

designer's electronic signature	electronic signature of the auditor
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INVESTOR <sup>1</sup>	Western Balkan Six Chamber Investment Forum Plazza della Borsa nr. 14 34121 Trieste, Italy
FACILITY <sup>2</sup>	Junior High School "DANILO KISH"
LOCATION <sup>3</sup>	kp 1617/1 KO Budva, Municipality of Budva
PART OF THE TECHNICAL DOCUMENTATION <sup>4</sup>	ADAPTATION PROJECT OF THERMOTECHNICAL INSTALLATIONS
DESIGNER <sup>5</sup>	" THERMIA " DOO PODGORICA
RESPONSIBLE PERSON <sup>6</sup>	Zagorka Božović Pejanović dia
RESPONSIBLE ENGINEER <sup>7</sup>	Dejan Abazović, Bachelor of Mechanical Engineering
PROJECT ASSOCIATES <sup>8</sup>	Despotović Marko, B.Sc.

1. Name of the investor;
2. Name of the projected object;
3. Construction site, planning document, urban plot, cadastral plot;
4. Architectural project, construction project, electrotechnical project, i.e. mechanical project (if it is the cover page of the part of the technical documentation);
5. The name of the business company, legal entity, or entrepreneur who prepared part of the technical documentation;
6. The name of the responsible person in the company, legal entity, that is, the name and surname of the entrepreneur;
7. Name and surname of the chief engineer;
8. Name and surname of collaborators on the preparation of part of the technical documentation.

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## *1. TEXTUAL DOCUMENTATION*

*TECHNICAL DESCRIPTION*

## 1.1. TECHNICAL DESCRIPTION

### 1.1.1. General information about the facility

Facility:	Junior High School "DANILO KISH"
Location:	kp 1617/1 KO Budva, Municipality of Budva
Investor:	Western Balkan Six Chamber Investment Forum Piazza della Borsa nr. 14 34121 Trieste, Italy
Project:	ADAPTATION PROJECT OF THERMOTECHNICAL INSTALLATIONS

### 1.1.2. Project parameters

- Climatic zone: I zone
- Summer outside temperature: 37°C
- Winter outdoor temperature: -6°C
- Summer indoor temperature:
- Refrigerated space 25°C
- Winter indoor temperature:
- Heated space 21°C

### 1.1.3. General concept of thermotechnical installations

Perception architectural solutions For the subject object , occasion designing and like I selection installation led is account Yes se choose the best solution with flats what investment - exploitation conditions and solution which will provide tall level comfort .

- The school building consists of classrooms and corridors.

#### 1. Existing heating and cooling system

There are currently two heating systems in the facility:

- Radiator heating system for the entire facility, which is fed to the central boiler room of the facility
- Wall-mounted split units for air conditioning.

The existing air conditioners and two radiators in the bathrooms are being dismantled due to their unsuitable position.

#### 2. Air conditioning system with split wall systems

with an external and associated internal wall unit is planned for heating and cooling the classrooms .

System description: A split air conditioning system with a wall unit is a type of air conditioning system that

consists of an indoor wall unit and an outdoor unit. This system is very popular because of its efficiency and ease of use.

**Indoor wall unit:** The indoor wall unit is mounted on the wall inside the room you want to air condition. It usually has an attractive appearance and adapts to the interior of the room. This unit is responsible for regulating the temperature in the room and distributing cold or warm air. The indoor unit has a fan that strongly circulates the air through the room and blows it out through the grille. It also has a compressor that is responsible for regulating the air temperature.

**Outdoor unit:** The outdoor unit is located on the outside of the building or house. This unit usually has a condenser, compressor, fan and other components responsible for generating cold or warm air. The compressor in the outdoor unit compresses the refrigerant, causing its temperature to rise. Then that heat goes to the condenser where it is expelled from the system. The outdoor unit's fan helps blow away heat and ensures efficient cooling of the system.

**Functioning:** A split air conditioning system with a wall unit works through the circulation of the refrigerant that passes through the outdoor and indoor units. When cooling is switched on, the outdoor unit extracts heat from the interior of the room and expels it outside the system. During heating, the system works in reverse - the outdoor unit takes heat from the outside environment and transfers it inside, thus heating the room.

**Advantages:** A split air conditioning system with a wall unit has many advantages. First, it allows precise temperature control and provides comfort in the room. Also, this system is relatively quiet and aesthetically pleasing, considering that the indoor unit is placed on the wall. A split system is also energy efficient, resulting in lower electricity bills. In addition, the split system enables the possibility of heating during the winter months, providing multiple functionality.

**Conclusion:** A split air conditioning system with a wall unit is a reliable and efficient way to cool and heat rooms. Its ease of use, temperature control and energy efficiency make it a popular choice for many homes and businesses . +

The multi split system is an inverter-controlled device of the latest generation that enables stable and reliable operation in a wide range of external temperatures, i.e. cooling in the range from -10 to +48°C and heating in the range from -18 to +18°C.

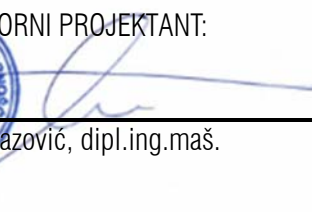
The connection of external and internal units is made with copper pipes of dimensions according to the manufacturer's recommendations, thickness and types according to valid standards (EN1075). Copper pipes are insulated with self-extinguishing synthetic rubber insulation with a thickness of 10 mm.

The pipeline is coated with thermal insulation to reduce losses along the pipeline route.

After assembly, the pipelines are vacuumed, tested with nitrogen under pressure and topped up with an additional amount of cooling fluid - freon (if necessary).

PVC pipes are provided for draining the condensate, which are used to drain the condensate into the nearest gutter.

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#### 1.1.4. List of used regulations, standards and literature

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The following regulations, standards and literature were used during the development of the MAIN MECHANICAL PROJECT:

- REGULATIONS
  - Law on Spatial Planning and Building Construction (Official Gazette of Montenegro, No. 64/17 and 44/18);
  - Law on Protection and Rescue (Official Gazette of Montenegro No. 13/07, 05/08, 86/09, 32/11 and 54/16);
  - Law on occupational health and safety (Official Gazette of Montenegro, no. 34/14 and 44/18);
  - Law on noise protection in the environment (Official Gazette of Montenegro, no. 28/11, 28/12 and 01/14);
  - Law on Waste Management (Official Gazette of Montenegro No. 64/11 and 39/16);
  - Law on the Environment (Official Gazette of Montenegro No. 48/08 and 52/16);
  - Law on Standardization (Official Gazette of Montenegro No. 13/08);
  - Rulebook on the handling of construction waste, the method and procedure of construction waste processing, the conditions and method of disposal of cement asbestos construction waste (Official Gazette of Montenegro, No. 50/12);
  - Rulebook on technical requirements for the protection of garages for passenger cars against fire and explosions (Official Gazette of Montenegro, No. 9/12);
  - Rulebook on occupational health and safety measures against the risk of exposure to noise (Official Gazette of Montenegro, No. 37/16);
  - Rulebook on safety measures and norms at work on work tools (Official Gazette of SFRY No. 18/91);
  - Rulebook on limit values of noise in the environment, methods of determining noise indicators and acoustic zones and methods of assessing the harmful effects of noise (Official Gazette of Montenegro, No. 60/11);
  - Rulebook on the method of preparation and content of technical documentation for the construction of the building (Official Gazette of Montenegro, No. 44/18).
- STANDARDS
  - ISO 5457 – Formats of technical drawings;
  - MEST EN ISO 5455:2014 – Technical drawings – Dimensions.
- LITERATURE
  - Recknagel, Sprengler, Schramek, Čeperković: Heating and air conditioning, Interklima, Vrnjačka Banja, 2012.
  - Branislav Todorović and Milica Milinković, Air distribution in air conditioning systems, SMEITS, Belgrade, 2003.
  - Branislav Živković, Zoran Stajić, Small thermotechnical handbook, SMEITS, Belgrade, 2003.
  - Boris Labudović and others, Manual for ventilation and air conditioning, 2nd edition, Energetika Marketing, Zagreb, 2003.

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*TECHNICAL REQUIREMENTS FOR WORK PERFORMANCE*

## 1.2. TECHNICAL REQUIREMENTS FOR WORK PERFORMANCE

### 1.2.1. GENERAL TERMS

1. The construction of investment facilities can be started when the funds for financing the investment facility are provided and approval for the construction is obtained.
2. The investor and the contractor, who is entrusted with the construction of the investment object, i.e. the execution of the works, conclude a construction contract. In addition to the basic provisions, the contract must also contain provisions on the date of commencement and completion of the works, on professional supervision of the construction of the building, on the guarantee terms for the quality of the works performed, and on the method of payment.
3. The contractor is obliged to carry out the entire installation according to this project, and in accordance with the valid regulations on the construction of investment facilities.
4. The contractor is obliged to inform the supervisory authority about the date of commencement of the works, 8 days in advance.
5. The contractor is obliged to:
  - a) to perform works according to valid technical regulations, norms and mandatory standards that apply to the construction of that type of investment facility;
  - b) to install material that corresponds to the prescribed standards, that is, that has a certificate issued by an organization registered for the activity of testing that material, if there is no standard for that material;
  - c) to take timely security measures for the investment object, equipment and investment material, workers, passers-by, traffic and neighboring objects;
  - d) to comply with the investment-technical documentation on the basis of which the building permit was issued;
  - e) to ensure through internal control that the works are performed in accordance with the provisions under a, b, c;
6. The contractor is obliged to keep a construction diary and an inspection book separately for each building. If work is carried out on several buildings at the same place, which represent a technical or functional unit, one construction diary and one inspection book can be kept.
7. During the execution of works, the investor is obliged to provide professional supervision, which can be performed by an authorized employee of the investor, who has the appropriate professional training and practice determined by the general act of the investor.
8. If the contractor notices a deficiency in the investment-technical documentation, he is obliged to warn the investor of these deficiencies in a timely manner.
9. If the investor does not remove the defects that he was warned about, the contractor is obliged to inform the management authority, which gave approval for the construction of the building, and stop the work, if these defects endanger the safety of the building, the life and health of people, or neighboring buildings.
10. If the contractor notices during the execution of the works that subsequent works must be carried out on the building, which are not included in the contractual estimate, or when changes occur that may have an impact on the performance and the consumption of materials, he is obliged to immediately submit a subsequent estimate to the investor. The contractor will begin the performance of subsequent works, only after the investor approves the estimate for those works.
11. If the contractor carries out the installation according to the approved project and with the materials provided by this project, he bears responsibility for the proper functioning of the system only in terms of the works performed, the quality of the materials and the capacity of individual elements.
12. Arbitrary changes to the project by the contractor are strictly prohibited.
13. For minor changes in relation to the adopted project, the consent of the competent authority is sufficient. If there is a need for major changes to the project, then it is necessary for the designer to rework the project and the reworked project must be sent back to the investor for approval.

14. If the investor disposes of some material and transfers it to the contractor for the purpose of installing it in the plant, the contractor is obliged to inspect all the material and discard any that are defective. If the contractor considers that the investor's material is not of the prescribed quality, he will refuse to install it and will state this in the construction diary. If the supervisory authority expressly requires the installation of inappropriate material, the contractor will install it, but then he is not responsible for it, nor for the consequences, and the guarantee is excluded for that part of the installation, which is confirmed by appropriate documentation in written form and mandatory entry in construction log.
15. The contractor is obliged, if during the execution of the works, he notices that the proposed solution is technically incorrect, bad or incompatible with the construction object or other installations, which were created on the construction site during the execution, to immediately inform the investor and request a change of the project. Also, if the contractor determines that due to an error in the project or due to wrong instructions of the investor, i.e. works carried out by his supervisory body to the detriment of durability, stability, functionality and quality, he is responsible for the resulting damage if he does not warn the investor of these facts by entering them in the construction diary.
16. If, during installation, the contractor notices that subsequent works must be carried out on the plant, which are not included in the contractual example, or changes that have an impact on the performance or scope of the plant, he is obliged to immediately submit a preliminary invoice to the investor for these subsequent works or changes to the plant, i.e. installation. The contractor will start performing subsequent works or plant changes only after the investor approves the estimate for those works. The investor must respond to the supplementary offer within 8 ÷ 15 days, otherwise it will be considered that the offer has not been accepted.
17. Included in the price of installation, i.e. installation (if the contract does not define otherwise):
  - a) complete assembly of the installation, its testing, regulation and commissioning;
  - b) training of workers immediately after completion of assembly;
  - c) compensation for installers, their assistants and other persons necessary for testing, regulation and test operation.
18. For certain professional works, the contractor must have technical management personnel on the construction site who have the legal right to handle such works. All workers must have appropriate qualifications and the actual professional knowledge required to perform work on a given type of installation. The supervisory authority has the right and duty to order the contractor to remove non-professional personnel from the construction site through the construction diary.
19. All manufacturers of equipment, work tools and devices with mechanized and electric drive are obliged to provide the user with a certificate from the appropriate professional institution in accordance with the current laws on safety, protection and health at work.
20. All waste and garbage that the contractor and his workers create during the performance of these works, he is obliged to take at his own expense from the construction site to the place where he is designated (by local self-government order).
21. The contractor himself is obliged to take the safety measures for the employees on this job in accordance with the current regulations.
22. Financial obligations between the investor and the contractor are mutually regulated by a contract that also regulates the method of payment.
23. During the execution of the works, the contractor is obliged to keep a construction diary on the construction site. All changes and deviations from the main project must be recorded in it. The construction diary is certified by the supervisory authority and the representative of the contractor.
24. In addition to the construction logbook, the investor's supervisory body keeps a construction book for its own account, in which all performed works are recorded. The construction book serves as the basis for drawing up the billing situation, as well as for permanent documentation of the scope of the works performed. The construction book must be sealed and certified by the investor, and signed by the supervisory authority and the representative of the contractor.
25. After completion of assembly work, the entire plant must be tested. The examination is carried out by the contractor with the obligatory presence of the supervisory authority.

26. Minutes must be drawn up about the performed examination, which must contain:
- subject of examination;
  - list of persons who performed and attended the interrogation;
  - date and time of examination;
  - the circumstances under which the test was conducted (temperature, rain, snow, etc.);
  - test results with accurately obtained values, photos, videos and the like;
  - a conclusion stating that the test results are satisfactory or not;
  - handwritten signature of the persons who conducted the examination and who attended the examination.
27. After the completion of the works, a technical inspection will be carried out by an expert committee formed by the administrative authority that issued the construction permit. Persons who have the status of employees of the investor, of the organization that issued the investment technical documentation, or of the contractor, persons who performed professional supervision and persons who supervise the application of the provisions of the Law on Designing and construction of investment facilities.
28. For technical acceptance, the contractor or investor is obliged to complete and present the following documentation to the commission:
- approvals for construction with the consent of competent authorities and institutions (MUP, PTT, water management, energy, occupational safety, fire protection, urban planners, etc.);
  - complete investment-technical documentation (mechanical-technological, construction and electrotechnical project, workshop documentation, etc.) with changes and additions;
  - evaluation of the authorized professional institution for construction of facilities from the aspect of occupational safety and fire protection;
  - certification documentation of the installed material;
  - record of the control and acceptance of the plant before installation;
  - record, test report and test results;
  - welder certificates;
  - work diary and construction book;
  - report on the internal review of the performed works;
  - commissioning and maintenance manual with plant diagrams.
29. Approval for the use of the facility is issued within 15 days from the date of receipt of the technical committee's proposal for the use of the facility.
30. Approval for the use of the facility is given by the administrative authority, which formed the commission for technical inspection.
31. Approval for the use of the building is given at the request of the investor or contractor.
32. The warranty period established by the contract for the performed works is calculated from the day of acceptance of the object by the commission for technical inspection, i.e. from the day of obtaining approval for the use of the investment object.

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*THE PROGRAM CONTROLS / INSURANCE QUALITY WITH  
CONDITIONS FOR FULFILLMENT BASIC REQUEST FOR OBJECT  
DURING CONSTRUCTION / MAINTENANCE OBJECT*

### 1.3. THE PROGRAM CONTROLS | INSURANCE QUALITY WITH CONDITIONS FOR FULFILLMENT BASIC REQUEST FOR OBJECT DURING CONSTRUCTION | MAINTENANCE OBJECT

1. An integral part of the project documentation are:

- technical description,
- calculation,
- general, technical and technological conditions for works and designed equipment,
- quality control and assurance program,
- attached drawings.

2. All materials for the performance of the installation in question must be provided by the contractor according to the material specification in the project documentation, and in accordance with the applicable legal regulations.

3. Attestations and certificates proving the quality of the installed material must be submitted for all installed material and equipment.

4. The investor is obliged to ensure constant professional supervision over the execution of the contracted works.

5. Before the start of the works, the investor is obliged to provide the contractor with the names of authorized persons to perform professional supervision over the execution of the works.

6. The contractor is obliged to appoint his authorized representative - the works manager, before the start of the works, and to notify the investor in writing.

7. All problems regarding the contracted works will be solved by the investor with the contractor, through the person authorized to carry out expert supervision.

8. The contractor undertakes to regularly enter in the construction diary all the necessary data, which he is obliged to enter, and to enable the person authorized to carry out professional supervision to inspect the construction diary on a daily basis.

9. All works related to the installation in question must be professionally and qualitatively performed exactly according to the drawings and technical description, and according to the instructions of the designer and the supervisory authority.

10. The entire installation must be made completely airtight, which the contractor guarantees with appropriate certificates of the performed test at the appropriate pressure.

11. Upon completion of the contracted works, and before the start of use, i.e. putting the installation into operation, the investor is obliged to request a technical inspection of the performed works in order to determine their technical correctness.

12. The contractor is obliged to deliver all warranty cards, attestations and certificates of the installed material and equipment, together with all the necessary instructions for handling and maintenance of the completed installation, to the investor before the technical inspection.

13. The contractor guarantees the quality of the performed works for 2 (two) years from the date of technical acceptance, and for the installed equipment according to the equipment manufacturer's warranty card.

14. The contractor is not responsible for defects caused by violent damage or unprofessional use of the installed installation.

15. Inspections of installations should be performed at least once a year and a certificate of correct functioning of installations (certificate of installation functionality) should be obtained from the authorized organization.

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*INSTRUCTIONS FOR MANAGING CONSTRUCTION WASTE OR  
HAZARDOUS WASTE GENERATED DURING CONSTRUCTION ,  
DESTRUCTION OR REMOVAL OF BUILDINGS*

#### 1.4. INSTRUCTIONS FOR MANAGEMENT OF **CONSTRUCTION WASTE, OR HAZARDOUS WASTE GENERATED DURING CONSTRUCTION , DISPOSAL OR REMOVAL OF BUILDINGS**

Waste were used when creating instructions for the management of construction waste, i.e. hazardous waste generated during the construction, use, or removal of an object . method and procedure of construction waste processing, conditions and method of disposal of cement asbestos construction waste (Official Gazette of Montenegro, no. 50/12).

Waste management is carried out in a way that does not create a negative impact on the environment and human health, and in particular:

- on water, air, soil, plants and animals;
- in terms of noise and smell;
- to areas of special interest (protected natural and cultural assets).

Waste management is based on the following principles:

- a) sustainable development, which ensures more efficient use of resources, reduction of the amount of waste and handling of waste in a way that contributes to the achievement of the goals of sustainable development;
- b) proximity and regional waste management, in order to process waste as close as possible to the place of generation in accordance with the economic justification of the choice of location, while regional waste management is ensured by the development and implementation of regional strategic plans based on national policy;
- c) precautionary measures, i.e. preventive action, by taking measures to prevent negative impacts on the environment and human health, even in the absence of scientific and professional data;
- d) "polluter pays", according to which the waste producer bears the costs of waste management and preventive action and the costs of remedial measures due to negative impacts on the environment and human health;
- e) hierarchy, which ensures compliance with the order of priorities in waste management, namely: prevention, preparation for reuse, recycling and other methods of processing (use of energy) and waste disposal.

Waste management plans and programs are given at the state and local level. The State Waste Management Plan is the basic document that determines the long-term goals of waste management and establishes the conditions for rational and sustainable waste management in Montenegro. The local plan is adopted by the assembly of the local self-government unit, for the period for which the National Plan was adopted. The local plan can be changed and supplemented as needed. The local plan must be harmonized with the national plan.

The municipal body or another state body that is responsible for spatial planning determines and approves the location for the disposal of soil excavated from the construction site and other construction waste. In accordance with this, the contractor is obliged to request a permit from the competent Municipality for the disposal of construction waste.

When construction waste is generated, it is necessary to create documents that record the amounts and types of waste. These records must be kept regularly in order to know the exact amount of waste that was generated as well as the waste that was taken over by the companies with which the contract was signed.

Hazardous waste management is the responsibility of the Ministry of Sustainable Development and Tourism, and the waste management system involves the participation of all entities from the local and national level.

The local self-government unit will organize the collection of hazardous waste, by providing free disposal of these types of waste in existing and newly constructed recycling yards. The collected quantities of this waste will be carried out by the company that manages the recycling yard and handed over to the authorized legal entity for the collection of hazardous waste, in accordance with legal regulations and obligations.



**1.4.1. INSTRUCTIONS FOR MANAGEMENT OF CONSTRUCTION WASTE**

1. Construction waste is waste generated during the construction, maintenance and demolition of construction facilities.
2. Dealing with construction waste at the construction site:
  - Construction waste on the construction site is stored separately by type of construction waste in accordance with the waste catalog and separately from other waste, in a way that does not pollute the environment;
  - Disposal of construction waste that is not temporarily stored on the construction site or in the facility where construction work is being performed can be done in containers placed on the construction site, next to the construction site or next to the facility where construction work is being performed;
  - Containers must be made in a way that enables waste to be transported to a facility for further processing without reloading;
  - The investor must ensure that hazardous construction material is separated from the building, in order to prevent the mixing of hazardous construction material with non-hazardous construction waste, if this is technically feasible;
  - Construction waste can be temporarily stored on the construction site until the completion of construction works, for a maximum of one year;
  - Construction waste can be temporarily stored at another construction site of the investor or another place arranged for the temporary storage of construction waste.
3. Construction waste management plan:
  - The investor of the building, whose volume of the building together with the earth excavation is greater than 2,000 m<sup>3</sup>, draws up a construction waste management plan;
  - The investor keeps records of the type and amount of construction waste in accordance with the law;
  - The construction waste management plan also contains information on:
    - a) the method of separation of hazardous construction waste before the removal of the building, if the removal of the building is foreseen;
    - b) method of separate collection of construction waste at the construction site;
    - c) method of processing construction waste at the construction site;
    - d) the estimated volume of earth excavation, caused by construction works on the construction site and its handling;
    - e) to the estimated volume of use of earth excavation on the construction site that was not caused by construction works on the construction site.
4. Construction waste is handed over to the construction waste collector or directly to the construction waste processing plant by the investor or construction contractor authorized by the investor.
5. The investor can process construction waste at the construction site based on a permit in accordance with the law.
6. Construction waste (waste concrete, bricks, ceramics and construction material based on gypsum or a mixture of construction waste with earth excavation) can be reused for construction work on the construction site where the waste was created if the volume of waste does not exceed 50 m<sup>3</sup>.
7. The collector of construction waste can store construction waste for a maximum of one year in a construction waste processing plant.
8. Construction waste processing:
  - Processing of construction waste is carried out in facilities for processing construction waste in accordance with the law;
  - The facility for processing construction waste must be surrounded by a fence at least two meters high to prevent access by unauthorized persons;
  - In the construction waste processing plant, measures must be taken to prevent dust emission, wind blowing of small construction material and noise emission, in order to protect the environment;

- The facility for processing construction waste must be equipped with equipment for washing vehicle wheels before entering the public road;
- In the construction waste processing plant, more than 70% of construction waste must be recycled;
- The facility for processing construction waste must ensure further processing or removal of the remains of construction waste generated during recycling in the facility for processing construction waste.

#### 1.4.2. GUIDELINES FOR HAZARDOUS WASTE MANAGEMENT

1. Hazardous waste is waste that contains elements or compounds that have one or more of the following dangerous properties: explosiveness, reactivity, flammability, irritation, harmfulness, toxicity, infectivity, carcinogenicity, corrosivity, mutagenicity, teratogenicity, ecotoxicity, corrosiveness and the property of releasing poisonous gases by chemical or biological reaction and sensitivity/irritability, as well as waste from which, after disposal, another substance with some of the dangerous properties may be formed.
2. Mixing different types of hazardous waste and mixing hazardous with non-hazardous waste is prohibited.
3. The mixing of hazardous waste also includes the dilution of hazardous substances.
4. Waste can be mixed under the condition that mixing it increases the safety of waste processing procedures and if:
  - mixing is carried out in accordance with the waste processing permit;
  - the mixing of waste does not increase the negative impact on the environment and human health;
  - is a mixing procedure in accordance with the best available techniques.
5. During collection, transportation and temporary storage, hazardous waste is packaged and labeled in accordance with the law governing the transportation of hazardous materials.
6. Hazardous waste during transportation within the country must be accompanied by a document on the transportation of hazardous materials, in accordance with the law.
7. Hazardous waste can be in electronic form.
8. The collection, processing or disposal of hazardous municipal waste can be carried out by a company or an entrepreneur that has a permit for waste processing.
9. The collection or transport of waste can be carried out by a company or an entrepreneur if it has the equipment for the collection or transport of waste and the required number of employees.
10. It is forbidden for a business company or an entrepreneur to accept waste from an owner who does not generate waste in the course of carrying out activities or activities.
11. Means and equipment used to collect or transport waste must ensure the prevention of scattering or overflowing of waste and the spread of dust, noise and odors.
12. When carrying out the work of collecting, i.e. transporting waste in a vehicle used to transport waste, a company or entrepreneur must have:
  - a copy of the act of registration in the register of waste collectors or transporters;
  - waste transport form.
13. The means and equipment used to collect or transport hazardous waste must meet the conditions established by the law governing the transportation of hazardous materials.
14. Waste disposal is carried out at a location designated for that purpose by a spatial planning document, as well as in facilities or facilities that meet the conditions established by law.
15. Waste disposal is carried out in accordance with the law.
16. It is forbidden to burn waste in the open.

Pogorica, March. 2024



ODGOVORNI PROJEKTANT:

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## *2. BUDGET DOCUMENTATION*

## *2.1 SPECIFICATION*

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
<b>A. DISMANTLING OF EXISTING EQUIPMENT</b>					
1	Dismantling the existing outdoor unit of the split system intended for air conditioning of the premises. When demotating, remove the carrier of the external unit and the pipeline from the outside to the indoor unit.	pcs.	8		
2	Dismantling of the existing internal wall unit split system intended for air conditioning of the premises. When demotating, remove the carrier of the inner unit and the pipeline from the outside to the indoor unit.	pcs.	8		
3	Discharging the heating system to dismantle the radiator.	pcs.	1		
4	Dismantling of existing aluminium radiators connected to the central heating system of the school.	pcs.	2		
<b>A. TOTAL DISASSEMBLY OF EXISTING EQUIPMENT</b>					
<b>B. AIR CONDITIONING EQUIPMENT</b>					
1	Supply, delivery and assembly of indoor wall unit multi system.  Heating capacity: 9.1 kW Cooling capacity: 7.9 kW Energy class: A++ Working fluid: Freon R32 Outside unit dimensions: 950x834x330mm Input current of external unit: 2230W Power supply to outdoor unit: 1pH / 220-240V / 50Hz <i>Complete with a carrier for the outdoor unit.</i>	pcs.	1		
2	Supply, delivery and installation of outdoor unit multi system.  Heating capacity: 5.1 kW Cooling capacity: 4.2 kW Energy class: A++ Working fluid: Freon R32 External unit dimensions: 837x308x189mm Input current of external unit: 50W Power supply to outdoor unit: 1pH / 220-240V / 50Hz	pcs.	1		
3	Procurement, delivery and assembly of outdoor unit multi system.				

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
	Heating capacity: 3.2 kW Cooling capacity: 2.5 kW Energy class: A++ Working fluid: Freon R32 External unit dimensions: 837x308x189mm Input current of external unit: 50W Power supply to outdoor unit: 1pH / 220-240V / 50Hz	pcs.	2		
4	Procurement, delivery and installation of indoor and outdoor unit split system. Heating capacity: 9.1 kW Cooling capacity: 7.9 kW Energy class: A++ Working fluid: Freon R32 Indoor unit dimensions: 998×345×210 mm External unit dimensions: 770×288×545 mm Pipeline: Ø6,35/9,52mm Input current internal unit: 30W Input current of external unit: 2230W Power supply to outdoor unit: 1pH / 220-240V / 50Hz <i>Complete with a carrier for the outdoor unit.</i>	pcs.	6		
5	Supply, delivery and installation of indoor and outdoor split system units. Heating capacity: 5.8 kW Cooling capacity: 5.0 kW Energy class: A++ Working fluid: Freon R32 Indoor unit dimensions: 998×345×210 mm External unit dimensions: 770×288×545 mm Input current internal unit: 30W Input current of the external unit : 1611W Power supply to outdoor unit: 1pH / 220-240V / 50Hz <i>Complete with a carrier for the outdoor unit.</i>	pcs.	2		
6	Procurement, delivery and assembly of AL-pex pipe distribution for connecting condensate from indoor units.	m.	100		
7	Procurement, delivery and cable of PPY cross-section 5x1.5 mm <sup>2</sup> intended for communication between indoor units and outdoor units.	m.	100		

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
8	Procurement of materials and production of pipelines from copper pipes, for the production of pipe installation for the distribution of freon zsplit system, of the following dimensions:				
	Cu Ø6,35	m.	100		
	Cu Ø9,52	m.	20		
	Cu Ø12,7	m.	80		
9	For connecting and sealing material, knees, consoles, holders, pipe clamps, pipe hangers, metal rosettes, wall bushings, acetylene, oxygen and similar material required for assembly, 50% of the value of the pipe is taken.		50%		
10	Procurement of materials and production of pipe insulation, pipe insulation with vapor barrier, 9 mm thick, manufactured by Armacell m, together with assembly glue and joint glue tapes. Fire-fighting flammability class B1. (DIN4102, JUS. U.J1.055). It is paid per m insulation.				
	AC Ø6x9	m.	100		
	AC Ø9x9	m.	20		
	AC Ø12x9	m.	80		
11	Drilling concrete reinforced wall for passing copper pipeline with rubble cleaning and removal to landfill. The price includes the rehabilitation of the betosn mortar breakthrough.	pcs.	9		
12	Rinsing the installation with nitrogen, testing for permeability (nitrogen pressure 45 bar for 24 hours) and vacuuming.	pcs.	9		
13	Filling the heating system after mounting the radiator with complete irradiation of the system.	pcs.	1		
14	Reassembly of dismantled existing aluminium radiators connected to the central heating system of the school.	pcs.	3		
15	Delivery and installation of radiator carrying set, radiator valve and subventil.	pcs.	3		

#### B. TOTAL AIR CONDITIONING OF TECHNICAL ROOMS

#### C. PREPARATORY FINISHING WORKS

- Preparatory work that includes:

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
	<ul style="list-style-type: none"> <li>- familiarization with the facility and technical documentation;</li> <li>- development of dynamic plans;</li> <li>- opening a construction site;</li> </ul>				
	-keeping a diary of works, inspection books, sheets of completed works (construction books) and other necessary documentation.	pcs.	1		
2	Final works that include: <ul style="list-style-type: none"> <li>- participation in all activities until the handover of the facility;</li> <li>- drafting instructions for operation and maintenance of the installation;</li> <li>- preparation of studies with attestation documentation.</li> </ul>	pcs.	1		
3	Transport costs covering all costs on the external and internal transport of materials and equipment.	pcs.	1		
<b>C. TOTAL PREPARATORY FINISHING WORKS TOTAL</b>					
<b>RECAPITULATION</b>					
<b>A. TOTAL DISASSEMBLY OF EXISTING EQUIPMENT</b>					
<b>B. TOTAL AIR CONDITIONING OF TECHNICAL ROOMS</b>					
<b>C. TOTAL PREPARATORY FINISHING WORKS TOTAL</b>					
<b>TOTAL</b>					
<b>PDV (21%)</b>					
<b>ALL TOTAL</b>					

RESPONSIBLE DESIGNER:

Dejan Abazović dipl.ing.maš



## *2.2 ESTIMATION AND ESTIMATION OF WORKS*

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
<b>A. DISMANTLING OF EXISTING EQUIPMENT</b>					
1	Dismantling the existing outdoor unit of the split system intended for air conditioning of the premises. When demotating, remove the carrier of the external unit and the pipeline from the outside to the indoor unit.	pcs.	8		
2	Dismantling of the existing internal wall unit split system intended for air conditioning of the premises. When demotating, remove the carrier of the inner unit and the pipeline from the outside to the indoor unit.	pcs.	8		
3	Discharging the heating system to dismantle the radiator.	pcs.	1		
4	Dismantling of existing aluminium radiators connected to the central heating system of the school.	pcs.	2		
<b>A. TOTAL DISASSEMBLY OF EXISTING EQUIPMENT</b>					
<b>B. AIR CONDITIONING EQUIPMENT</b>					
1	Supply, delivery and assembly of indoor wall unit multi system .  Heating capacity: 9.1 kW Cooling capacity: 7.9 kW Energy class: A + + Working fluid: Freon R32 Outside unit dimensions: 950x834x330mm Input current of external unit: 2230W Power supply to outdoor unit: 1pH / 220-240V / 50Hz <i>Complete with a carrier for the outdoor unit.</i>	pcs.	1		
2	Supply, delivery and installation of outdoor unit multi system.  Heating capacity: 5.1 kW Cooling capacity: 4.2 kW Energy class: A + + Working fluid: Freon R32 External unit dimensions: 837x308x189mm Input current of external unit: 50W Power supply to outdoor unit: 1pH / 220-240V / 50Hz	pcs.	1		
3	Procurement, delivery and assembly of outdoor unit multi system.				

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
	Heating capacity: 3.2 kW Cooling capacity: 2.5 kW Energy class: A++ Working fluid: Freon R32 External unit dimensions: 837x308x189mm Input current of external unit: 50W Power supply to outdoor unit: 1pH / 220-240V / 50Hz	pcs.	2		
4	Procurement, delivery and installation of indoor and outdoor unit split system. Heating capacity: 9.1 kW Cooling capacity: 7.9 kW Energy class: A++ Working fluid: Freon R32 Indoor unit dimensions: 998×345×210 mm External unit dimensions: 770×288×545 mm Pipeline: Ø6,35/9,52mm Input current internal unit: 30W Input current of external unit: 2230W Power supply to outdoor unit: 1pH / 220-240V / 50Hz <i>Complete with a carrier for the outdoor unit.</i>	pcs.	6		
5	Supply, delivery and installation of indoor and outdoor split system units. Heating capacity: 5.8 kW Cooling capacity: 5.0 kW Energy class: A++ Working fluid: Freon R32 Indoor unit dimensions: 998×345×210 mm External unit dimensions: 770×288×545 mm Input current internal unit: 30W Input current of the external unit : 1611W Power supply to outdoor unit: 1pH / 220-240V / 50Hz <i>Complete with a carrier for the outdoor unit.</i>	pcs.	2		
6	Procurement, delivery and assembly of AL-pex pipe distribution for connecting condensate from indoor units.	m.	100		
7	Procurement, delivery and cable of PPY cross-section 5x1.5 mm <sup>2</sup> intended for communication between indoor units and outdoor units.	m.	100		

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
8	Procurement of materials and production of pipelines from copper pipes, for the production of pipe installation for the distribution of freon zsplit system, of the following dimensions:				
	Cu Ø6,35	m.	100		
	Cu Ø9,52	m.	20		
	Cu Ø12,7	m.	80		
9	For connecting and sealing material, knees, consoles, holders, pipe clamps, pipe hangers, metal rosettes, wall bushings, acetylene, oxygen and similar material required for assembly, 50% of the value of the pipe is taken.		50%		
10	Procurement of materials and production of pipe insulation, pipe insulation with vapor barrier, 9 mm thick, manufactured by Armacell m, together with assembly glue and joint glue tapes. Fire-fighting flammability class B1. (DIN4102, JUS. U.J1.055). It is paid per m insulation.				
	AC Ø6x9	m.	100		
	AC Ø9x9	m.	20		
	AC Ø12x9	m.	80		
11	Drilling concrete reinforced wall for passing copper pipeline with rubble cleaning and removal to landfill. The price includes the rehabilitation of the betosn mortar breakthrough.	pcs.	9		
12	Rinsing the installation with nitrogen, testing for permeability (nitrogen pressure 45 bar for 24 hours) and vacuuming.	pcs.	9		
13	Filling the heating system after mounting the radiator with complete irradiation of the system.	pcs.	1		
14	Reassembly of dismantled existing aluminium radiators connected to the central heating system of the school.	pcs.	3		
15	Delivery and installation of radiator carrying set, radiator valve and subventil.	pcs.	3		

#### B. TOTAL AIR CONDITIONING OF TECHNICAL ROOMS

#### C. PREPARATORY FINISHING WORKS

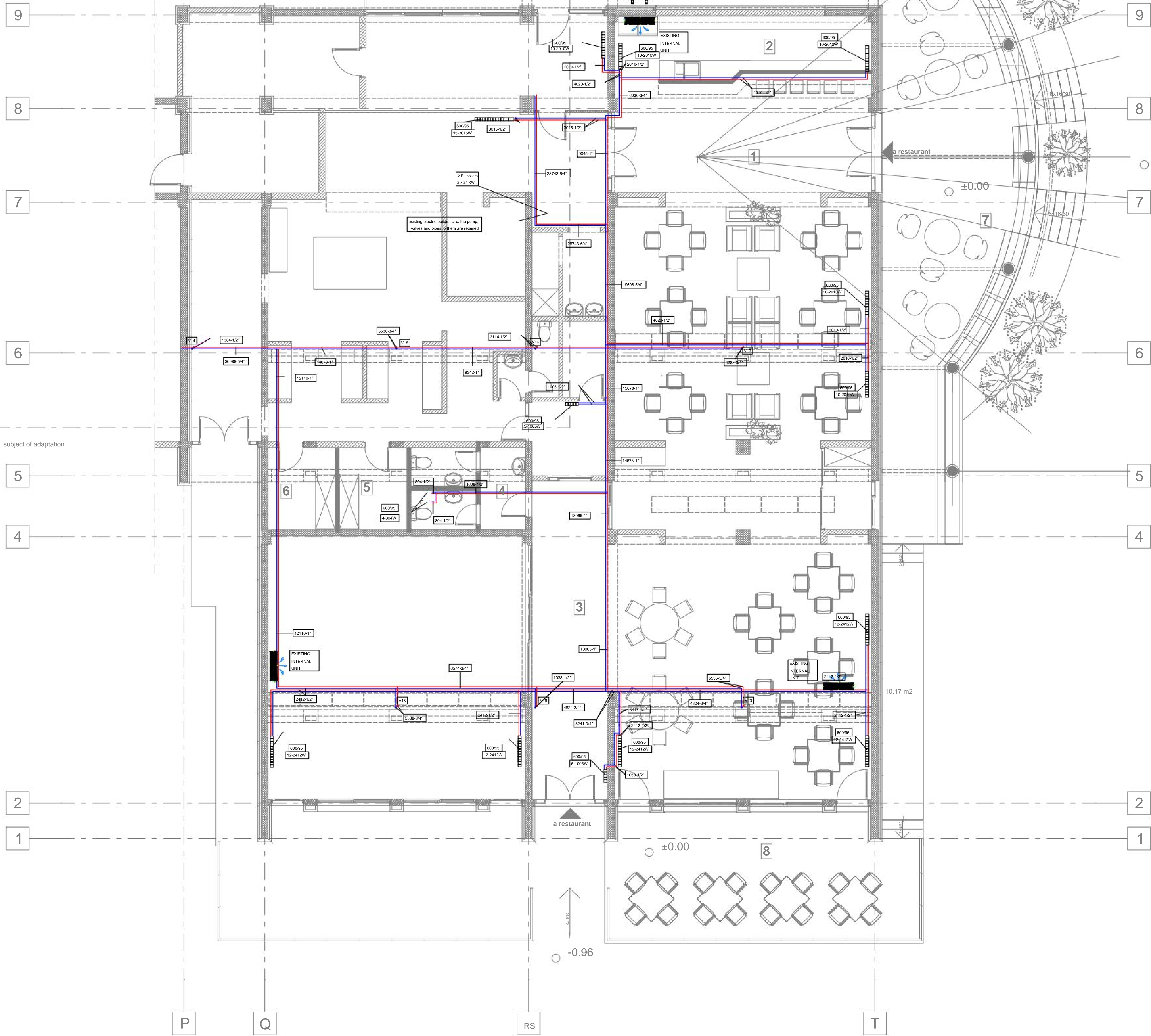
- 1 Preparatory work that includes:

Red. Br.	POSITION DESCRIPTION	Jed. Mjere	Količina	Jed.cijena (€)	Ukupno (€)
	<ul style="list-style-type: none"> <li>- familiarization with the facility and technical documentation;</li> <li>- development of dynamic plans;</li> <li>- opening a construction site;</li> </ul>				
	-keeping a diary of works, inspection books, sheets of completed works (construction books) and other necessary documentation.	pcs.	1		
2	Final works that include: <ul style="list-style-type: none"> <li>- participation in all activities until the handover of the facility;</li> <li>- drafting instructions for operation and maintenance of the installation;</li> <li>- preparation of studies with attestation documentation.</li> </ul>	pcs.	1		
3	Transport costs covering all costs on the external and internal transport of materials and equipment.	pcs.	1		
<b>C. TOTAL PREPARATORY FINISHING WORKS TOTAL</b>					
<b>RECAPITULATION</b>					
<b>A. TOTAL DISASSEMBLY OF EXISTING EQUIPMENT</b>					
<b>B. TOTAL AIR CONDITIONING OF TECHNICAL ROOMS</b>					
<b>C. TOTAL PREPARATORY FINISHING WORKS TOTAL</b>					
<b>TOTAL</b>					
<b>PDV (21%)</b>					
<b>ALL TOTAL</b>					

RESPONSIBLE DESIGNER:

Dejan Abazović dipl.ing.maš

### *3 GRAPHIC DOCUMENTATION*



LEGEND		
TASK	DESCRIPTION	PLAN/VIEW
EXISTING EXTERIOR UNIT	Dismantling of the existing outdoor unit	8
EXISTING INTERNAL UNIT	Dismantling of the existing indoor unit	8

**Legend**

- existing wall
- existing reinforced concrete
- newly designed - GK, under construction
- newly designed - parquet
- newly designed - keramocke pl.
- greenery
- newly designed - keramocke pl.

restaurant hall	177.07 m <sup>2</sup>
2 bar	10.58 m <sup>2</sup>
3 entrance hall	23.29 m <sup>2</sup>
4 Toilet	8.42 m <sup>2</sup>
5 wardrobe	5.27 m <sup>2</sup>
6 wardrobe	5.28 m <sup>2</sup>
7 covered terrace	81.04 m <sup>2</sup>
8 terrace	38.32 m <sup>2</sup>

- a base of ground floor -

Designer: <b>THERMIA</b> 600/95 Dizajnirao i Projektirao www.thermia.hr		Investor: Western Balkan Six Chamber Investment Forum Piazza della Borsa nr. 14 34121 Trieste, Italy	
Facility: Junior High School "Dario Kisić"		Location: lg. 16171 KO Bušva, Municipality of Bušva	
Chief engineer: Zagorka Bobović Peganović dia	Initial:	Type of technical documentation: ADAPTATION PROJECT OF THERMOTECHNICAL INSTALLATIONS	
Engineer in charge: Dejan Abacović, dip.ing. masch.	Initial:	Part of the technical documentation: MECHANICAL INSTALLATIONS	Scale: R=1:50
Collaborator: Marko Despotović, B.Sc.		Interim: Graphic documentation	No. attachments: TT01
Drawing: Existing condition - Base of the ground floor			
Date of manufacture and NP:  March, 2024		Audit date and MoJ:	



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### Legend


	existing wall
	existing reinforced concrete
	newly designed - GK, under construction
	newly designed - parquet
	newly designed - keramocke pl.
	greenery
	seedlings

	reception	8.68 m <sup>2</sup>
2	storage room	17.08 m <sup>2</sup>
3	hall	63.42 m <sup>2</sup>
4	computer cabinet	42.23 m <sup>2</sup>
5	computer cabinet	42.78 m <sup>2</sup>
6	Toilet	10.90 m <sup>2</sup>
7	multifunctional a joke	123.85 m <sup>2</sup>
8	multifunctional cabinet	57.66 m <sup>2</sup>
9	animation cabinet	56.12 m <sup>2</sup>
10	apartment A	64.99 m <sup>2</sup>

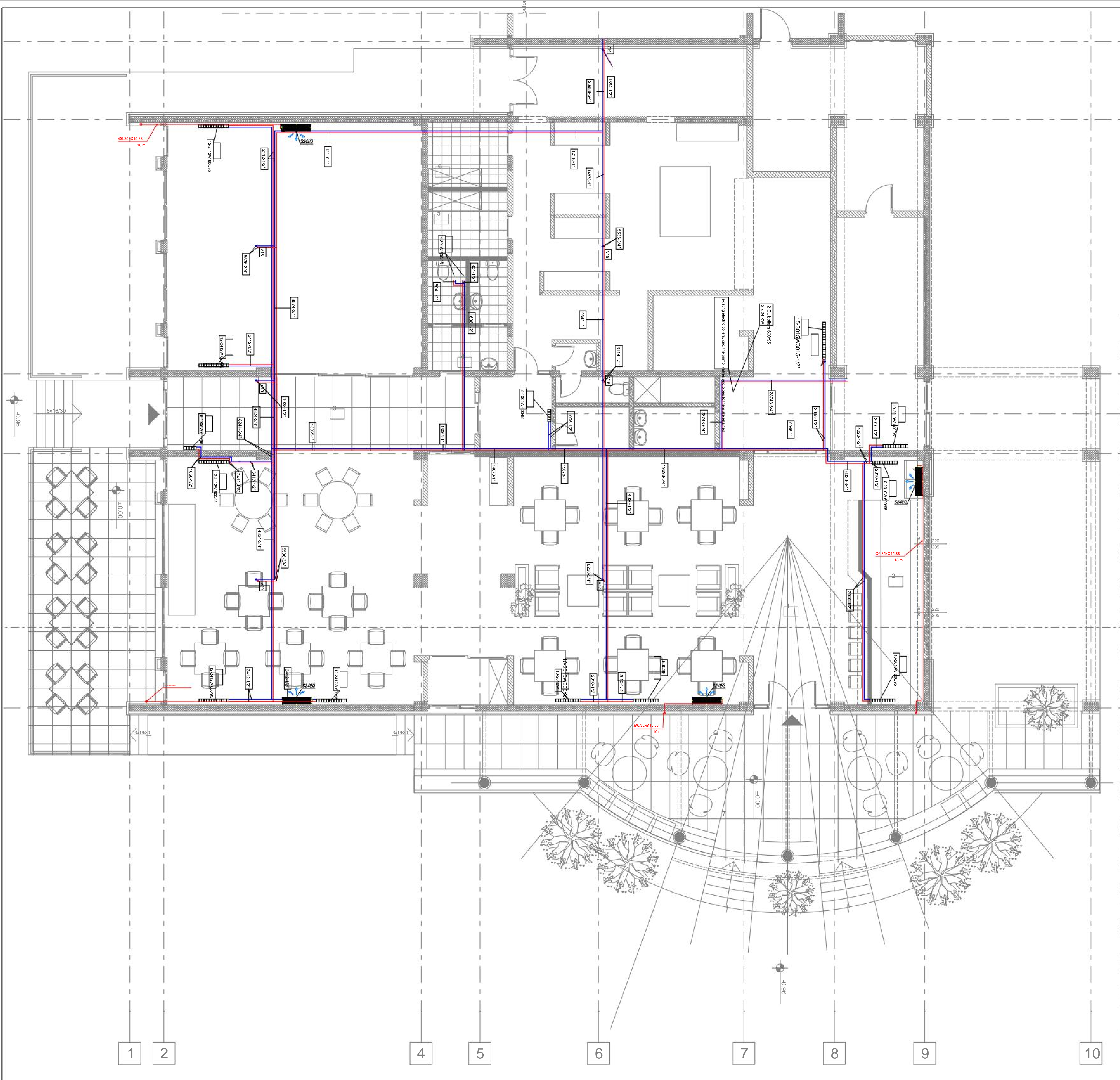
Hotel and tourist technicians	1	2	3	4	5	6	7	8	9	10
Economic technicians	1		3	4	5	6	7	8		
Gourmets	1		3			6	7	8		
Restaurateurs	1		3			6	7	8		

10. apartment A  
four-bed accommodation unit

1	entrance hall	4.96 m <sup>2</sup>
2	the bathroom	5.25 m <sup>2</sup>
3	living rooms	31.30 m <sup>2</sup>
4	s. a room	9.65 m <sup>2</sup>
5	s. a room	13.83 m <sup>2</sup>

Designer: 		Drawn: Wzajemna Spółka Akcyjna Inwestycyjna Forum Piazza delle Borse nr. 14 34121 Trieste, Italy	
Facility: Zrzeszenie Stowarzyszenia "Sanki Kark"		Location: ul. 101171 KO Buzów, Municipality of Buzów	
Main engineer: Zdzisław Bożowicz Pejarowicz da		Title of technical documentation: ADAPTATION PROJECT OF THERMOMECHANICAL INSTALLATIONS	
Engineer in charge: Zdzisław Bożowicz, dip. eng. mech.		Plan of the technical documentation: MECHANICAL INSTALLATIONS	
Collaborator: Marek Dępczyński, B.Sc.		Reference: Graphic documentation: Position plan	
Drawing:  Existing condition - first floor		Scale: 1:50 TTT	
Date of manufacture and MP:  March, 2024		Build date and Mz:  	





LEGEND		
CODE	DESCRIPTION	COUNT
MW27	DESCRIPTION: Split system outdoor unit type: MW27 product: L or equivalent Heating capacity: 9.1 Kw Cooling capacity: 7.9 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 950x34x330 mm Weight: 61 kg Power supply: 50Hz/220-240V/1Ph Input current: 2.23 kW	1
S24EQ	Split system outdoor unit type: S24EQ UL2 product: L or equivalent Heating capacity: 9.1 Kw Cooling capacity: 7.9 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 950x34x330 mm Weight: 35 kg Power supply: 50Hz/220-240V/1Ph Input current: 2.23 kW	6
S18EQ	Split system outdoor unit type: S18EQ UL2 product: L or equivalent Heating capacity: 5.8 Kw Cooling capacity: 5.0 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 770x40x280 mm Weight: 35 kg Power supply: 50Hz/220-240V/1Ph Input current: 1.61 kW	2
S24EQ	Split system indoor wall unit type: S24EQ NSK product: L or equivalent Heating capacity: 9.1 Kw Cooling capacity: 7.9 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 980x34x210 mm Weight: 11.9 kg Power supply: 50Hz/220-240V/1Ph Input current: 0.05 kW	6
S18EQ	Split system indoor wall unit type: S18EQ NSK product: L or equivalent Heating capacity: 5.8 Kw Cooling capacity: 5.0 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 980x34x210 mm Weight: 11.9 kg Power supply: 50Hz/220-240V/1Ph Input current: 0.05 kW	2
PM15SP	Split system indoor wall unit type: PM15SP product: L or equivalent Heating capacity: 5.1 Kw Cooling capacity: 4.2 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 837x308x189 mm Weight: 8.7 kg Power supply: 50Hz/220-240V/1Ph Input current: 0.05 kW	1
PM32SP	Split system indoor wall unit type: PM32SP product: L or equivalent Heating capacity: 3.2 Kw Cooling capacity: 2.5 kW Energy class: A++ Working fluid: Freon R32 Dimensions: 837x308x189 mm Weight: 8.7 kg Power supply: 50Hz/220-240V/1Ph Input current: 0.05 kW	2

Legend	
	existing wall
	existing reinforced concrete
	newly designed - GK, under construction
	newly designed - parquet
	newly designed - keramocke pl.
	greenery
	newly designed - keramocke pl.

restaurant hall	173.24 m <sup>2</sup>
bar	14.41 m <sup>2</sup>
entrance hall	23.29 m <sup>2</sup>
Toilet	8.42 m <sup>2</sup>
wardrobe	5.28 m <sup>2</sup>
wardrobe	81.04 m <sup>2</sup>
covered terrace	38.32 m <sup>2</sup>
terrace	

total net area 340.27 m<sup>2</sup>

Designer: <b>THERMIA</b> Dizajn i projektovanje iz oblasti klimatizacije i grijanja		Investor: Western Balkan Six Chamber Investment Forum Piazza della Borsa nr. 14 34121 Trieste, Italy	
Facility: Junior High School "Vukobratović"		Location: Igr. 1617/1 KO Budva, Municipality of Budva	
Main engineer: Zagorka Božović Pejanović dia		Type of technical documentation: ADAPTATION PROJECT OF THERMOTECHNICAL INSTALLATIONS	
Engineer in charge: Dejan Abazović, dipl.ing.mech.		Scale: R=1:50	
Collaborator: Marko Despotović, B.Sc.		Drawings: Graphic documentation Position plan	No. attachments: TT01
Drawing: Newly designed condition - Base of the ground floor			
Date of manufacture and MP: March, 2024		Audit date and MoJ:	









