

Názov stavby: ASU N° 9 Košice  
Project name: ASU N° 9 Košice

Objekt: Rozvodňa T81  
Object: Electrical room T81

Objednávateľ: AIR LIQUIDE AGS GmbH  
Investor: AIR LIQUIDE AGS GmbH

Stupeň: Tendrová dokumentácia Unit 2  
Level: Tender documentation Unit 2

Časť: Vzduchotechnika  
Area: Ventilation

Archívne číslo: K 70101  
Design number: K 70101

Obsah dokumentácie:  
Contents of documentation:

FREIGABE

FOR CONSTRUCTION

Ra 04.08.05

Technická správa / Technical report

792.87419

OBJEKT SKUTOČNÉHO

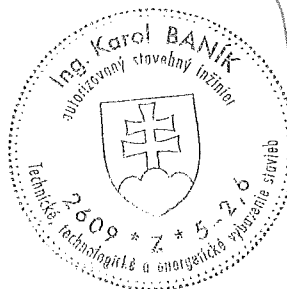
VYHOTOVENIA

REFLEX-PRO  
REFLEX-PRO

spol. s r.o.


Zižkova ulica č.19,  
Košice 040 01

Tel: 055 / 623 34 53, 72 979 53  
Fax: 055 / 625 93 58  
e-mail: reflex-pro@reflex-pro.sk  
reflex-pro@stonline.sk  
Web: www.reflex-pro.sk




10

Košice, február 2005

 <b>REFLEX-PRO</b> <b>BEETEX-BBO</b> spol. s r.o.	Stavba: <b>ASU N°9 Košice</b> Project: <b>ASU N°9 Košice</b> Objekt: <b>Rozvodňa T81</b> Object: <b>Electrical room T81</b>
---	--

## TABLE OF CONTENTS

1. IDENTIFICATION DATA OF STRUCTURE AND INVESTOR.....	2
2. INTRODUCTORY DATA .....	3
3. SUBJECT MATTER.....	
4. TECHNICAL SOLUTION .....	
5. ENERGY CONSUMPTION .....	
6. ENVIROMENTAL POICY .....	4
7. OPERATION DEMANDS .....	4
8. TRIAL DEMANDS.....	5
9. INSTALLATION AND WORK SAFETY DEMANDS.....	5
10. RESOURCE MAINTENANCE .....	5

	Stavba: <b>ASU N°9 Košice</b> Project: <b>ASU N°9 Košice</b> Objekt: <b>Rozvodňa T81</b> Object: <b>Electrical room T81</b>
---	--

## 1. Identification Data of Structure and Investor

Structure: **ASU N° 9 Košice**

Structure location: **US STEEL Košice, Slovakia**

Cadastre: **Košice**  
District: **Košice - city**  
Region: **Košice**


Investor: **AIR LIQUIDE AGS GmbH**  
Ordered by: **AIR LIQUIDE AGS GmbH**

Structure classification: **125 Industrial buildings and warehouses**  
**1251 Industrial buildings**

Structure character: **Industry**

Project documentation provider: **REFLEX-PRO s.r.o. – civil engineering company**  
**Žižkova ulica č. 19, 040 01 Košice**

Project numbe: **158 / 2004 / SO**  
Project level: **Realisation project / Detail Engineering**

	Stavba: <b>ASU N°9 Košice</b> Project: <b>ASU N°9 Košice</b> Objekt: <b>Rozvodňa T81</b> Object: <b>Electrical room T81</b>
---	--

## 2. Introductory Data

### Initial documentation

Documentation used for the project processing:

- technical assignment and civil and technological part documentation
- valid standards and regulations for air-conditioning devices, mainly:  
 STN 73 0531 Noise protection in underground structures  
 STN 12 7010 Ventilation and air-conditioning devices design  
 STN 73 0802 Fire prevention in civil structures-general provisions  
 STN 73 0834 Fire prevention in civil structures-modifications of structures  
 STN 73 0802 Protection of structures against fire spread via air-conditioning  
 Hygiene requirements in workplace nb. 7, issued by Slovak Ministry of Health

## 3. Subject Matter


The project designs supply of fresh air by underpressure system and forced efferent of heated air from the switch rooms with suction ventilatores. Switch, condensor, accumulator, and transformer rooms are in a separate building with entrance into the particular premises through a two-wing gate directly from open space.

While choosing a suitable forced ventilation system for switch room T81, the real state of the structure and possibilities to ensure the most efficient ventilation of the whole space were taken into consideration.

## 4. Technical Solution

### Installed equipment

01.	<b>Low tension switch room</b> heat acquirement	75 kW
02.	<b>Middle tension switch room</b> heat acquirement	75 kW
03.	<b>Condensors</b>	
04.	<b>Transformers</b>	
04.	<b>Accumulators</b>	

 spol. s r.o.	Stavba: <b>ASU N°9 Košice</b> Project: <b>ASU N°9 Košice</b> Objekt: <b>Rozvodňa T81</b> Object: <b>Electrical room T81</b>
---	--

### Ventilation demands on the air-conditioning device:

- temperature in the switch rooms	+5°C to +35°C
- volume of cooling air	2 x 22 000 m <sup>3</sup> /h
- required section of the supply openings	2 x (3 x 0,8 m <sup>2</sup> )

### Suggested solution

Suction of fresh air for the switch rooms shall happen directly from the open space through underpressure flaps fitted in the supply openings from the inner side of the circumferential wall of the building and blinds against rainfall from the outer side of the building wall. The dimensions of the openings are designed to prevent their pressure loss exceed external pressure air supply reserve of the ventilator at its nominal performance 30 Pa.

If the air temperature reaches +30°C it is taken away by the pipe ventilators connected to pipes leading to the outer wall and open space. The circumferential pipes from the outer side of the wall are finished with underpressure flaps.

The required temperature regime in the switch rooms can be acquired by putting the suction ventilators on and off (+5°C to +35°C).

## 5. Energy Consumption

Electric energy


Electric energy necessary to connect -

4 pieces of ventilators in the switch room	4 x 1450	5 800 W
2 pieces of ventilators for accumulators and condensers	2 x 180	360 W

The total energy need for ventilation and disposal of excessive heat in the switch room T81 is 6 160 W. The energy supply is dealt with in regulation and measurement part of Wiring.

## 6. Environmental Policy

The structure is not going to bring more negative effects on the environment compared to the current state.

 spol. s r.o.	Stavba: <b>ASU N°9 Košice</b> Project: <b>ASU N°9 Košice</b> Objekt: <b>Rozvodňa T81</b> Object: <b>Electrical room T81</b>
---	--

## 7. Operation Demands

We suggest putting the efferent ventilators into practice after reaching +30°C in the switch rooms. The draining of the heated air shall be regulated by thermostats placed in switch room T81.

The maintenance of the air-conditioning suction device can only be performed by trained authorised members of staff. Qualification of the person is verified by an authorised person.

It is necessary to follow all required safety measures while installing the system.

An authorised technician shall make sure that all safety measures provided by the installation organisation are followed, regarding the local conditions.

## 8. Trial Demands

Individual trial is performed by the supplier as a part of the installation. Individual trials are understood as examination of mechanical functions of the particular installed devices.

The results of all individual tests, including obligatory check-ups, shall be recorded in the installation diary.

## 9. Installation and Work Safety Demands

Hygiene and work safety:

The designed system shall provide year-round required parameters in the air-conditioned premises of switch room T81.

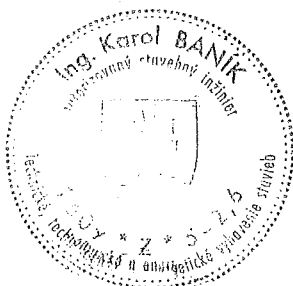
Installation and putting into operation shall be performed by an authorised organisation and it shall follow relevant work safety provisions.

To ensure work safety, the provider shall train the operation staff at submitting the work to the user. Operation instructions in Slovak language and valid state testimonial are a part of the delivery.

## 10. Resource Maintenance

Maintenance of the basic means shall be provided solely by the investor.

Košice, január 2005



Spracoval: Ing. Karol Baník