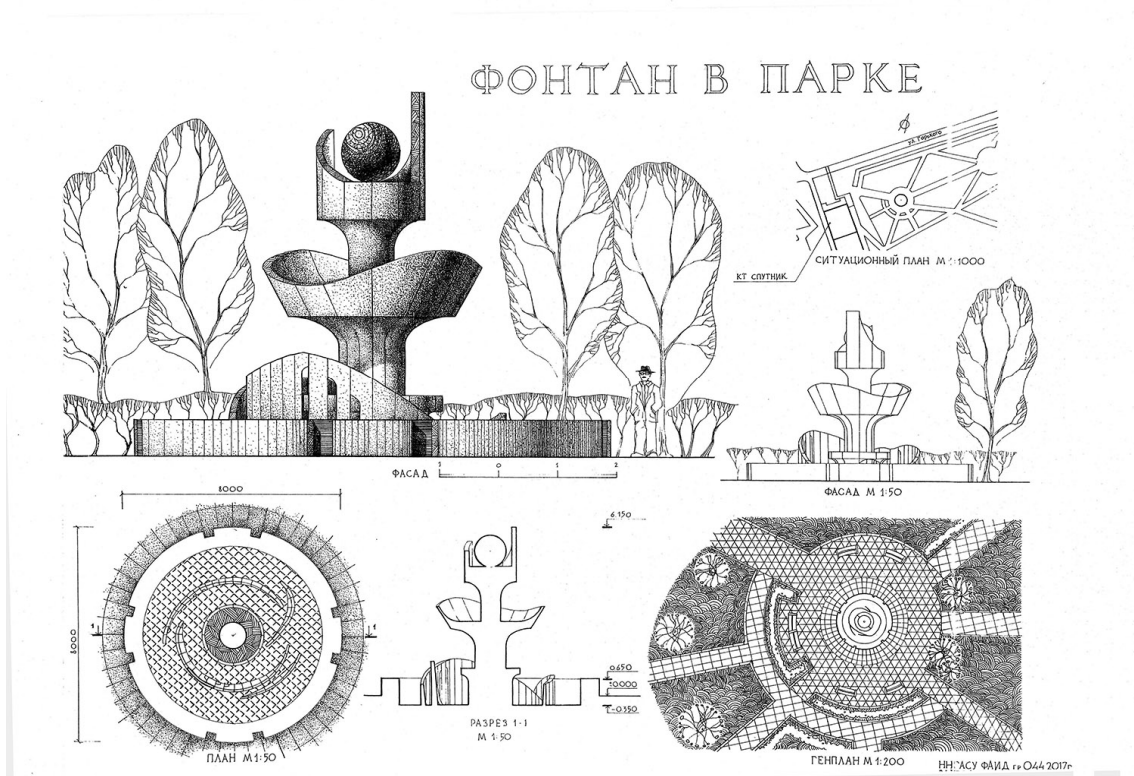


Fig. 29 Fountain. Training project

Appendix 13 (continued)

ФОНТАН В ПАРКЕ

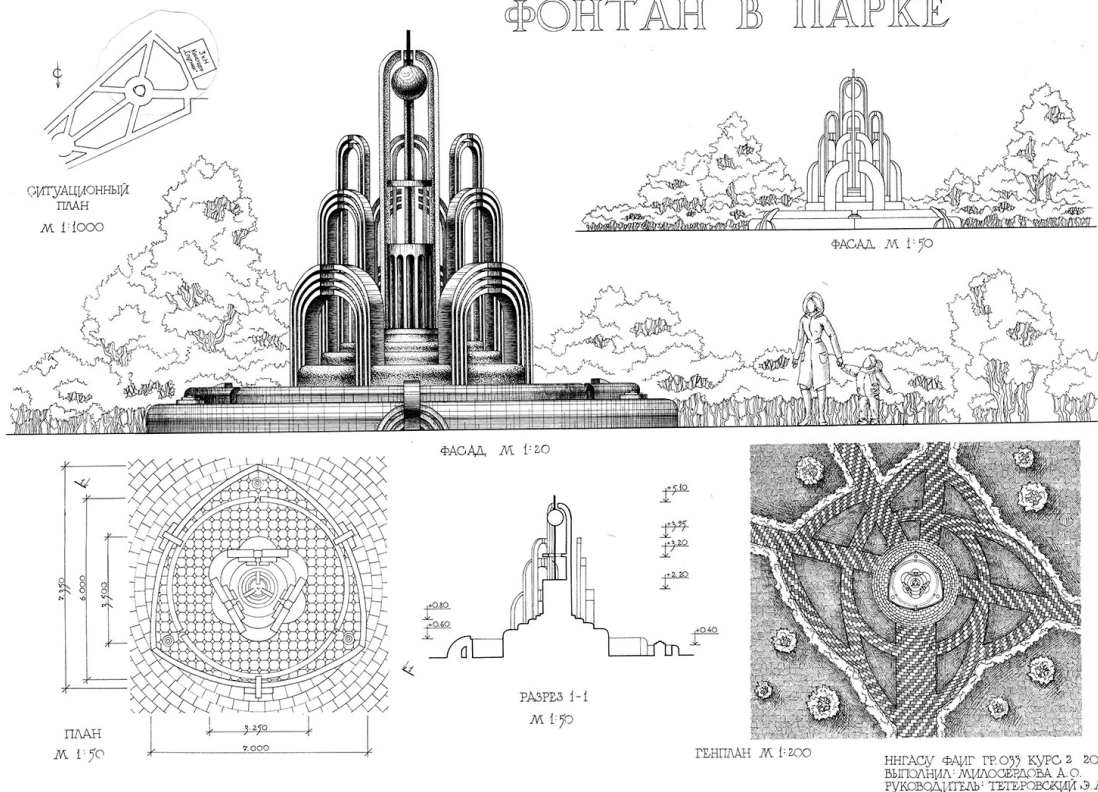


Fig. 30 Fountain. Training project

ФОНТАН В СКВЕРЕ

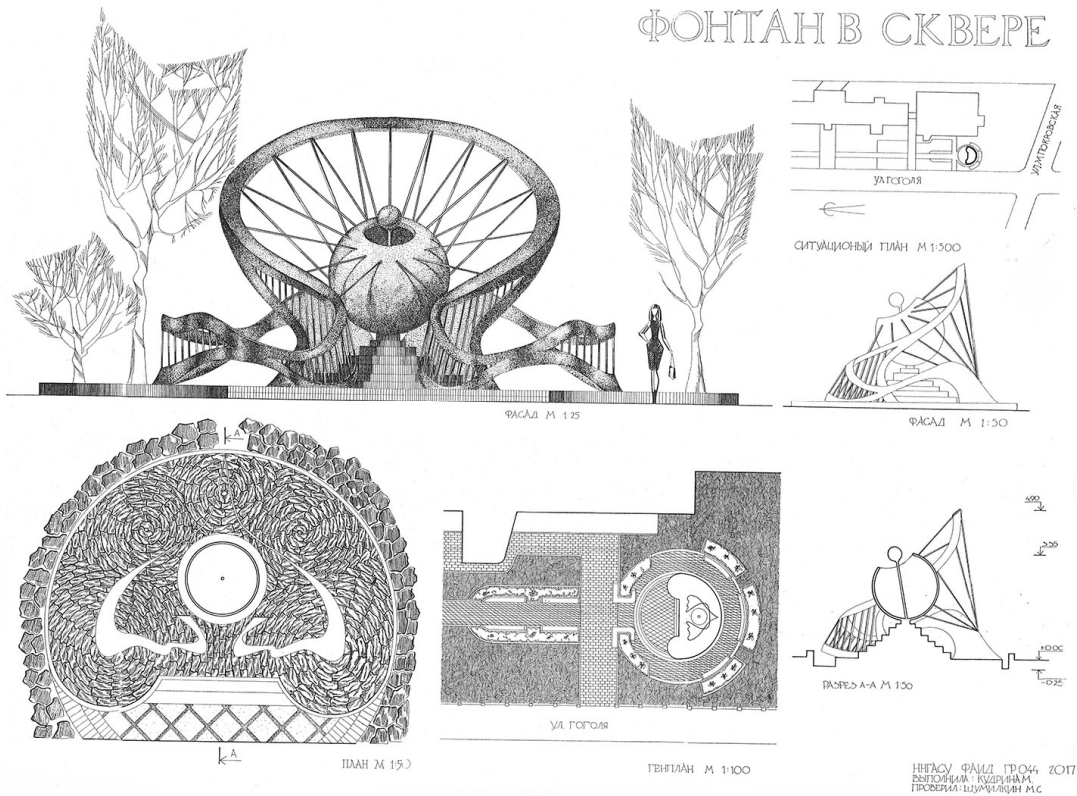


Fig. 31 Fountain. Training project



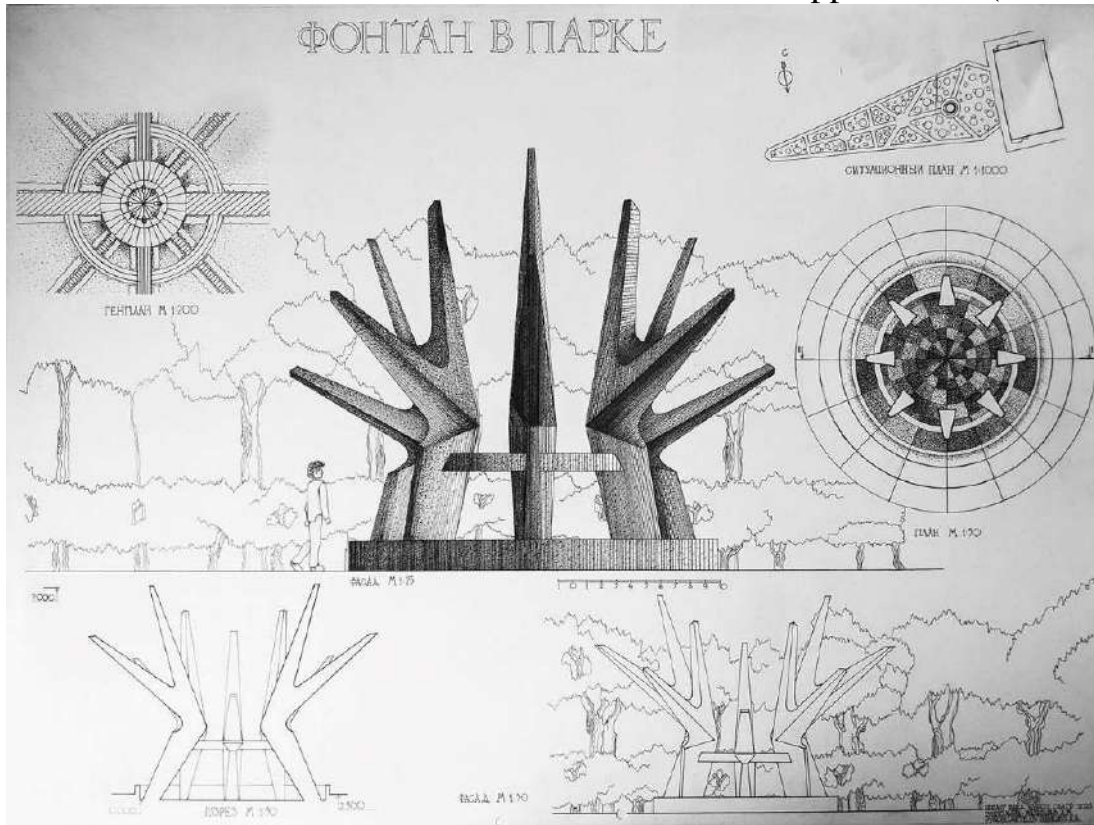


Fig. 32 Fountain. Training project

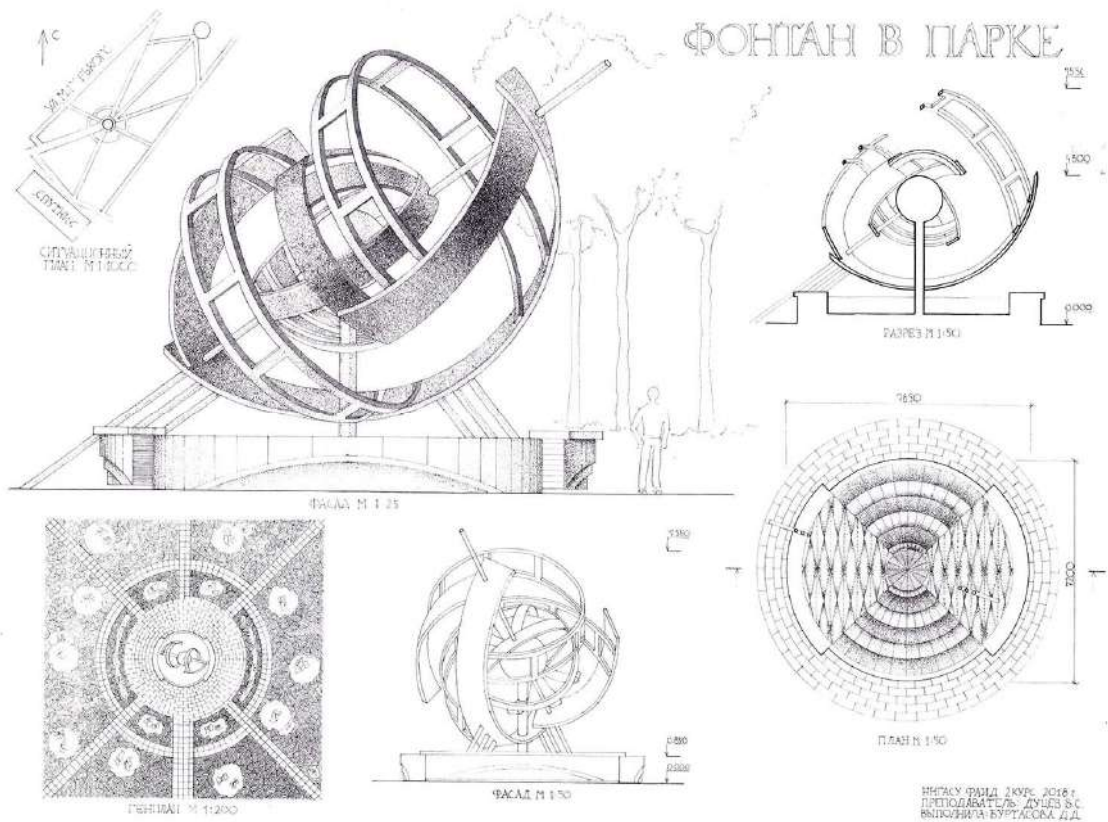


Fig. 33 Fountain. Training project

# ФОНТАН В СКВЕРЕ

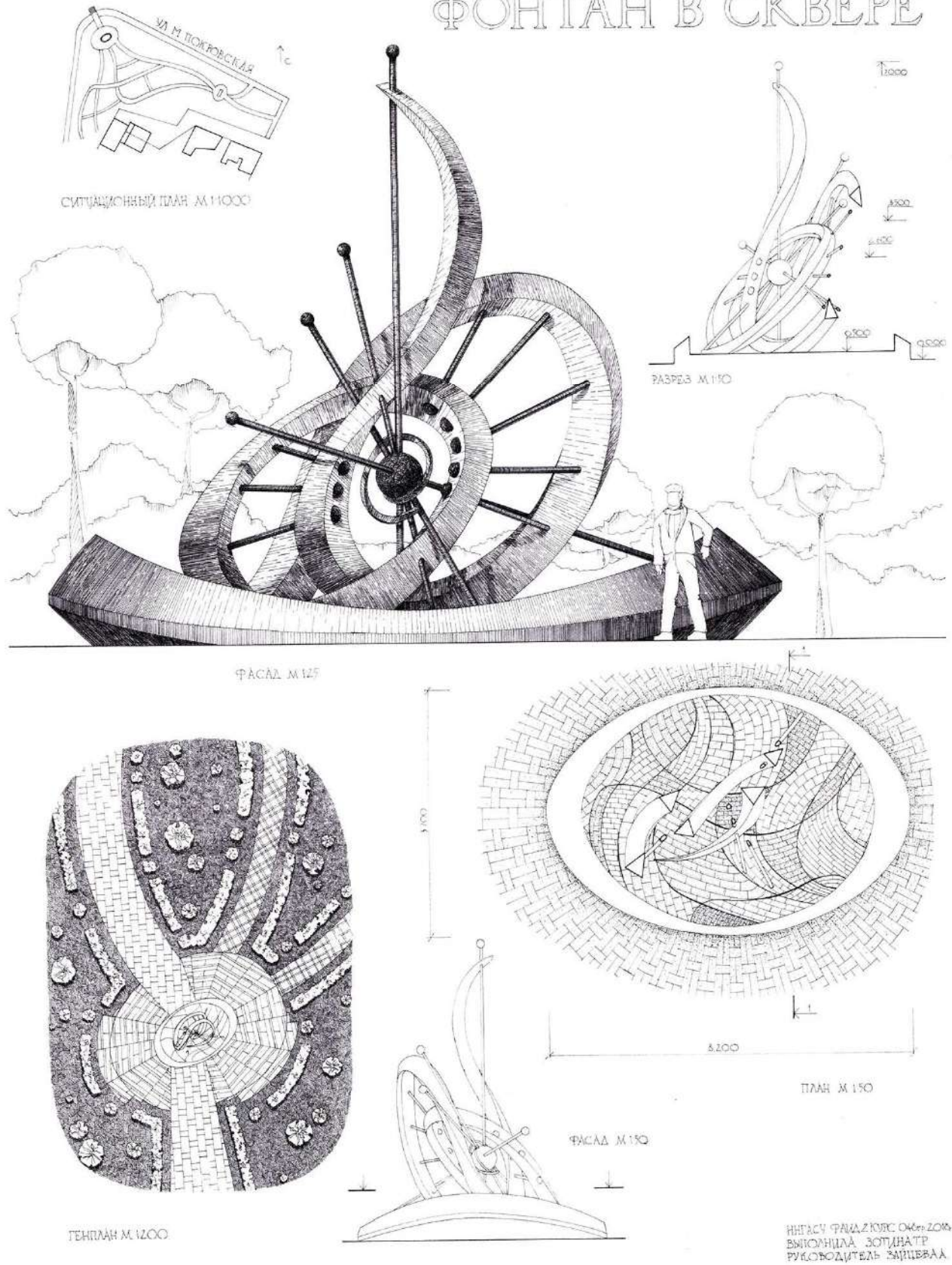


Fig. 34 Fountain. Training project

Appendix 13 (continued)

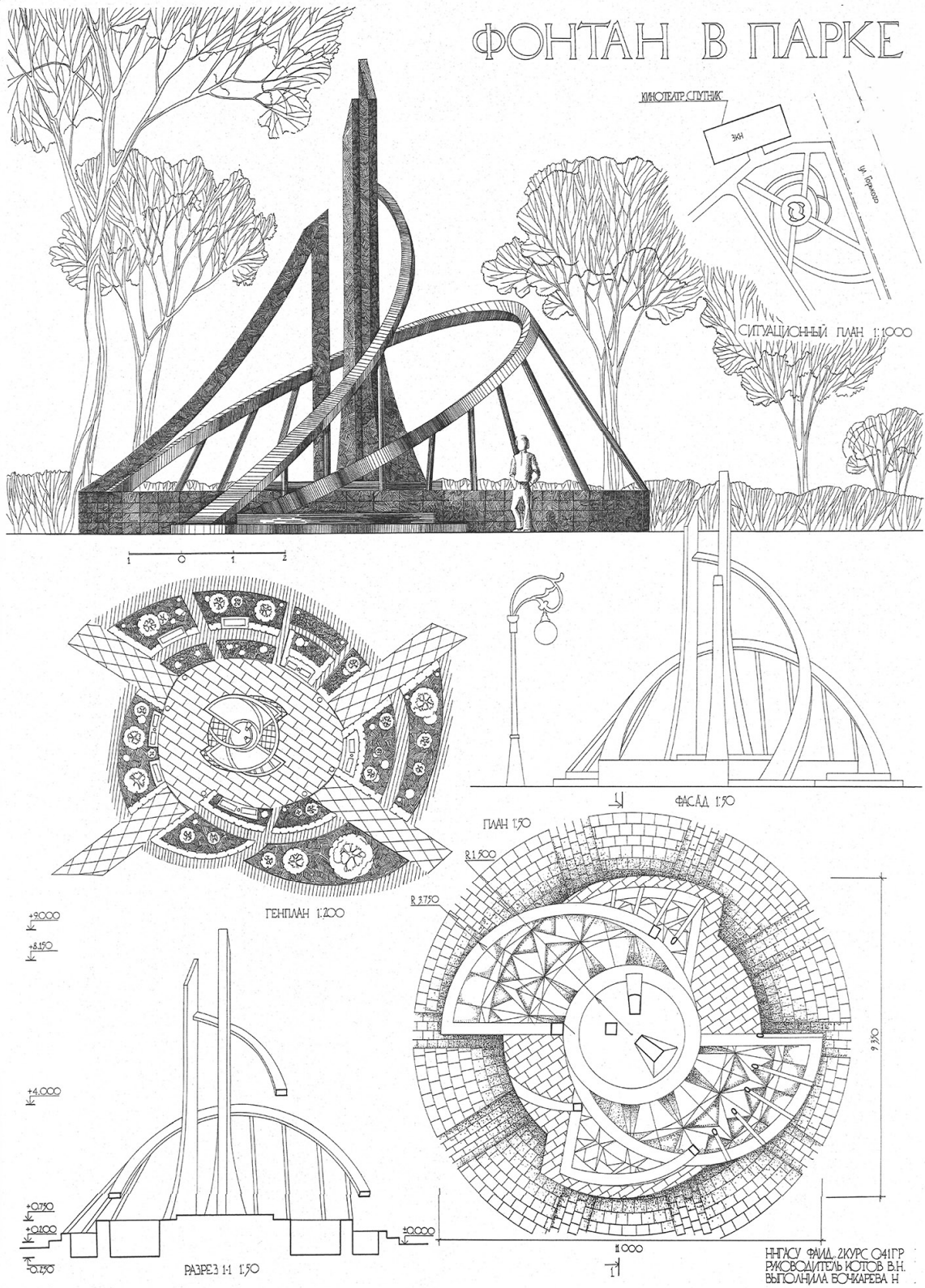


Fig. 35 Fountain. Training project

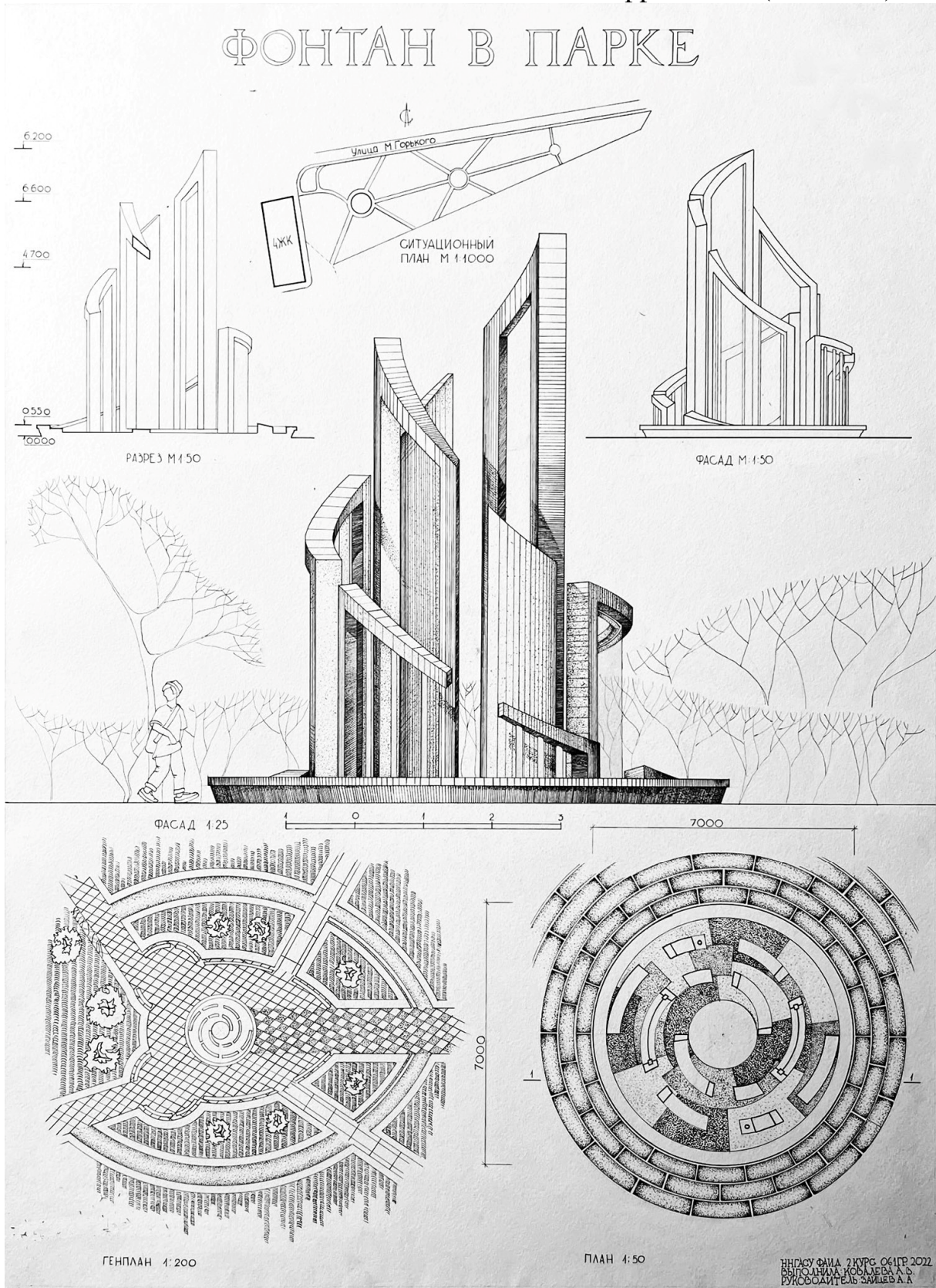


Fig. 36 Fountain. Training project

# ФОНТАН В ПАРКЕ

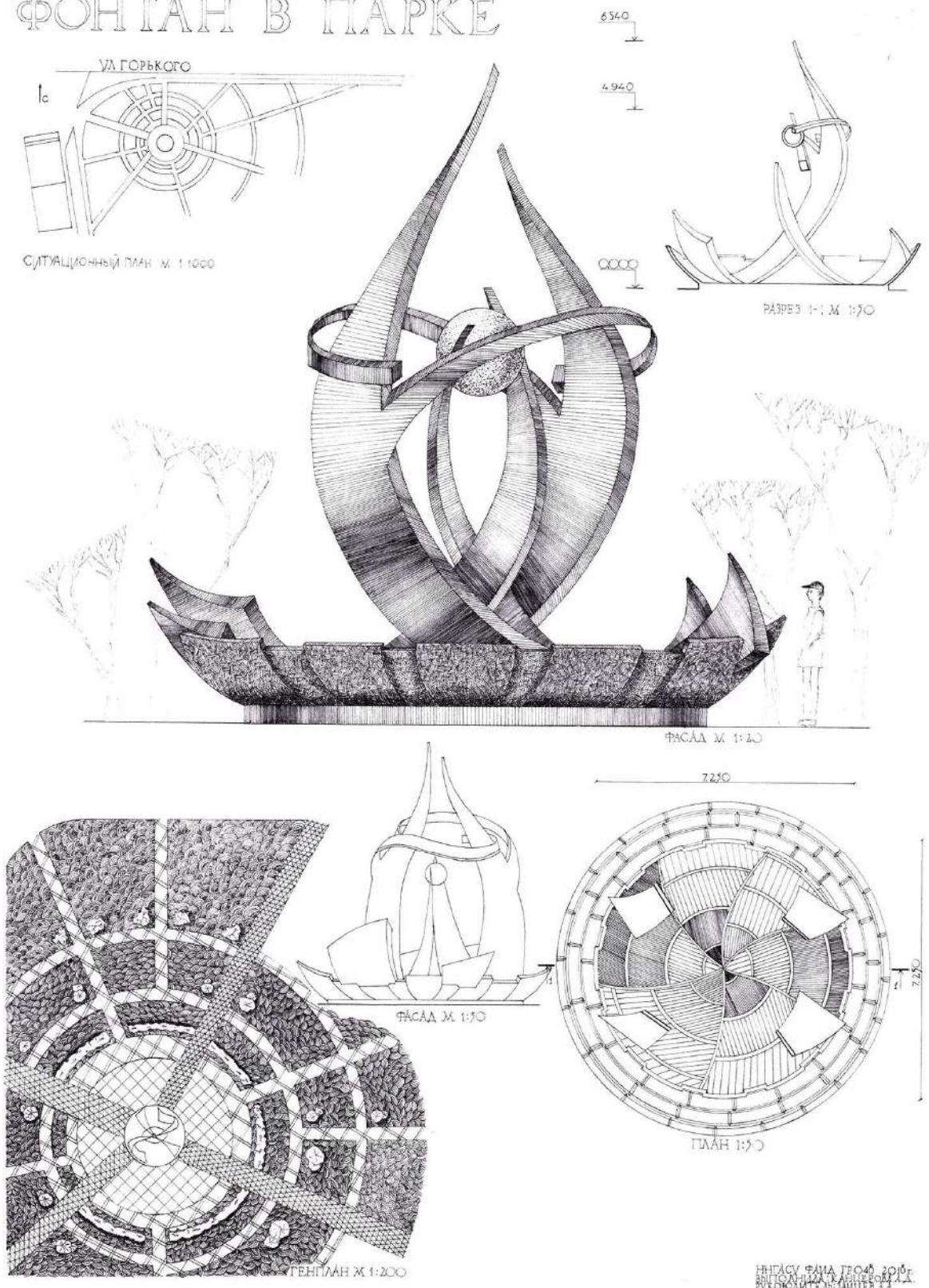


Fig. 37 Fountain. Training project

Appendix 13 (continued)

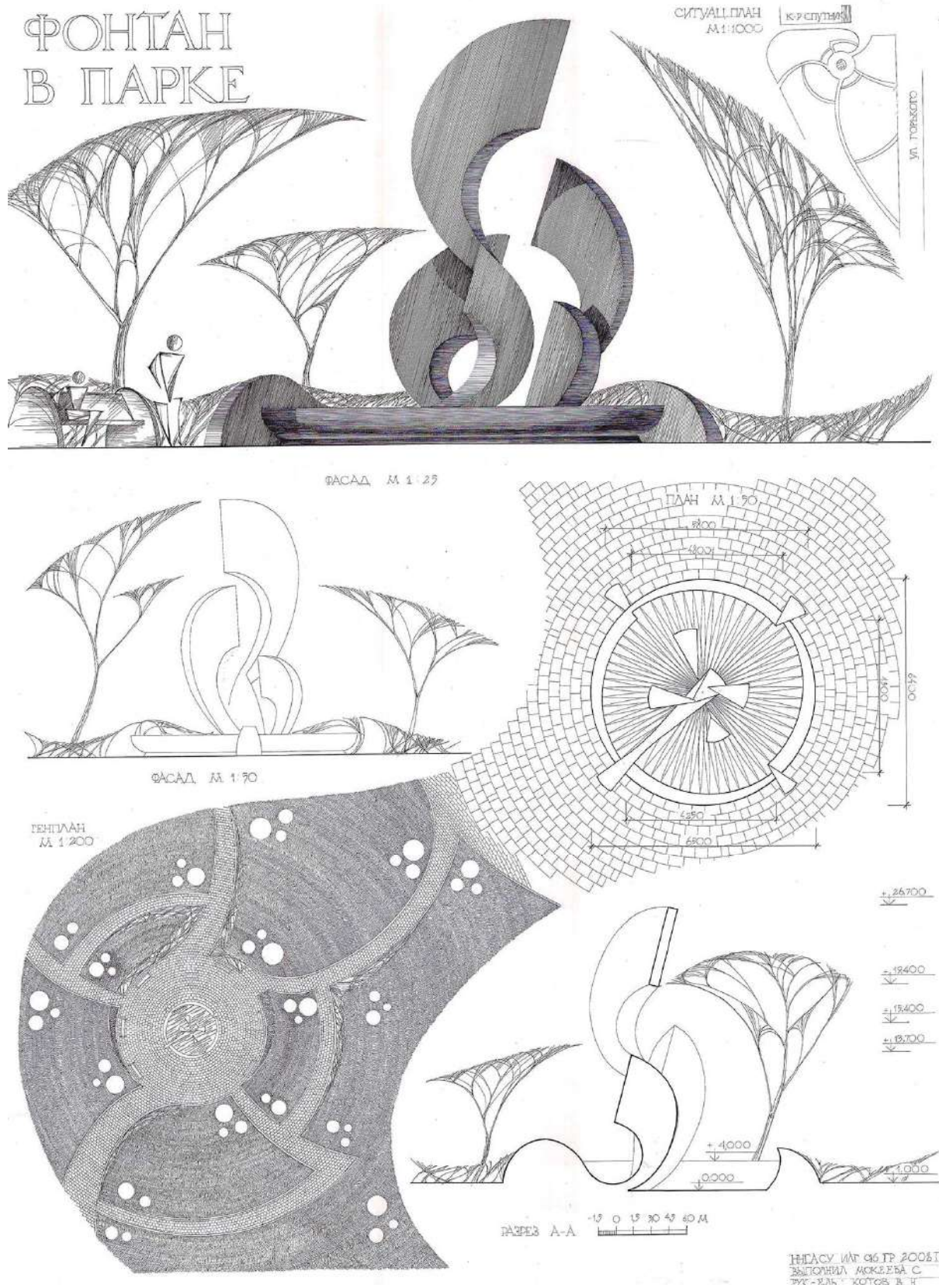


Fig. 38 Fountain. Training project

Appendix 13 (continued)

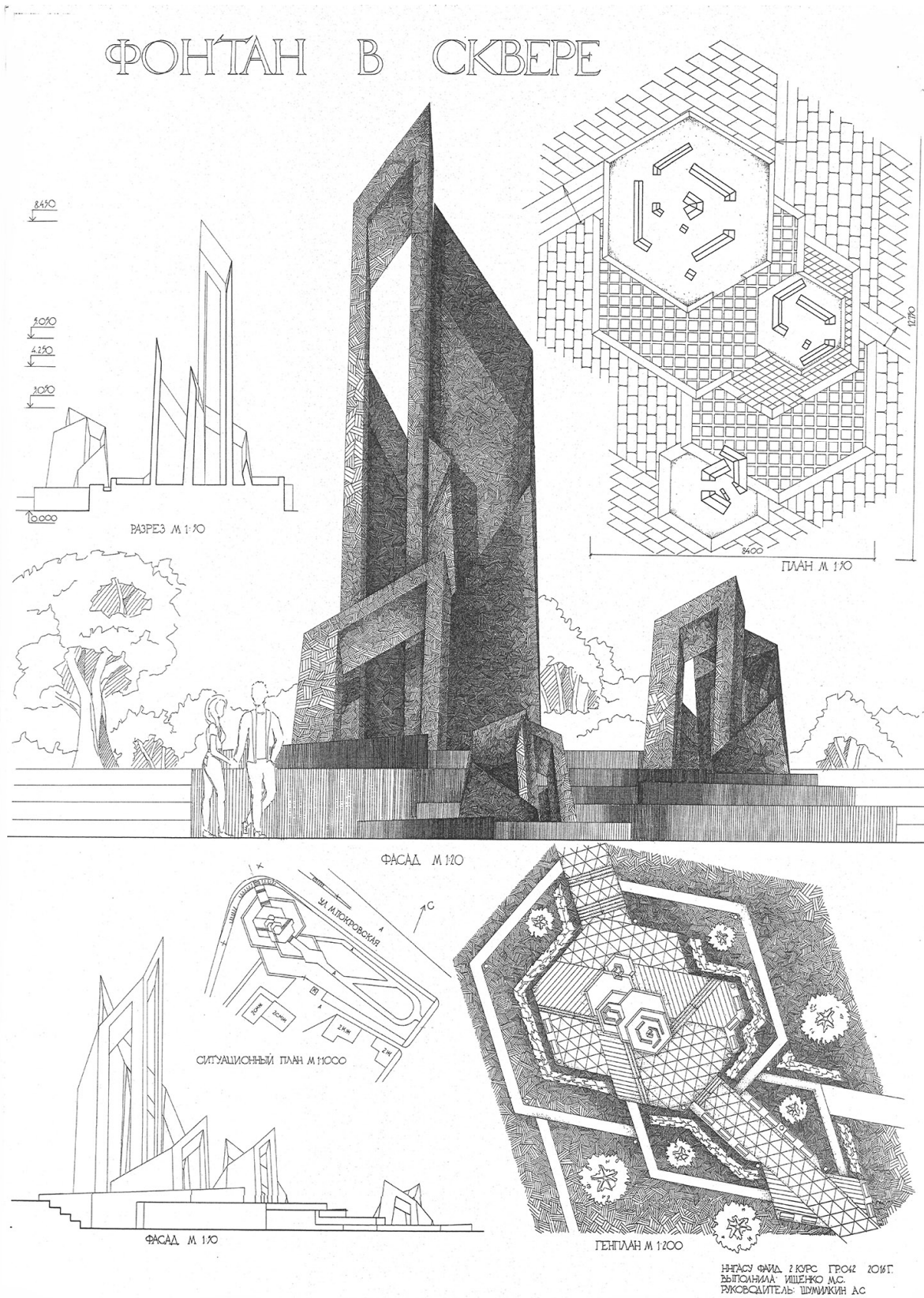


Fig. 39 Fountain. Training project

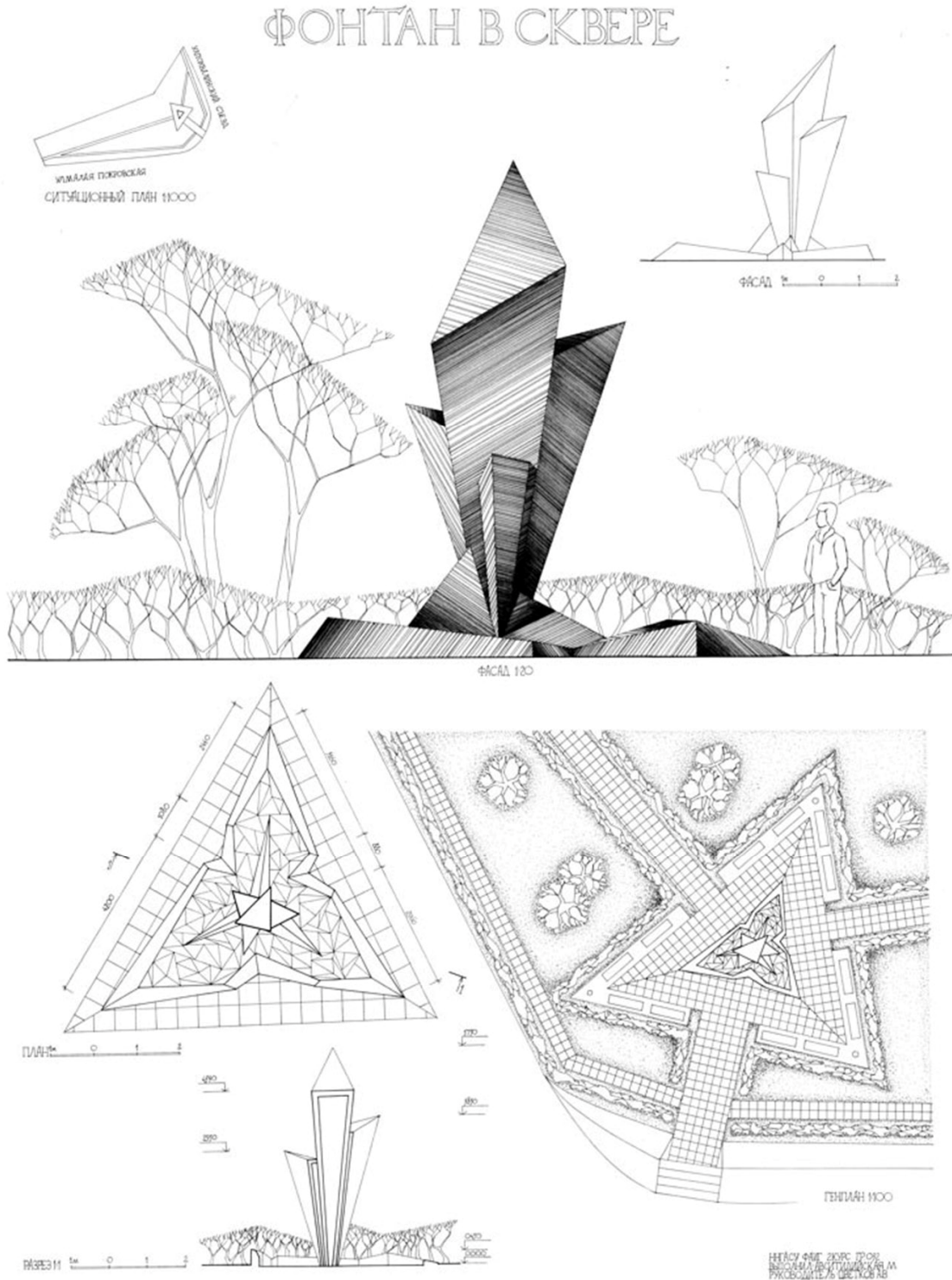


Fig. 40 Fountain. Training project



Appendix 13 (continued)

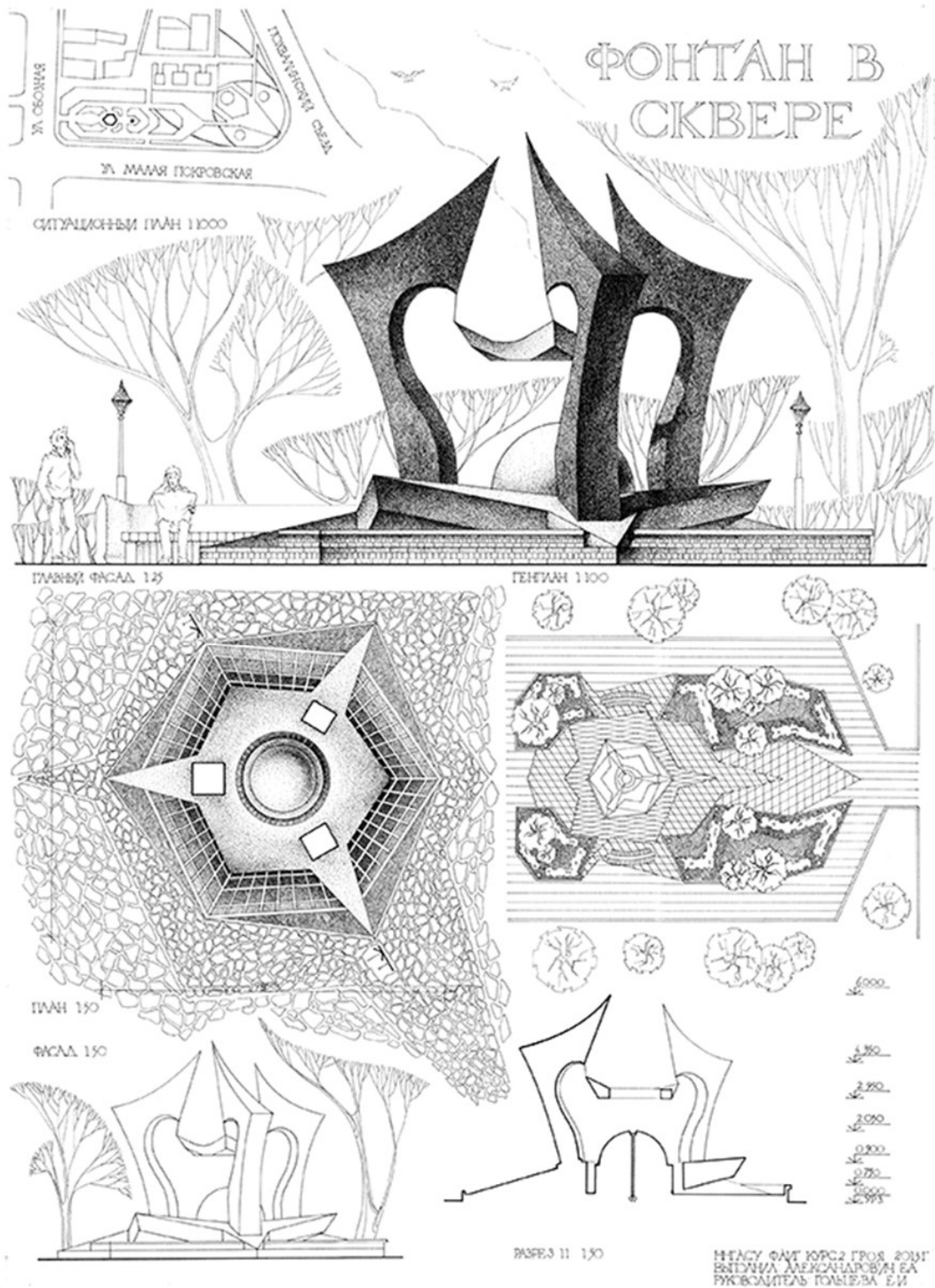


Fig. 41 Fountain. Training project

Appendix 13 (continued)

# ФОНТАН В СКВЕРЕ

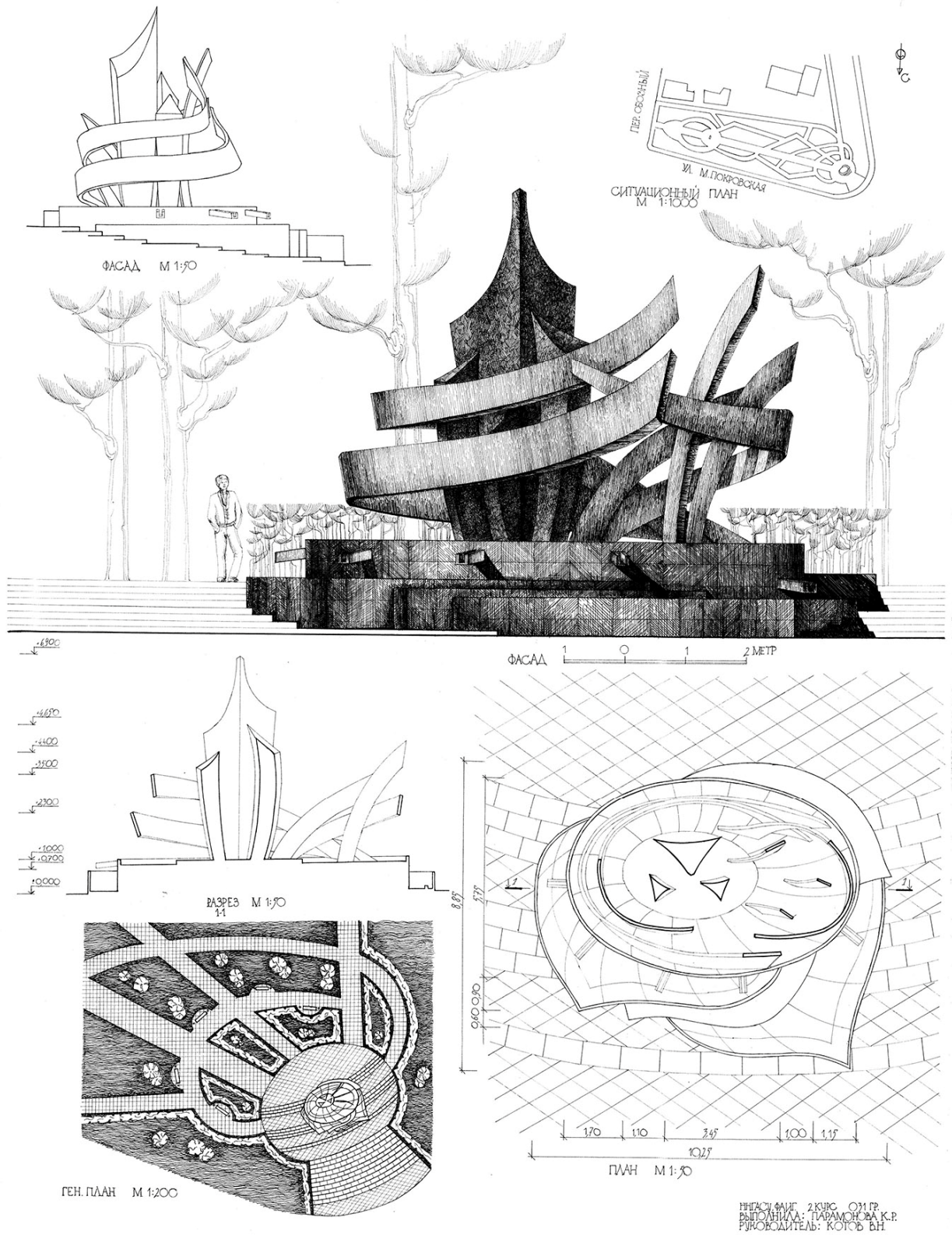


Fig. 42 Fountain. Training project

Appendix 13 (continued)

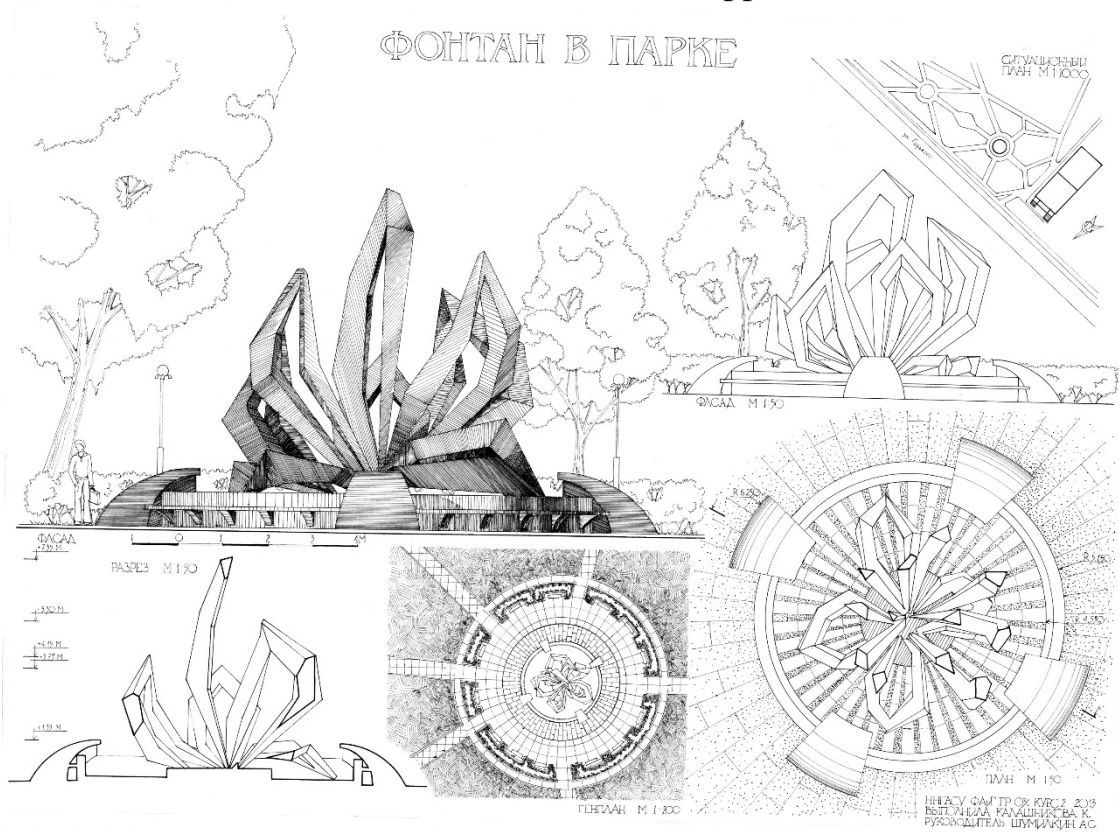


Fig. 43 Fountain. Training project

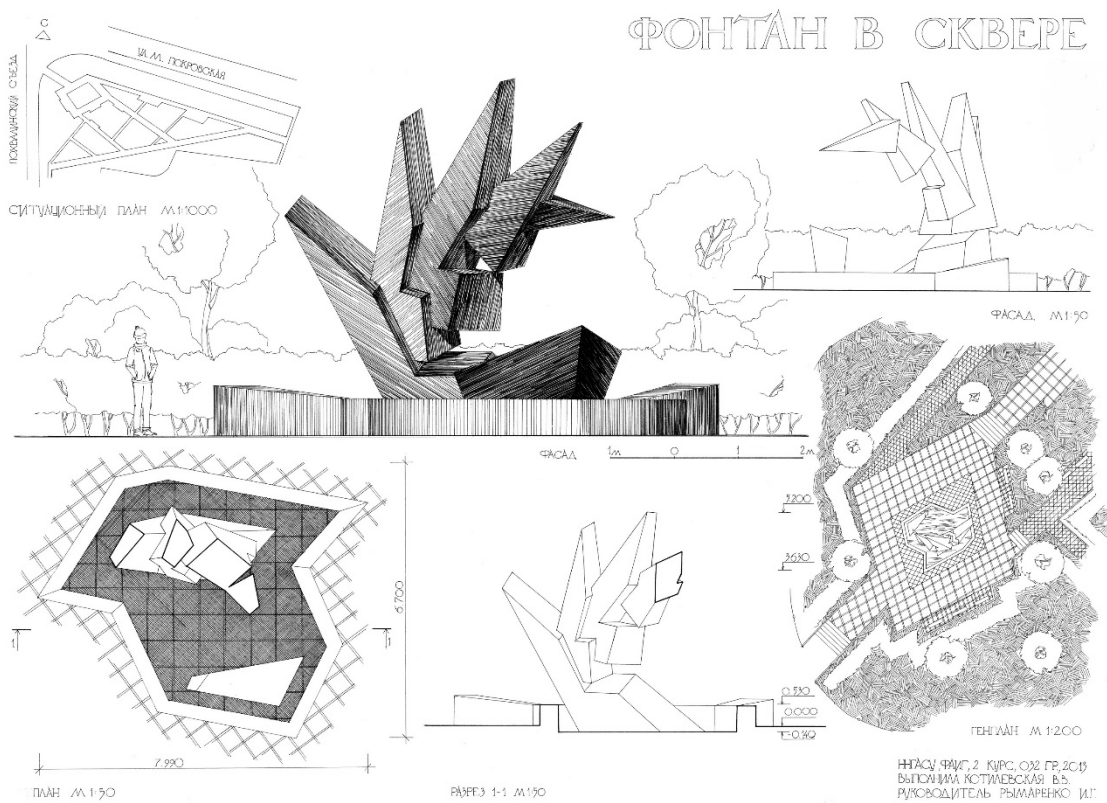


Fig. 44 Fountain. Training project

Appendix 13 (continued)

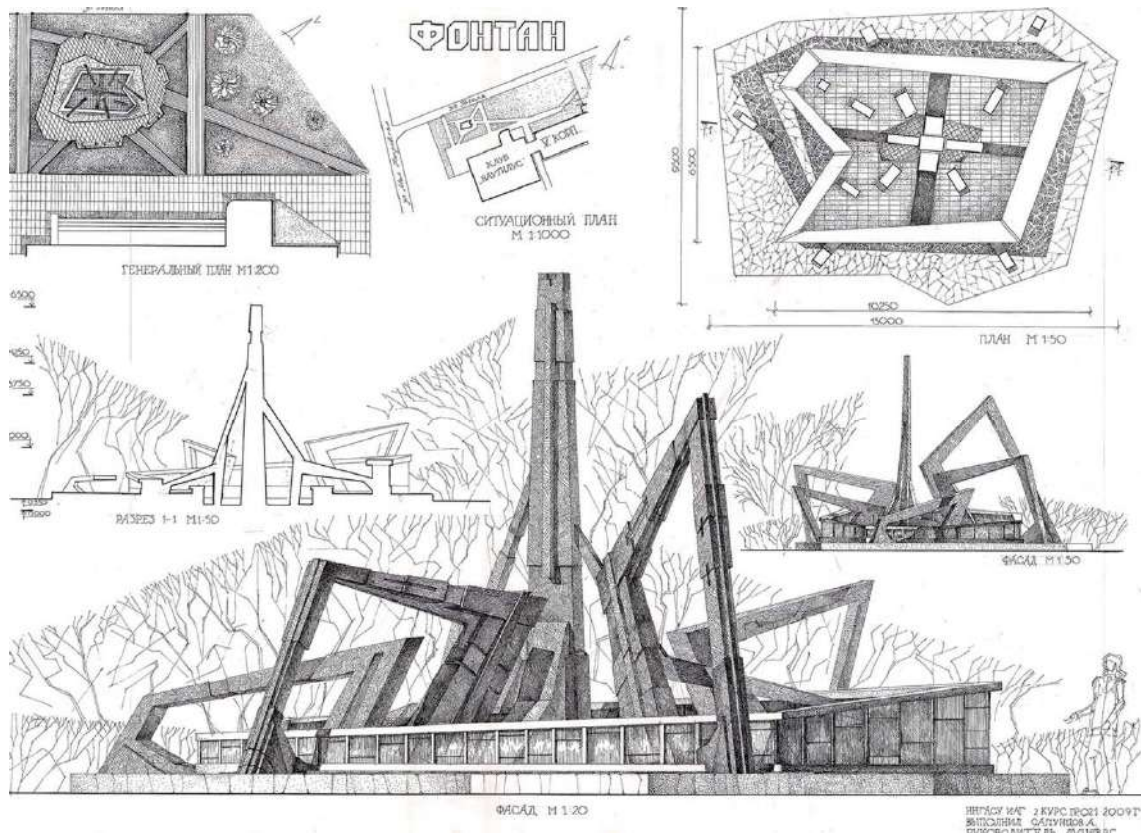


Fig. 45 Fountain. Training project

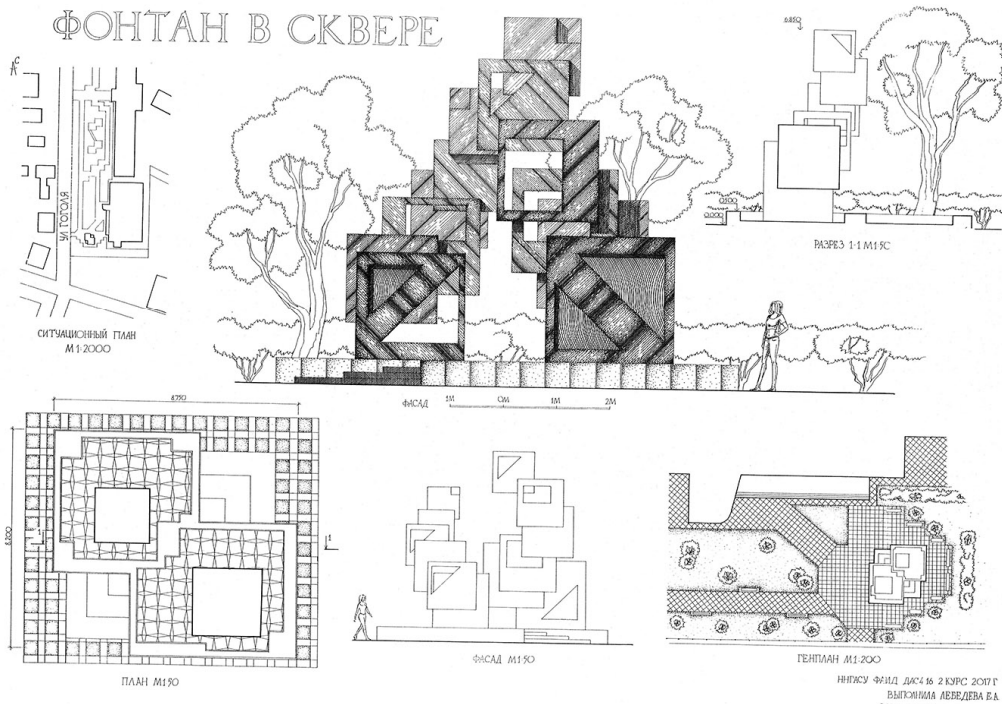
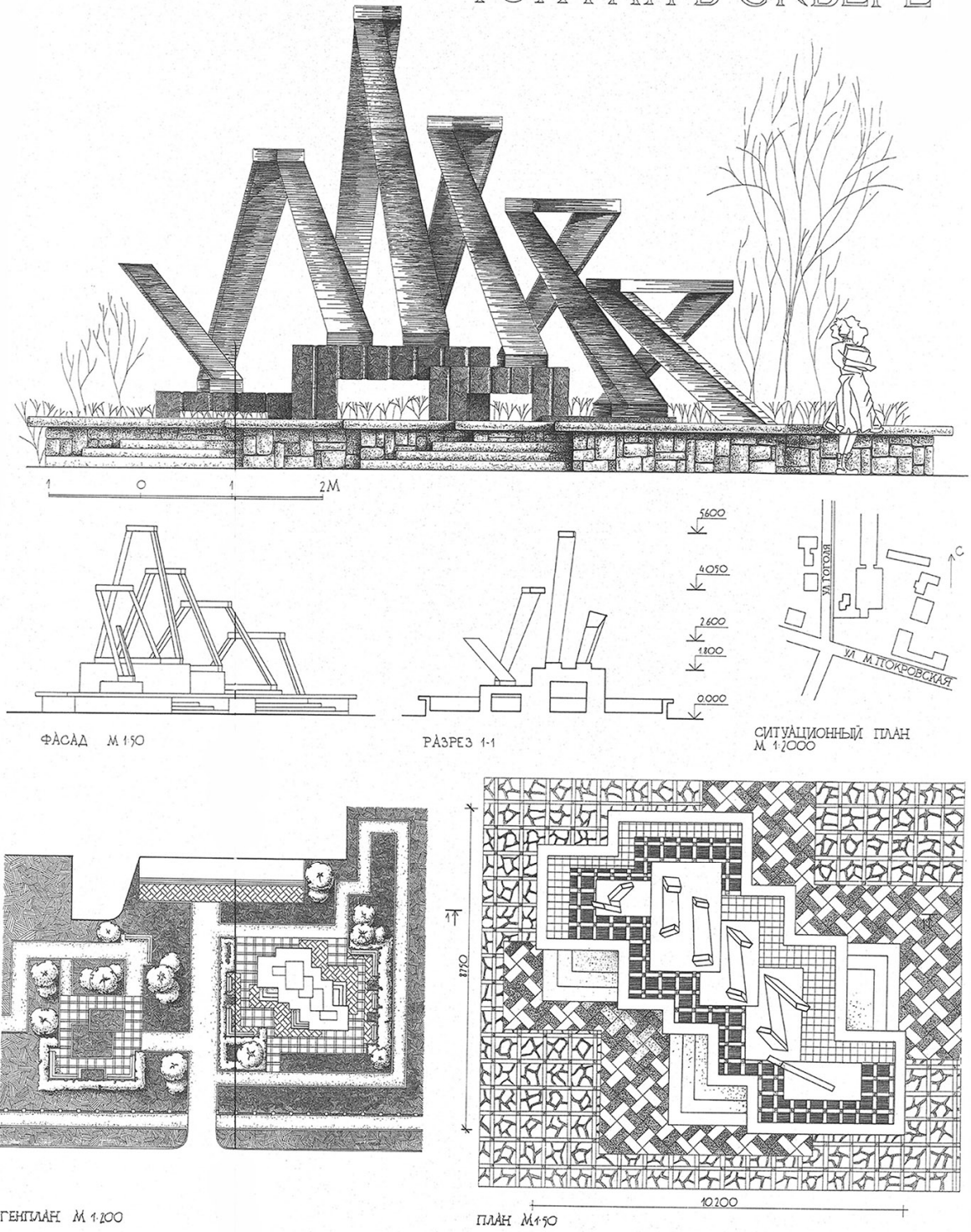


Fig. 46 Fountain. Training project

ФОНТАН В СКВЕРЕ



ИНСТУ ФАИД 2 КУРС 2016 Г  
 ВЫПОЛНИЛА МАСЛОВА Д.С.  
 РУКОВОДИТЕЛЬ ШУМИЛКИН М.С.

Fig. 47 Fountain. Training project

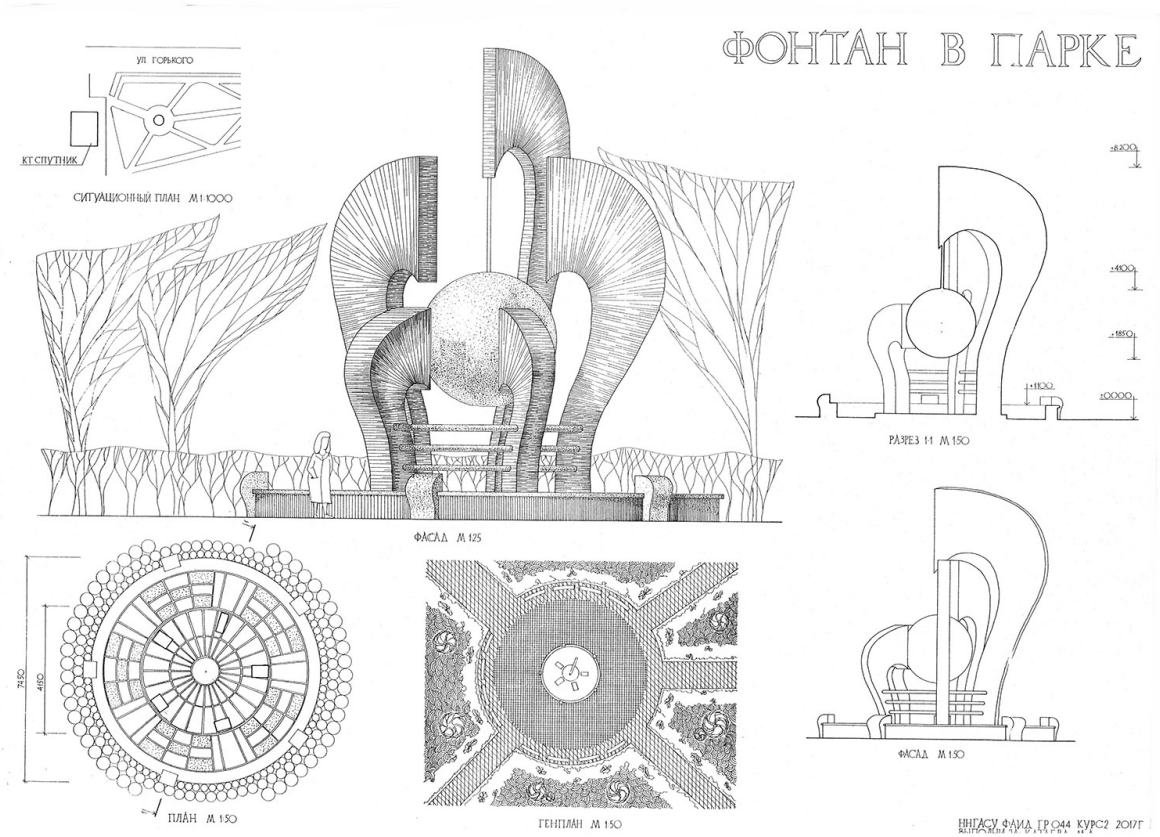


Fig. 48 Fountain. Training project

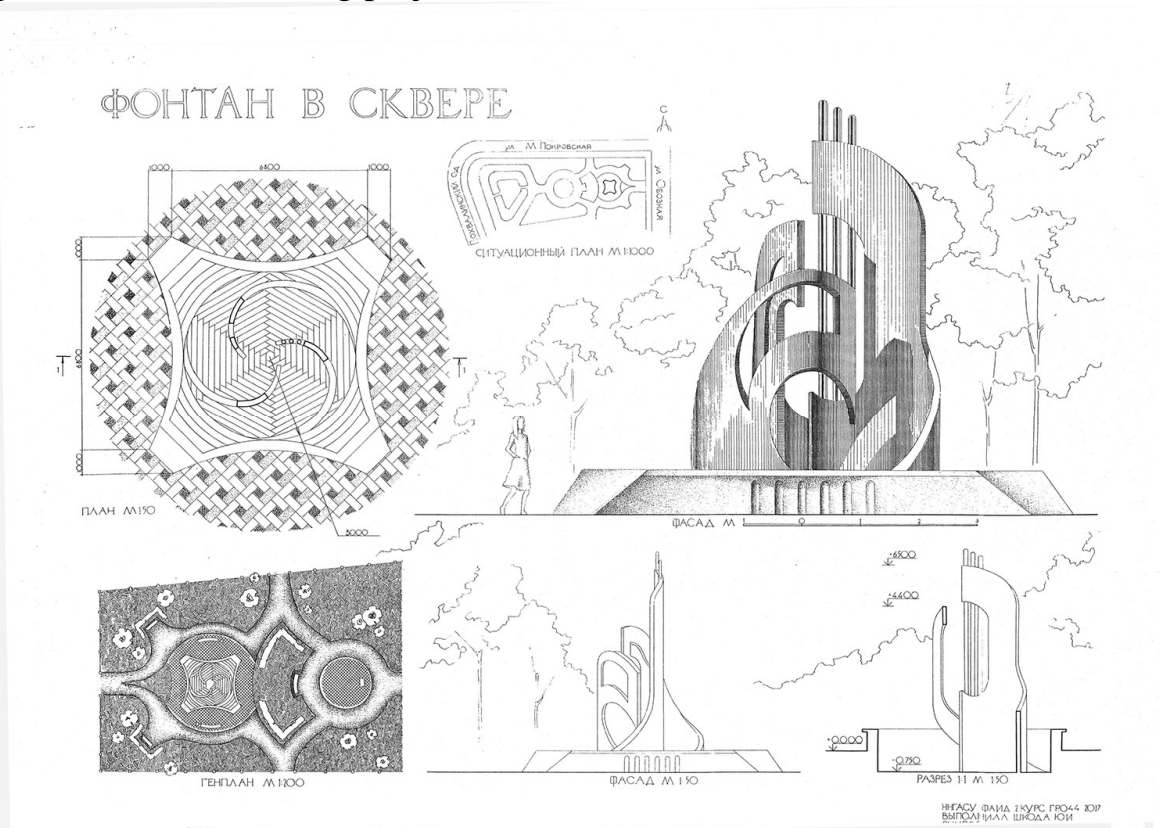


Fig. 49 Fountain. Training project

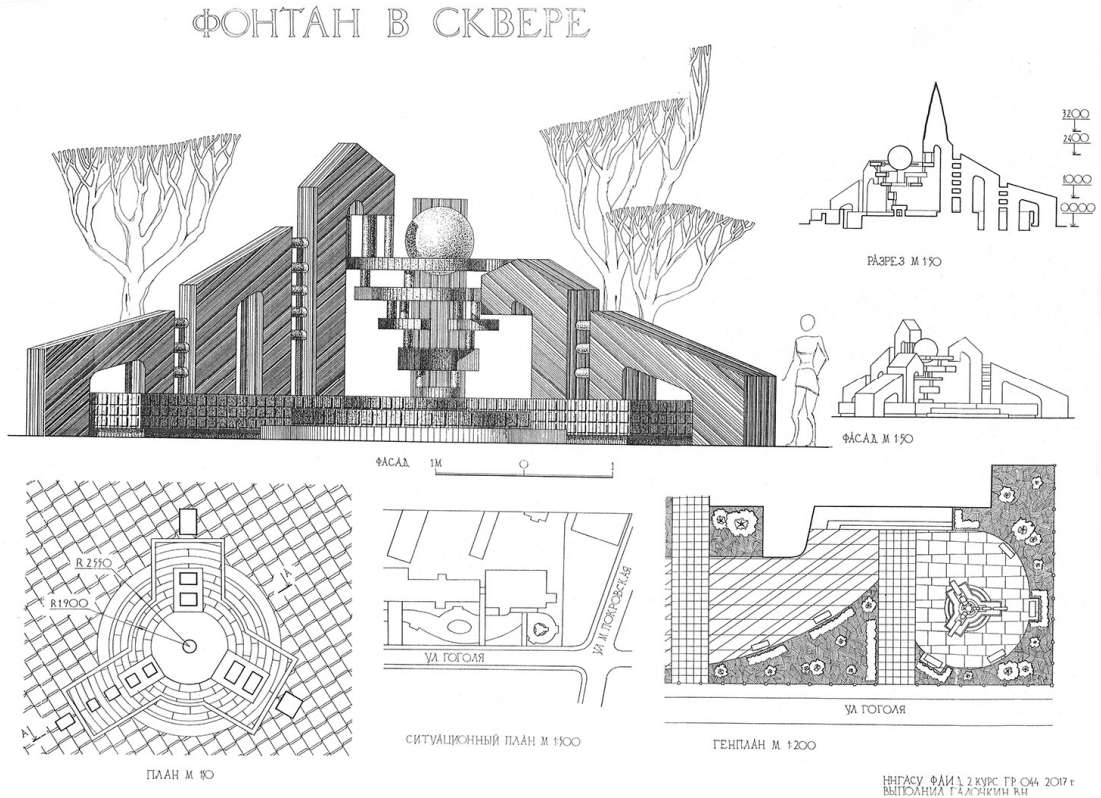


Fig. 50 Fountain. Training project

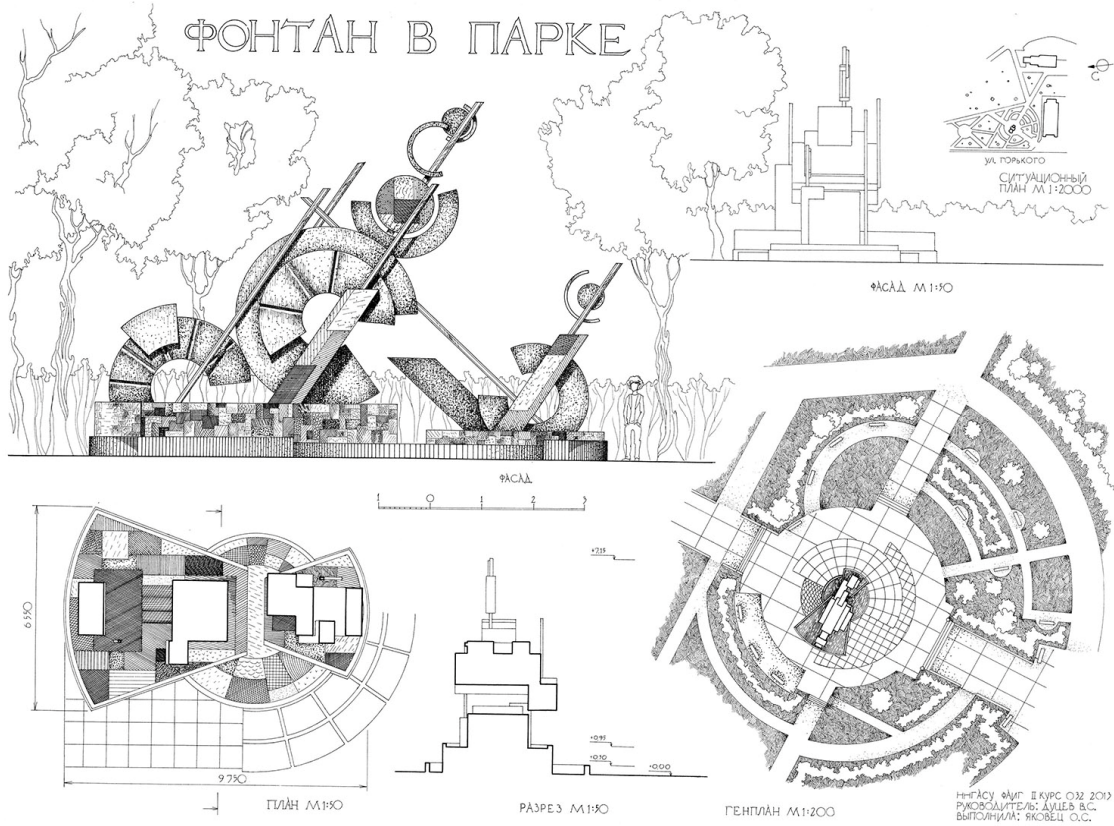


Fig. 51 Fountain. Training project

## Appendix 13 (continued)

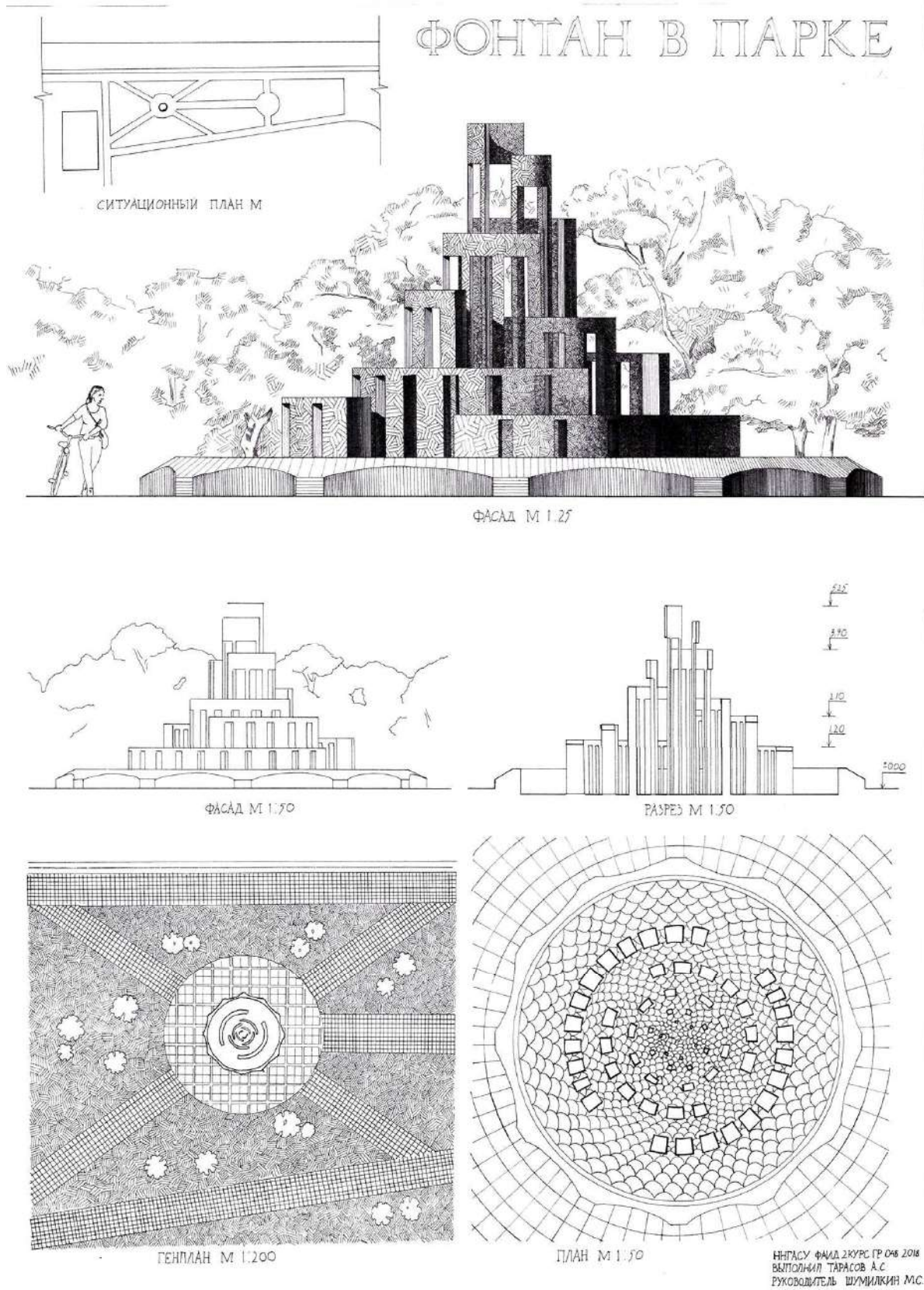


Fig. 52 Fountain. Training project



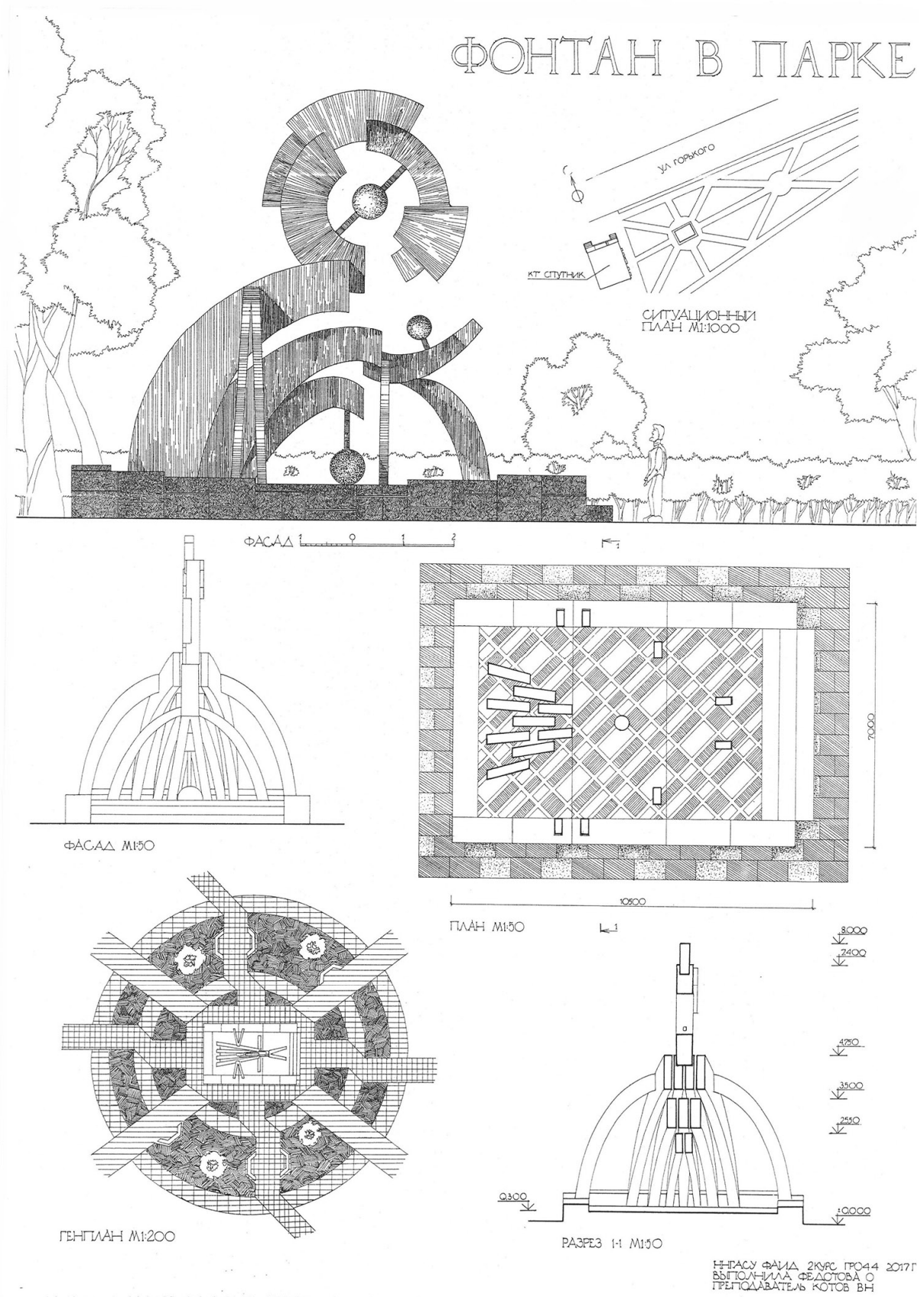
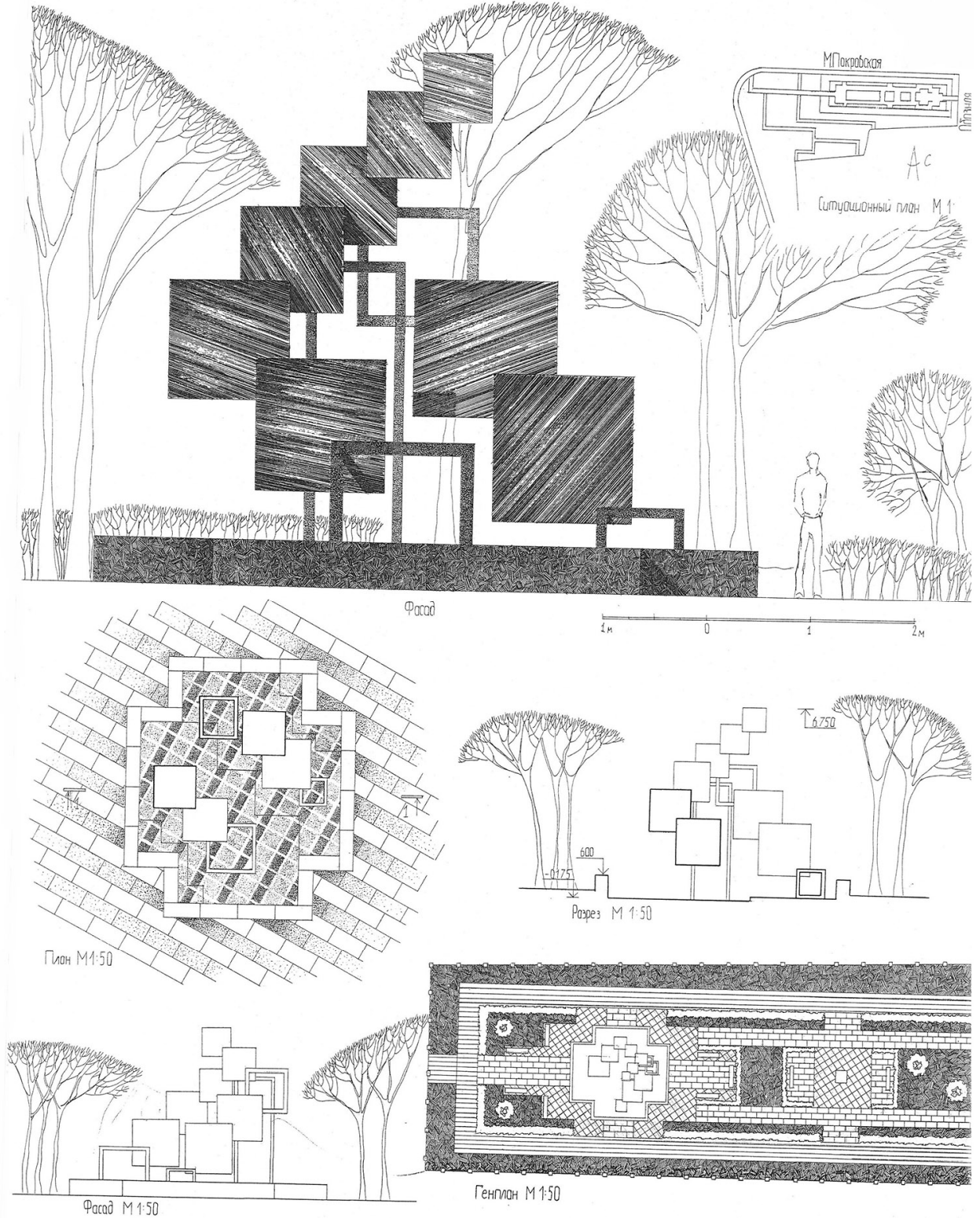


Fig. 53 Fountain. Training project

# ФОНТАН В СКВЕРЕ



НАЧАСУ ФАМИГ 2КГТРОМ 2015г.  
 ВЫПОЛНИЛА: СУЗОВА Т.  
 РУКОВОДИТЕЛЬ: КОТОВ В.Н.

Fig. 54 Fountain. Training project

# ФОНТАН В ПАРКЕ

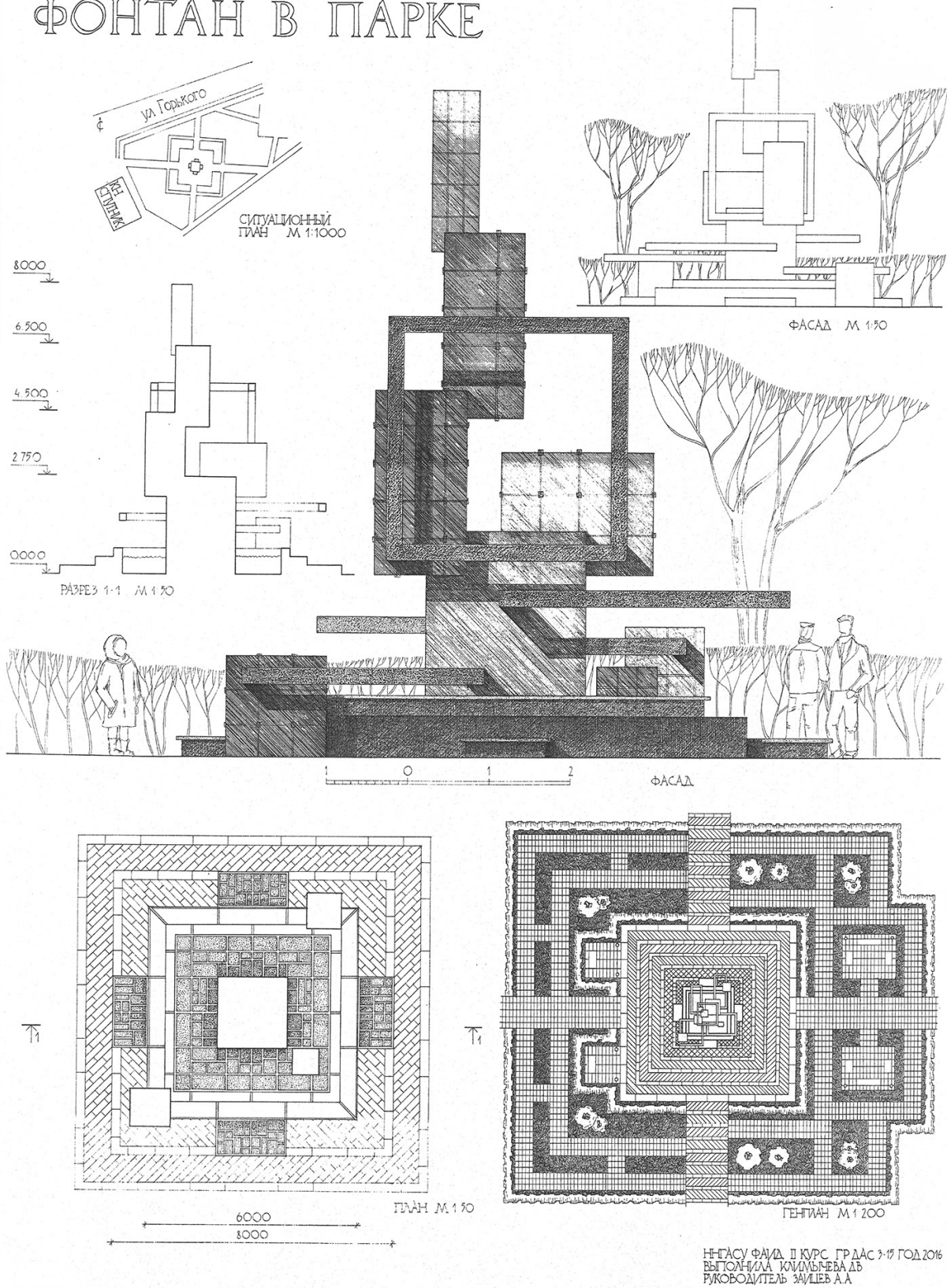


Fig. 55 Fountain. Training project

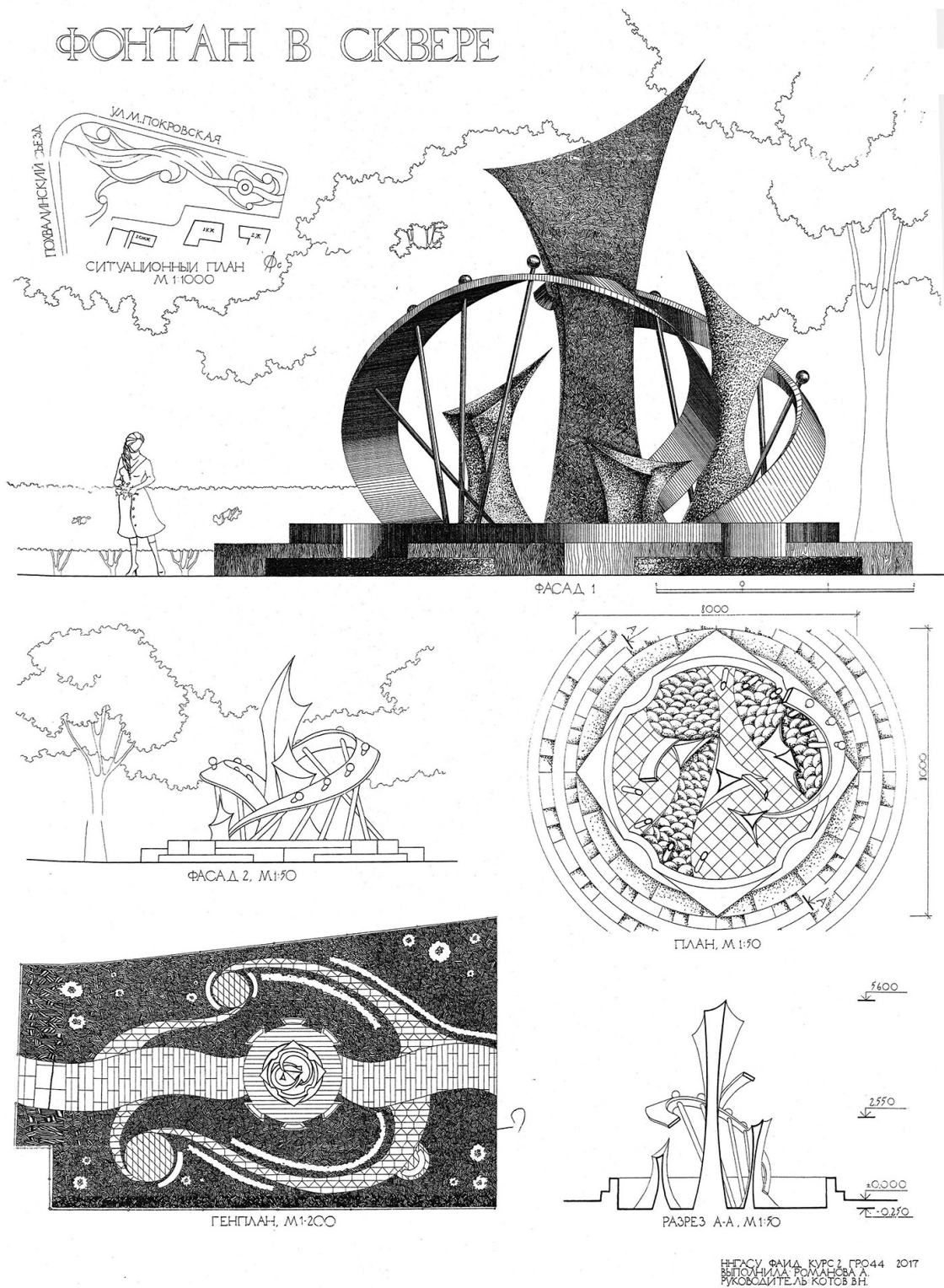
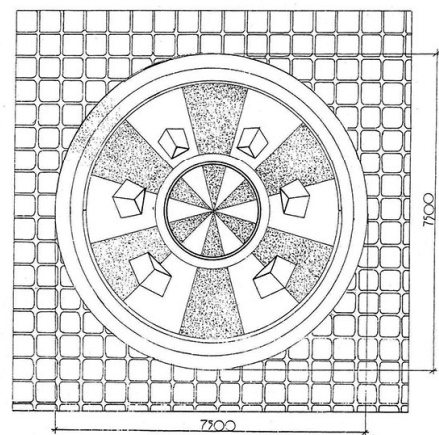
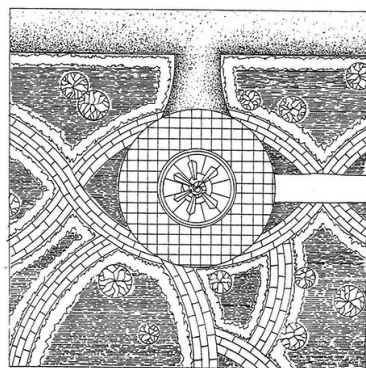
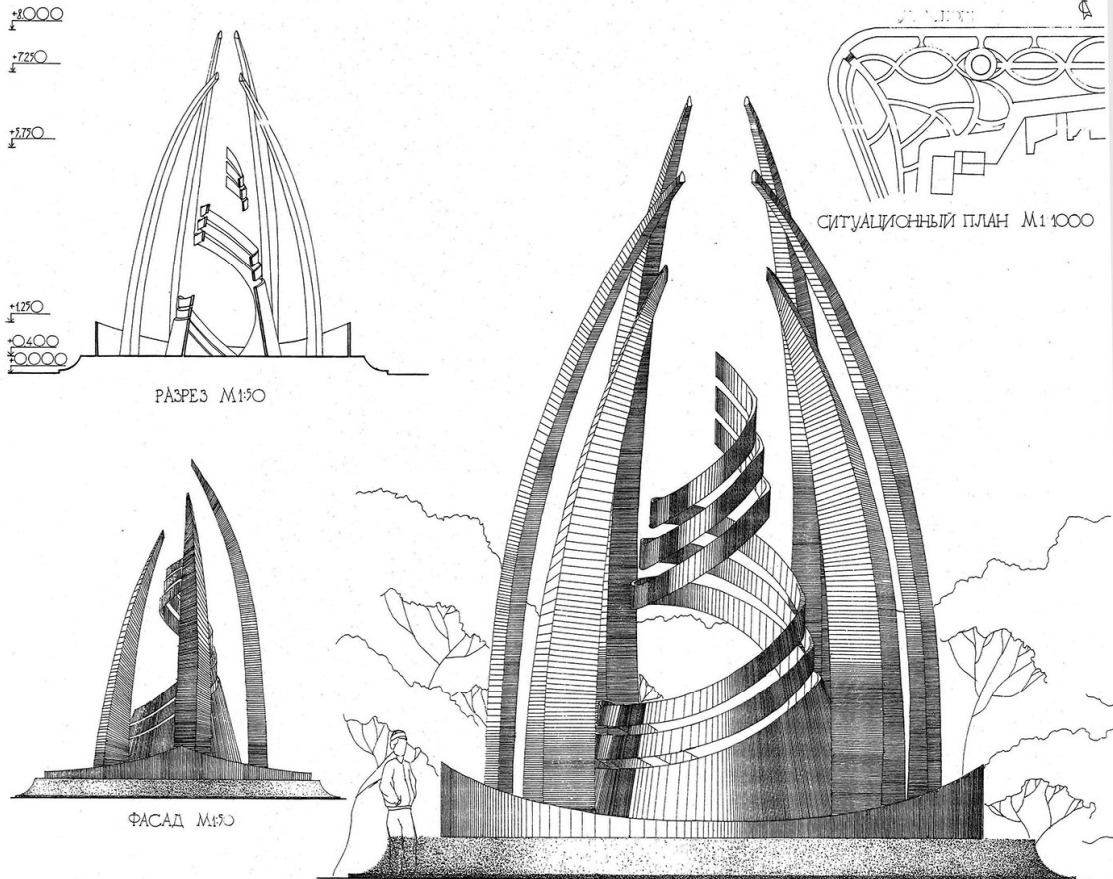


Fig. 56 Fountain. Training project

# ФОНТАН В СКВЕРЕ



ГЕНПЛАН М1:200

ПЛАН М1:50

НИГАСУ ФАИД ГРО45 2 КУРС 2017.  
 ВЫПОЛНИЛА ЧИЧИДОВА МР  
 РУКОВОДИТЕЛЬ ЗАЙЦЕВ АА

Fig. 57 Fountain. Training project

## Appendix 13 (continued)

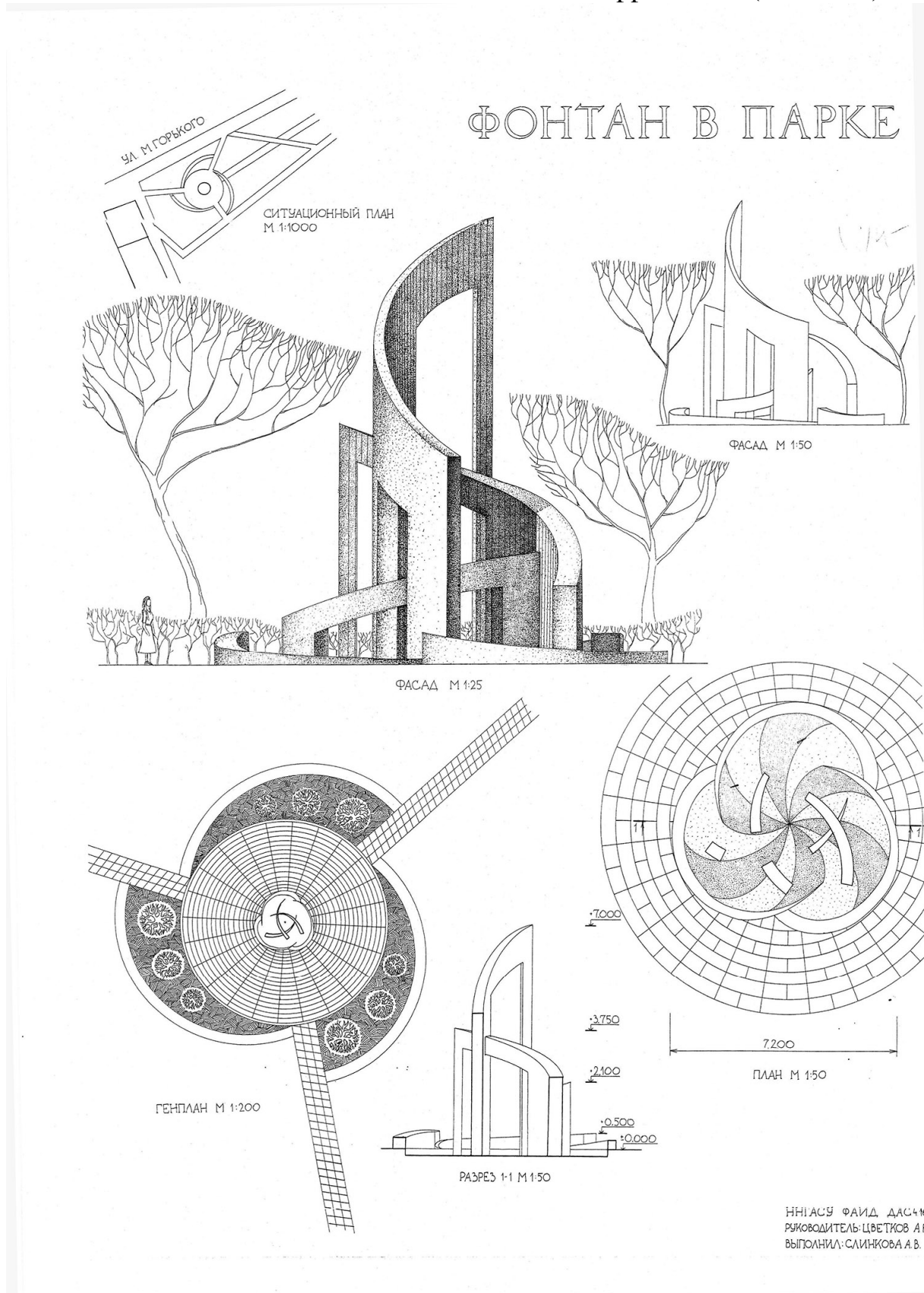


Fig. 58 Fountain. Training project

# ФОНТАН В СКВЕРЕ

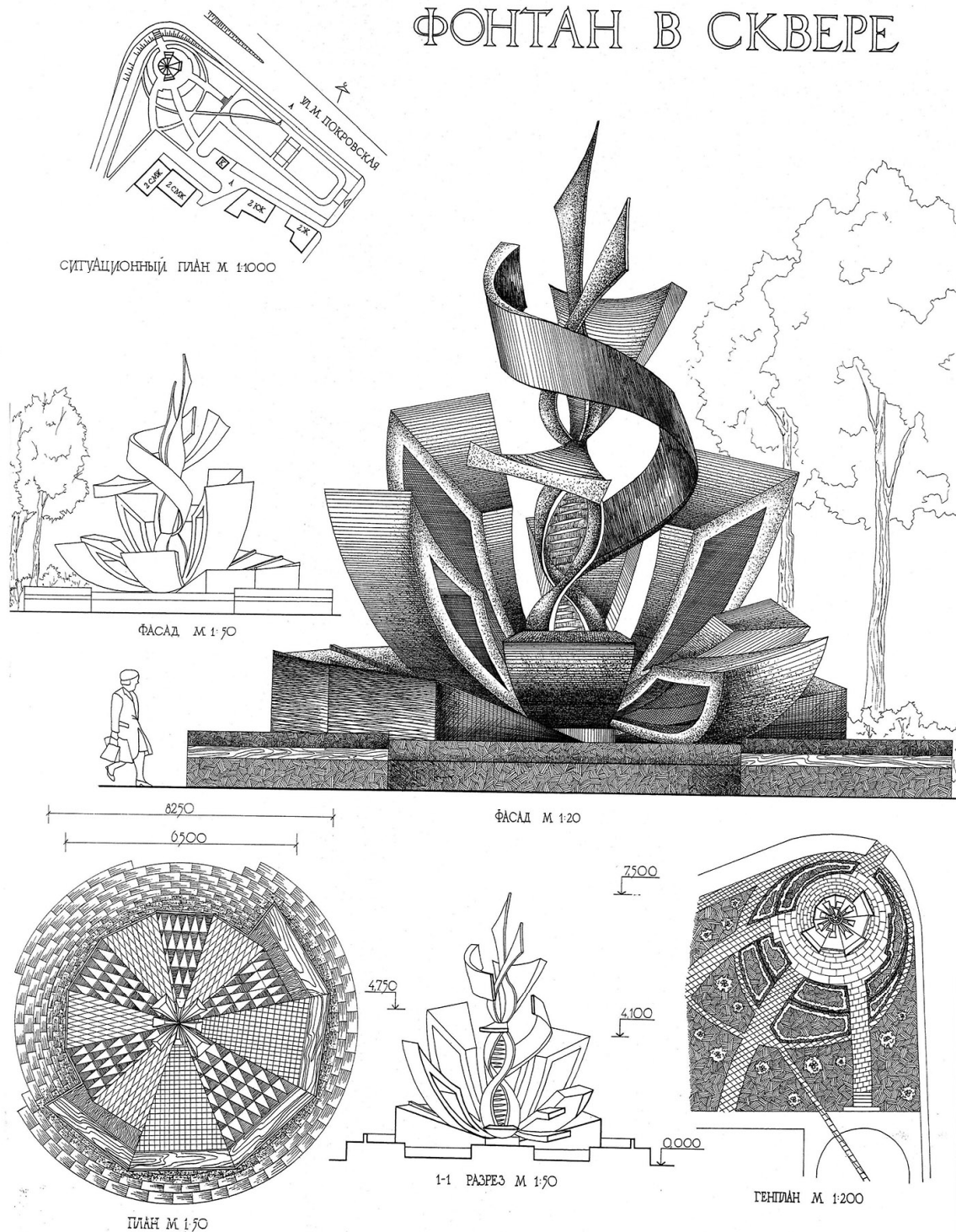


Fig. 59 Fountain. Training project

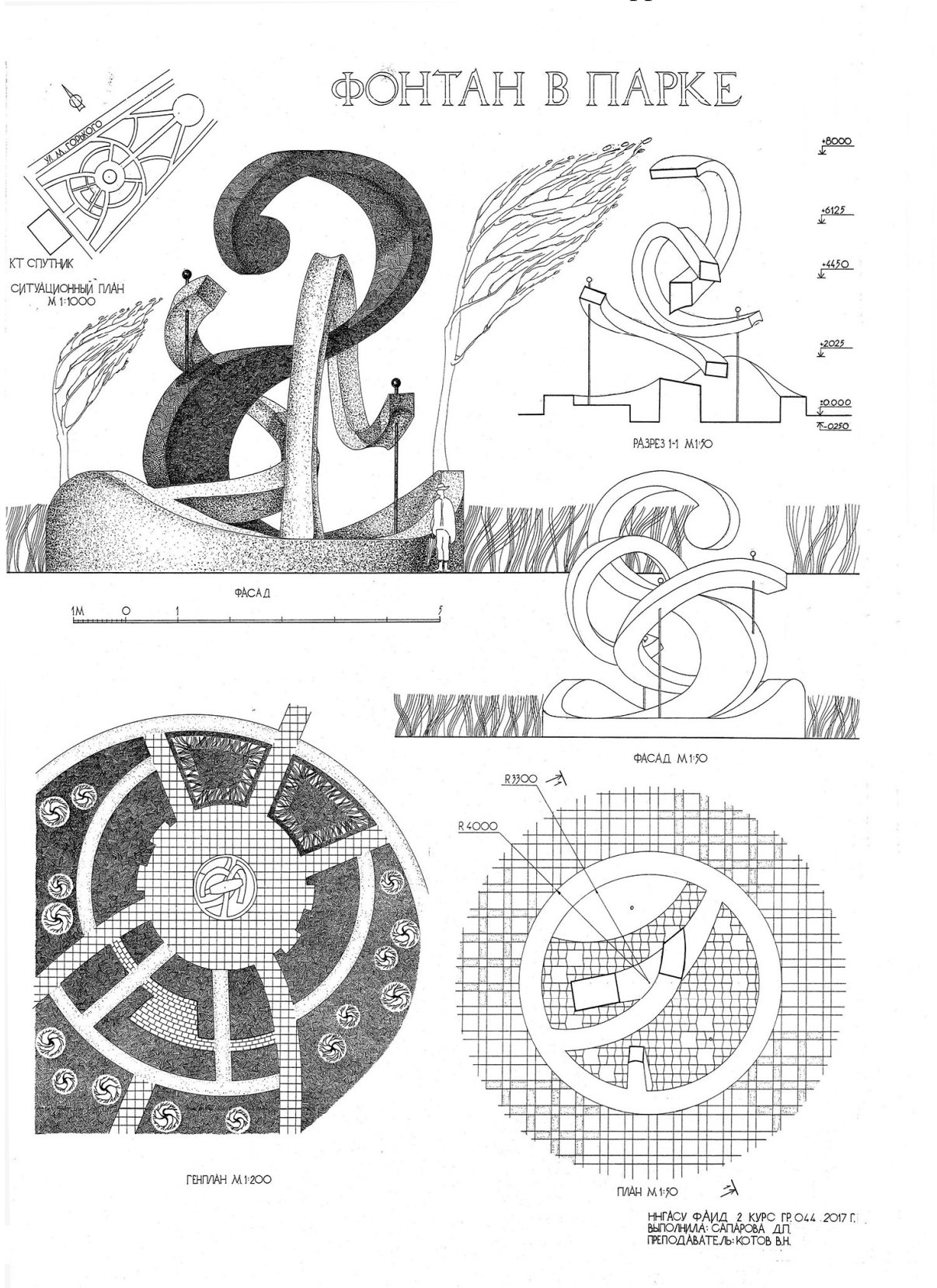


Fig. 60 Fountain. Training project



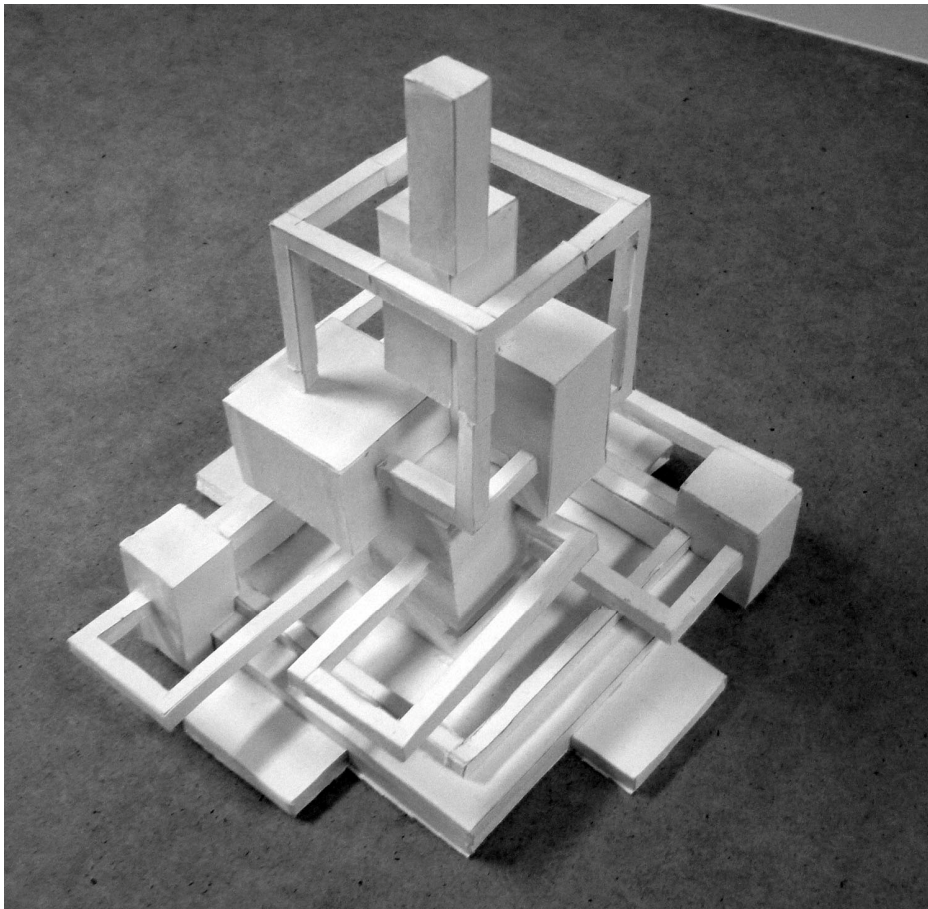
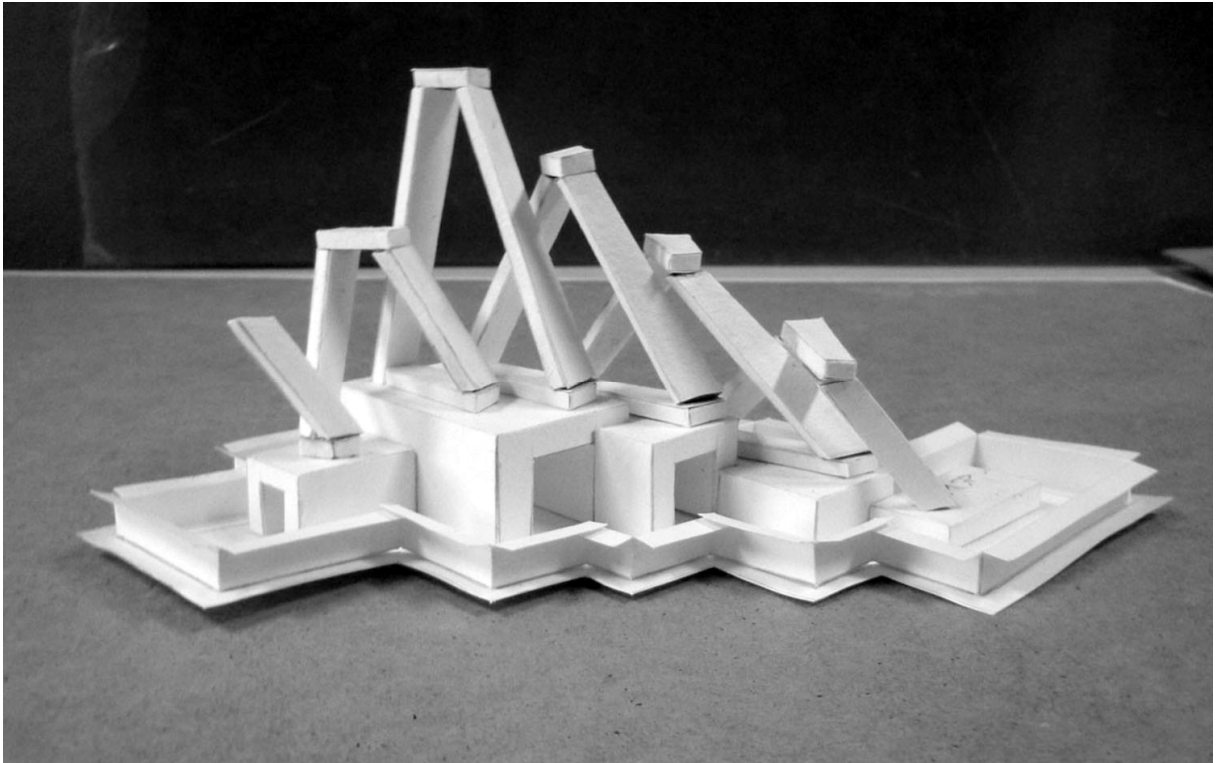


Fig. 61,62 Final architectural model

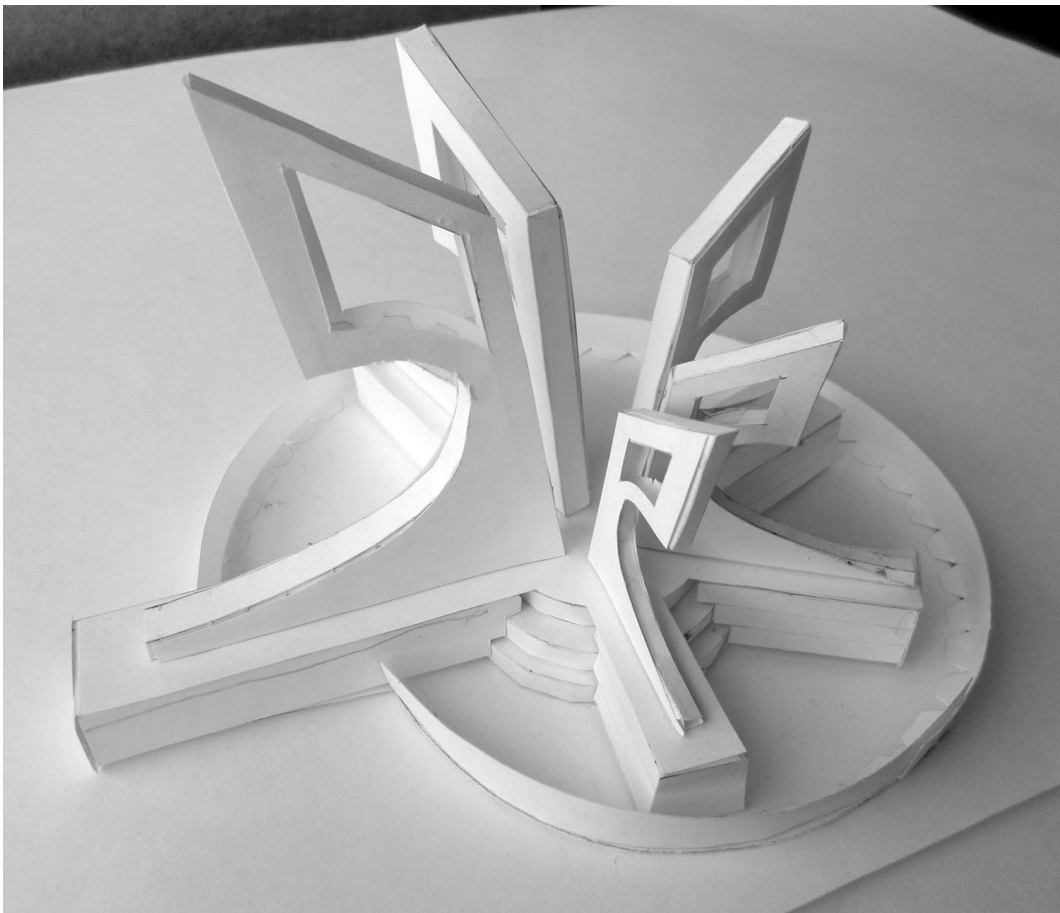
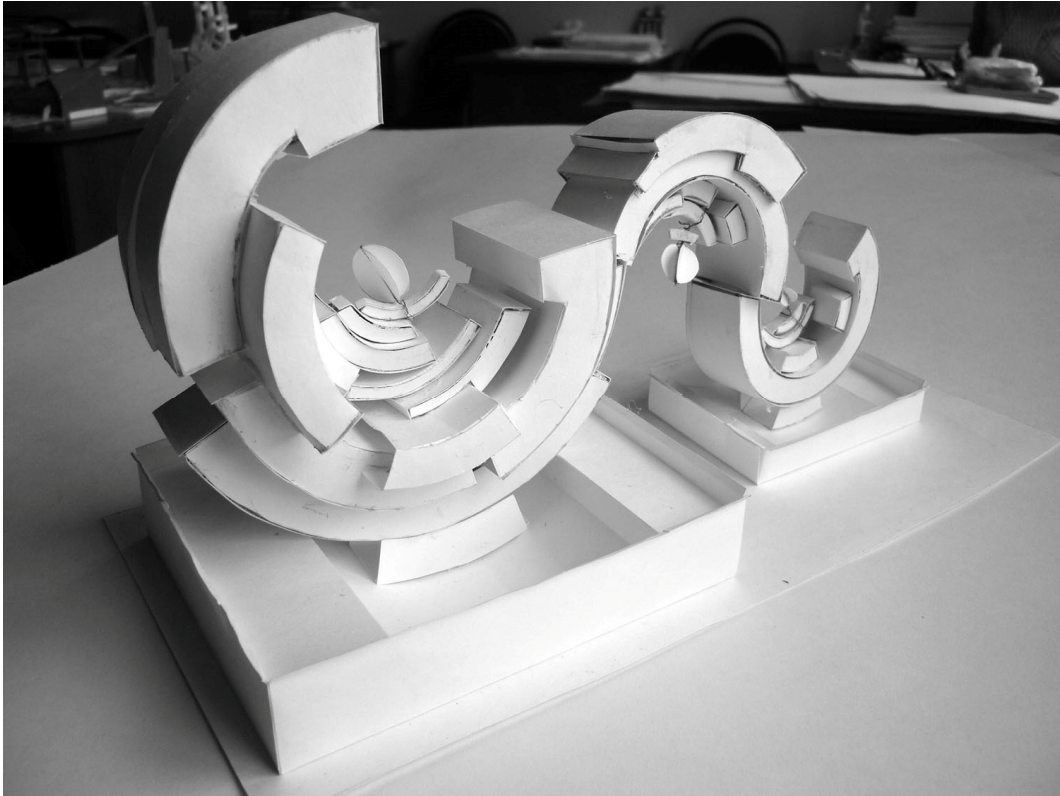


Fig. 63,64 Final architectural model

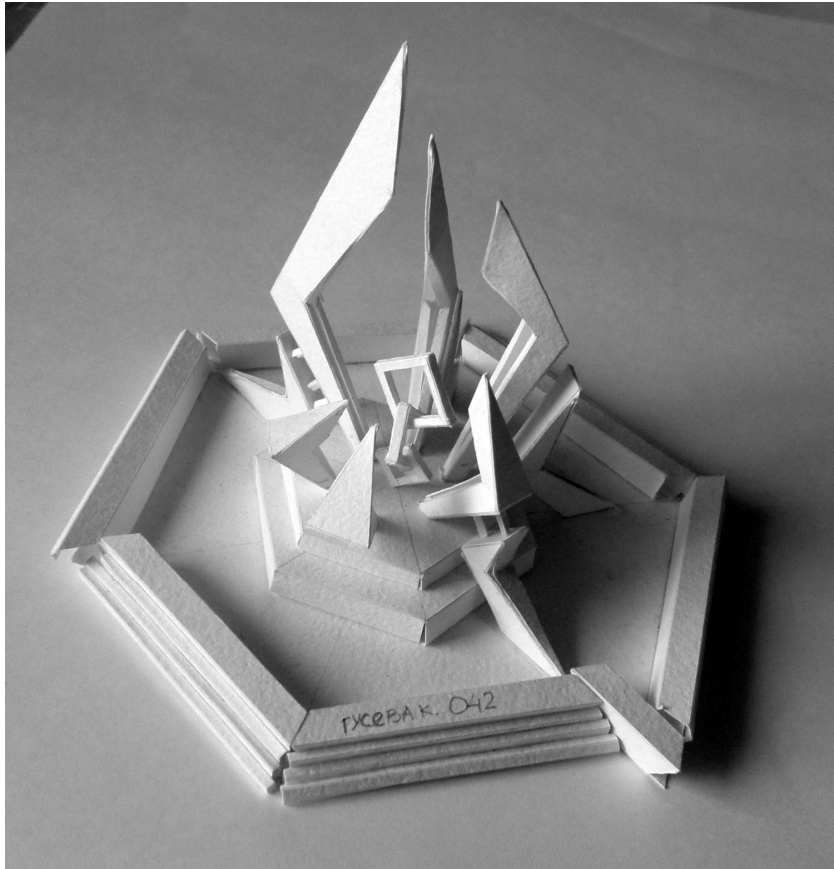
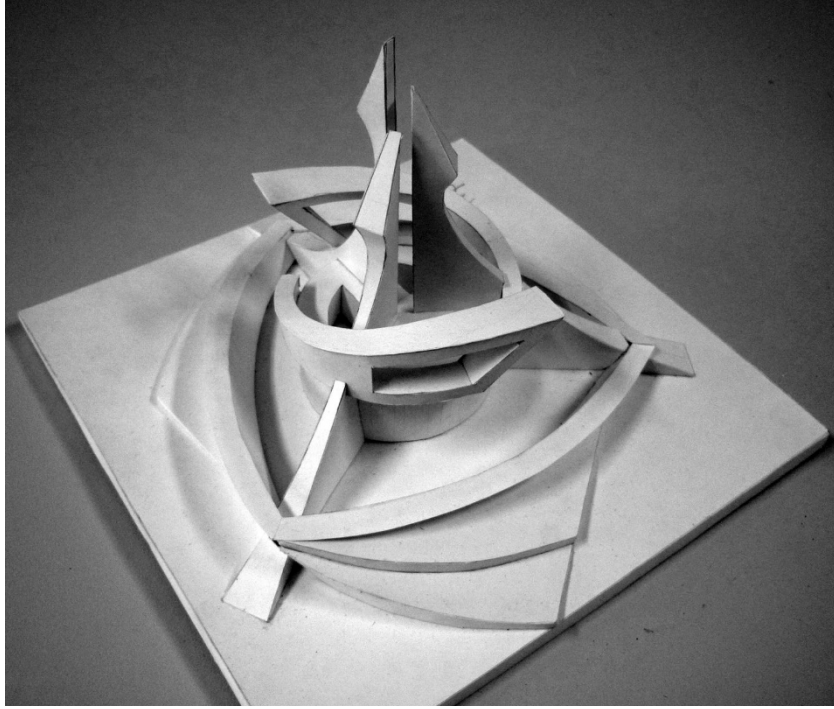


Fig. 65,66 Final architectural model

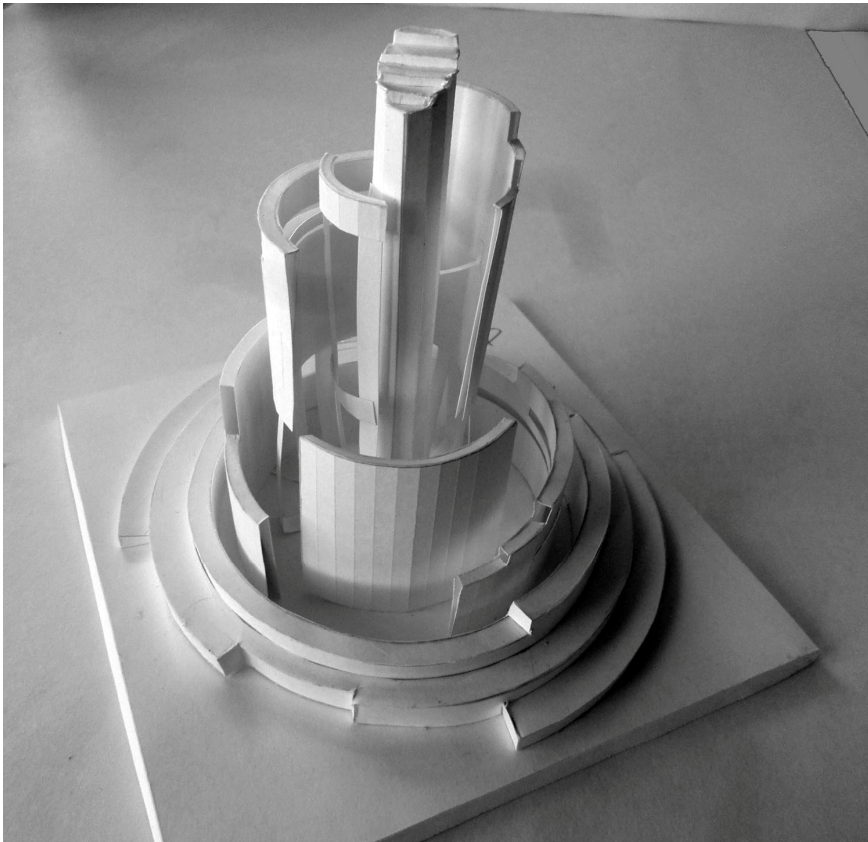
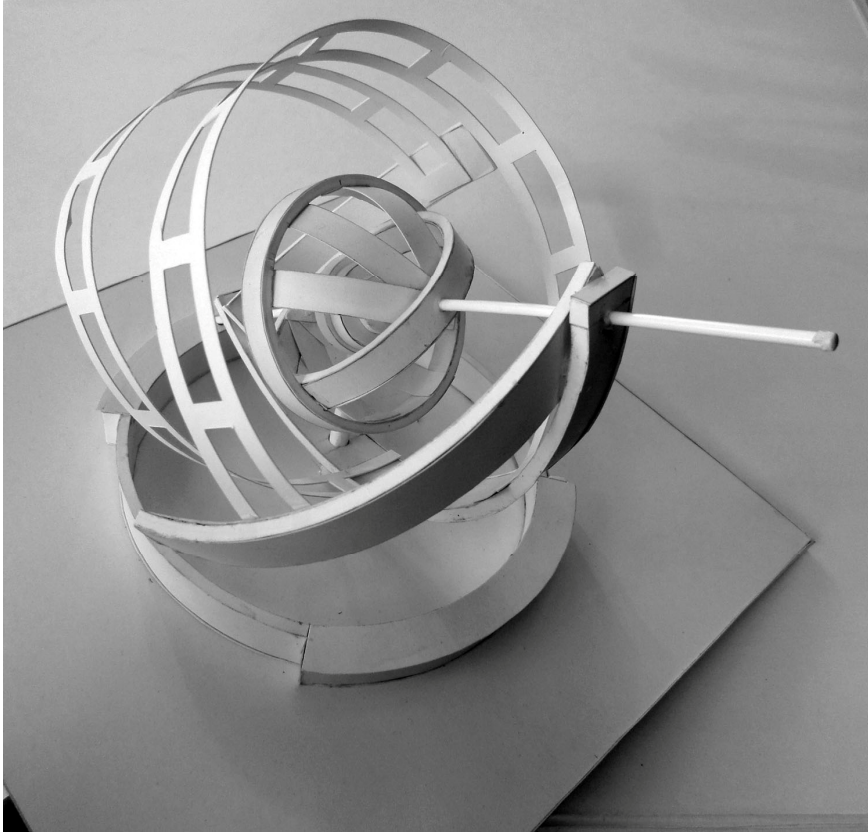


Fig. 67,68 Final architectural model

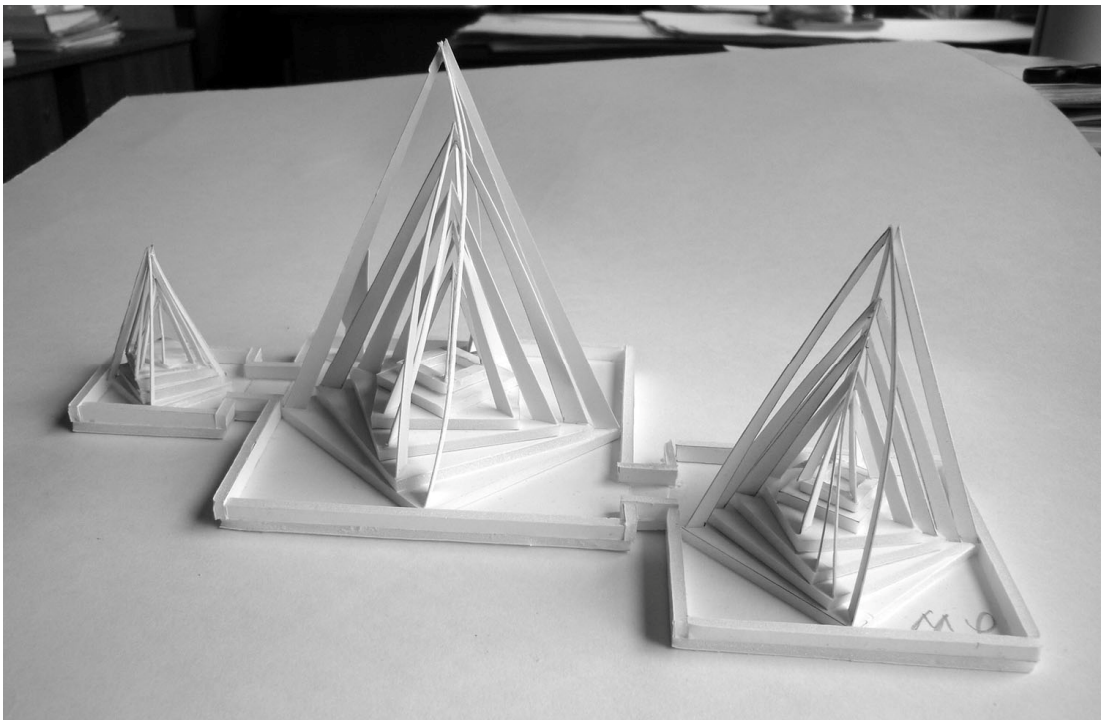
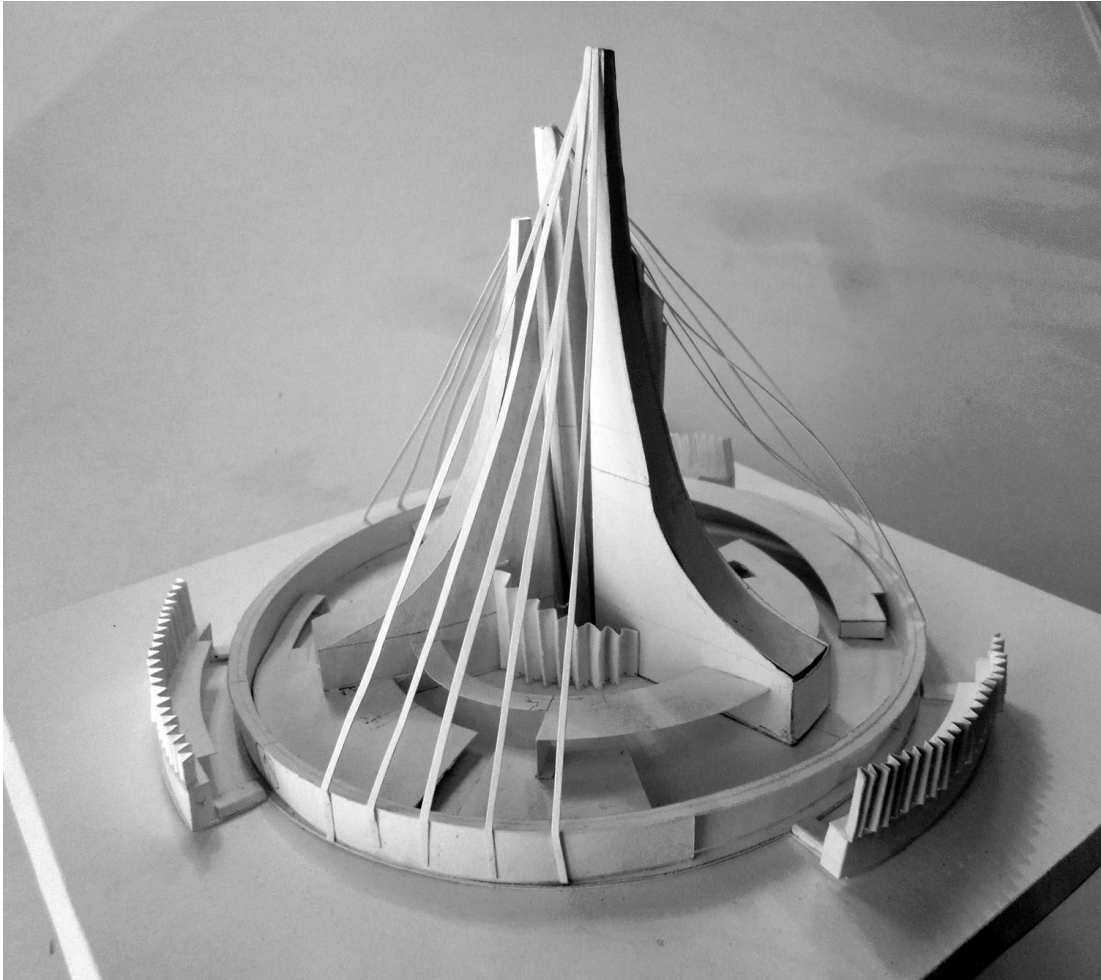


Fig. 69,70 Final architectural model

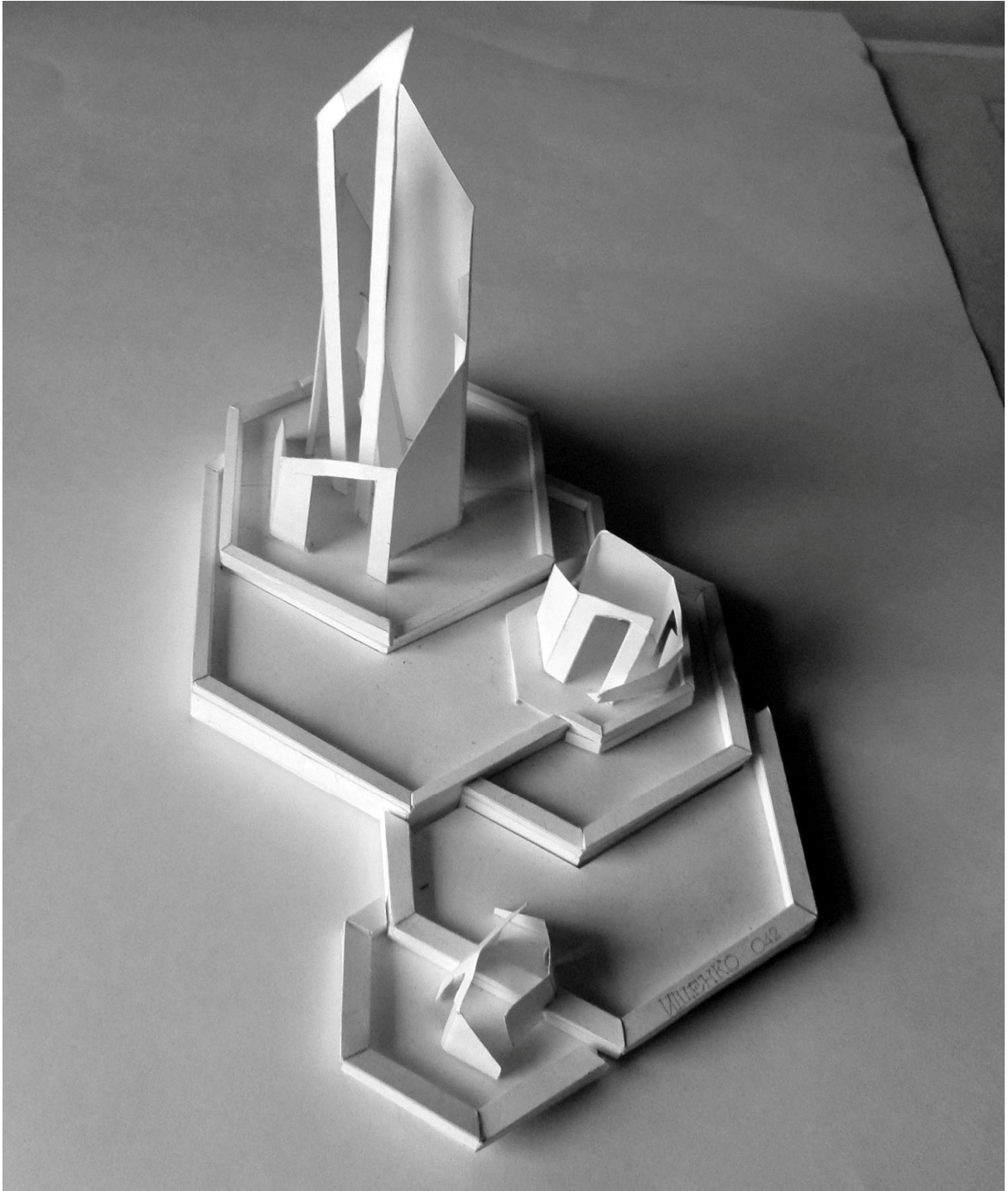


Fig. 71 Final architectural model

Дуцев Виктор Сергеевич  
Зайцев Алексей Александрович  
Лошкарева Дарья Александровна

## FOUNTAIN

Учебное пособие

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университет»

603950, Нижний Новгород, ул. Ильинская, 65.

Полиграфический центр ННГАСУ, 603950, Н.Новгород, Ильинская, 65

<http://www.nngasu.ru>, [src@nngasu.ru](mailto:src@nngasu.ru)