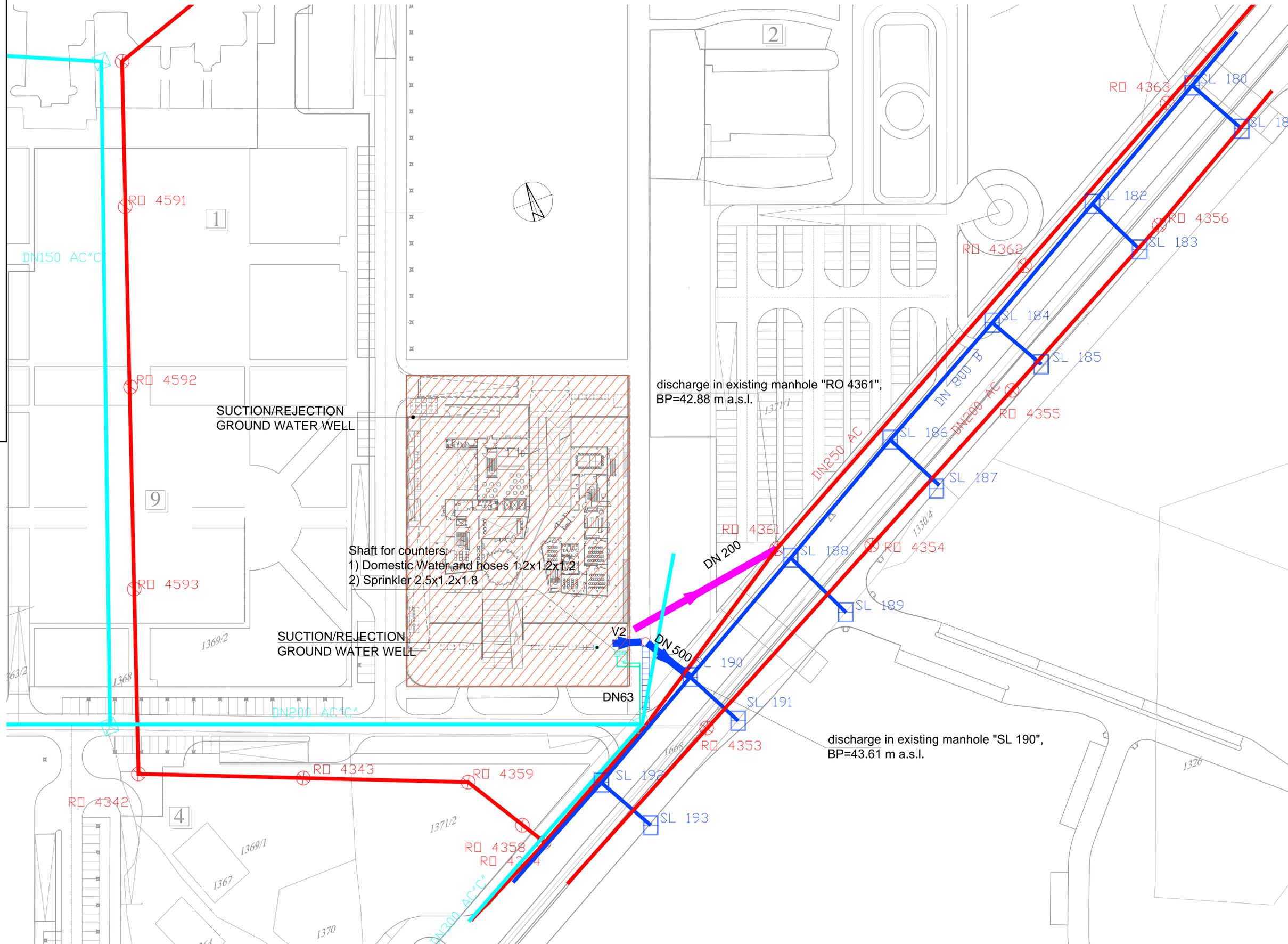
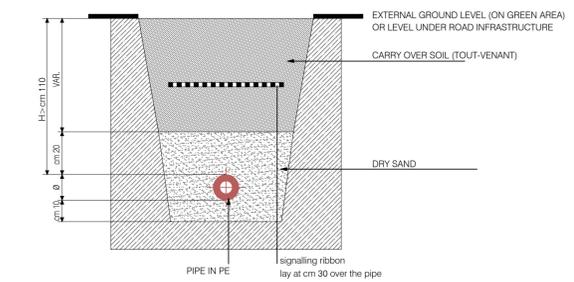


WATER RAIN PLAN AND COLLECTORS - GROUND LEVEL WITH EXTERNAL AREA
Scale 1:200

LEGEND

-  DESIGN AREA
-  PIPE OF CONNECTION (PE) FOR WATER SUPPLY FROM DESIGN AREA, PN12.5, Q=3.0 l/s, MINIMUM RESIDUAL PRESSURE TO GUARANTEE = 50 kPa
-  PIPE OF CONNECTION (PE) FOR RAIN WATER FROM DESIGN AREA
-  STORAGE TANK FOR RAIN WATER FROM DESIGN AREA, DN 2000, V=56.5 m³
-  PIPE OF CONNECTION (PVC SN8) FOR FECAL SEWAGE FROM DESIGN AREA

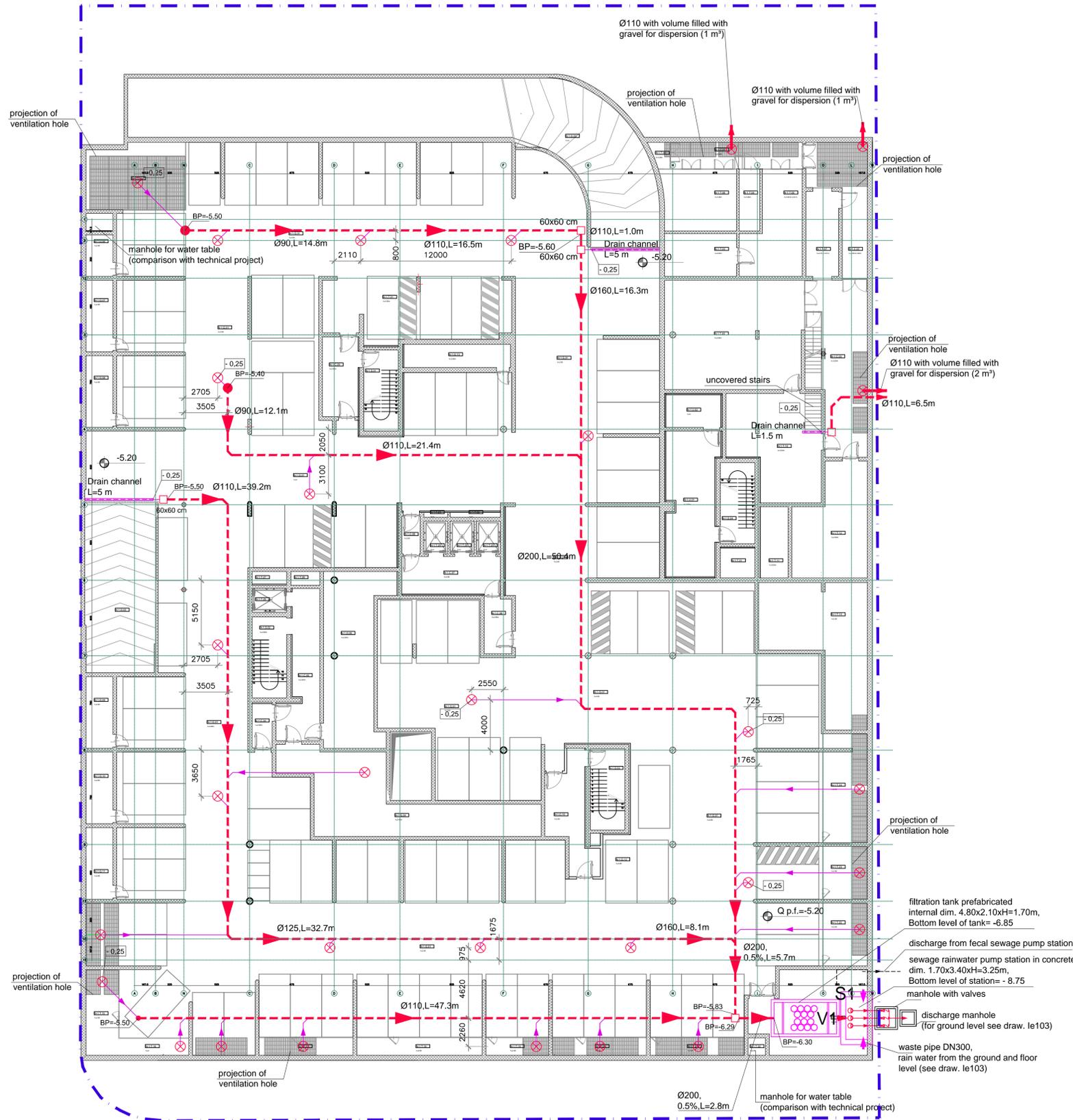
TYPOLOGICAL SECTION FOR LAYING OF PIPES FOR PUBLIC CONNECTIONS



Shaft for counters:
1) Domestic Water and hoses 1.2x1.2x1.2
2) Sprinkler 2.5x1.2x1.8

<p>INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY Bul. Džordža Vasiljevića bb, 81000 Podgorica, Crna Gora</p>		<p>MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE Ministarstvo Uredjenja Prostora Binaki Trg 46, PC "Valara", 81000 Podgorica, Crna Gora</p>			
<p>PROJECT MANAGEMENT AND STRUCTURAL DESIGN: FCM favoromiljan inženjering 30035 Mirno Venezia - Italia Tel: +39 041 5785711 Fax: +39 041 4352933 www.favoromiljan.com</p>		<p>MEP DESIGN: TIFS INGENIERIA Corso Stati Uniti 56 20127 Padova, Italia Tel: +39 049 8705115 Fax: +39 049 8705116 e-mail: info@tifs.it www.tifs.it</p>			
<p>ARCHITECTURAL DESIGN: MC A Via De Carracci 6/M - 40129 Bologna, Italia Tel: +39 051 63 13 381 Fax: +39 051 63 13 316 e-mail: mc@mcarchitects.it</p>		<p>LOCAL SUPPORT: DFS Engineering Mostarčka 4 - 81 000 Podgorica, Montenegro Tel: +382 20 228 501 Fax: +382 20 228 501 e-mail: info@dfs-engineering.com</p>			
<p>Discipline - ARCHITECTURE: studio SYNTHESIS architecture & design Bul. Džordža Vasiljevića bb, 81000 Podgorica, Crna Gora info@studiosynthesis.me Tel: +382 20 228 083 Fax: +382 20 228 082 www.studiosynthesis.me</p>					
<p>Discipline - STRUCTURE: FRAME Project d.o.o. Podgorica za građevinarstvo i inženjering Bul. Džordža Vasiljevića bb, Podgorica Tel: +382 20 228 083 Fax: +382 20 228 082 e-mail: info@frame.me</p>		<p>Discipline - WATER AND SEWAGE: HIROFOKUS Trg Nikole Kovačevića br. 2, 81000 Podgorica, Crna Gora Tel: +382 20 228 083 Fax: +382 20 228 082 e-mail: info@hirofokus.me</p>			
<p>Discipline - ELECTRICAL WIRING / high voltage: SIEMENSYS U Opatovcu, 81000 Podgorica Tel: +382 20 228 083 Fax: +382 20 228 082 e-mail: info@siemensys.me</p>		<p>Discipline - ELECTRICAL WIRING / low voltage: SIEMENSYS U Opatovcu, 81000 Podgorica, Crna Gora Tel: +382 20 228 083 Fax: +382 20 228 082 e-mail: info@siemensys.me</p>			
<p>Discipline - MECHANICAL SERVICES: NOVA ENERGIJA D.O.O. ZA PROJEKTOVANJE, INŽENJERING, PROMET I USTROJAVANJE ENERGIJSKIH I ENVIROMENTALNIH SISTEMA Bul. Džordža Vasiljevića bb, 81000 Podgorica, Crna Gora Tel: +382 20 228 083 Fax: +382 20 228 082 e-mail: nova@novajug.com</p>		<p>Discipline - FIRE PROTECTION: PREVING ul. 4. Jul 15-1, 81000 Podgorica, Crna Gora Tel: +382 20 228 083 Fax: +382 20 228 082 e-mail: info@preving.me</p>			
<p>Building and location: Business building - Building of the Government of Montenegro ENERGY EFFICIENT BUILDING Urban plot 9 DUP "Univerzitetski centar" - amendments Podgorica, Montenegro</p>					
<p>ISSUE: MAIN DESIGN</p>		<p>ISSUE: RAIN WATER DESIGN</p>			
<p>TITLE: GENERAL PLAN CONNECTION TO THE CITY WATER AND SEWAGE NETWORK</p>					
REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	30/11/10	926_je_100a.dwg	various		
b					
c					
d					
ISSUE NR:					
le100					
DATE:	15/10/2010	SCALE:	1:500	FILE:	926_je_100.dwg
JN:	926	DRAW:	LDB	APPROVED:	S.F.

RAIN WATER PLAN AT THE UNDERGROUND LEVEL
Scale 1:200



- LEGEND**
- AREA'S BOUNDARIES
 - TYPE:4 PREFABRICATED DRAIN CHANNEL, IN PP-PE, EXTERNAL DIMENSION 147xH=60 mm, SIMILAR TO "DACHFIX-HAURATON", WITH GRILLED MESH 20x30 mm OF CAST IRON CL. C250 AND VERTICAL HOLE Ø75 mm FOR WASTE PIPE
 - dimensions PREFABRICATED MANHOLE FOR INSPECTION, IN CONCRETE WITH LID OF CAST IRON OF CL. C250
 - Ø (mm), L(m) PIPE OF PE (POLYETHYLENE) Ø>=110 mm, FOR COLLECTION OF RAIN WATER FROM HOLE OF VENTILATION, SLIP ROADS AND DRAIN CHANNEL ON THE UNDERGROUND FLOOR, i=0.25% IF NOT SPECIFIED (WITH DASHED LINE-IN THE THICKNESS OF FOUNDATION, WITH CONTINUOUS LINE-IN THE GROUND)
 - ⊗ SYPHONED GULLY GRATING, WITH REGULABLE FUNNEL, WASTE PIPE Ø75 mm OF PE (SEE DRAW. Ie106 FOR DETAILS)
 - WASTE PIPE DN 75 mm OF PE, i=0.5%, FROM GULLY GRATINGS AT THE BOTTOM OF HOLES OF VENTILATION
 - ARRANGEMENT POINT FOR CLEANING ACCESS TO PIPES: INSPECTION TOP, EXTENSION ELEMENT FOR CONCRETE MANHOLE, INTERNAL DIM.40x40xH=20 cm, LID OF CAST IRON OF CL. C250 EXTERNAL DIM. 50x50 cm
 - PREFABRICATED FILTRATION TANK INTERNAL DIMENSION 4.80x2.10xH=1.70m, IN CONCRETE, WITH ELEMENTS "STORMFILTER-STORMWATER" OR SIMILAR (SEE DRAW. Ie106 FOR DETAILS)
 - SEWAGE PUMP STATION IN CONCRETE INTERNAL DIM. 1.70x3.40xH=3.25m, WITH N.3 SUBMERGED PUMPS P=13.5kW, Q=85 l/s, H=9m EACH ONE (ONE IS IN STAND-BY) AND CONTROL/SUPPLY PANEL
 - x.xx IF NOT SPECIFIED, LEVELS ARE RELATED TO 0.00 LEVEL OF THE BUILDING
 - 0.51 BOTTOM PIPE LEVEL (m) RELATED TO FINAL LEVEL OF PAVEMENT SURFACE
 - BP=xxx BOTTOM PIPE (BP) LEVEL (m) REFERRED TO 0.00 LEVEL OF EXTERNAL PAVEMENTS

- NOTES**
- CONNECTIONS BETWEEN PIPES WILL BE PERFORMED WITH ANGULAR ELEMENTS ON 45°.
 - REDUCTIONS WILL HAVE ALIGNED UPPER LEVELS;
 - PAVEMENT SURFACE WILL HAVE A SLOPE >= 0.2% TOWARDS DRAIN CHANNELS;
 - BEFORE BUILDING, BUILDING COMPANY WILL CHECK POSSIBLE INTERFERENCE WITH OTHER TECHNICAL SYSTEM AND PIPES;
 - FOR LEVELS OF PROJECT PAVEMENT VERIFY COMPARISON WITH STRUCTURAL AND ARCHITECTURAL PROJECT;
 - SHOWED DIMENSIONS ARE IN mm;
 - IN CASE THAT DIVERGENCE BETWEEN PROJECT DRAWINGS, IN ORDER:
 - 1 - MOST DETAILED DRAWINGS (SCALE 1:20 - 1:50)
 - 2 - TECHNICAL SPECIFICATIONS IN THE CONTRACT
 ARE PREDOMINANT INFORMATIONS;
 - FOR DRAIN CHANNELS SEE DETAILS ON DRAWING Ie106.

INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
Bul. Džordža Vasiljevića bb
81000 Podgorica, Crna Gora

MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE
Riški Trg 46, PC "Vektra"
81000 Podgorica, Crna Gora

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: **F&M** favoromiljan inženjering

MEP DESIGN: **TIFS** INŽENJERING

ARCHITECTURAL DESIGN: **MC A** mca@mcarchitects.it

LOCAL SUPPORT: **DFS** Engineering

Discipline - STRUCTURE: **FRAME** Project d.o.o.

Discipline - ELECTRICAL WIRING / high voltage: **SIENERSYS**

Discipline - MECHANICAL SERVICES: **NOVA ENERGIJA**

Discipline - WATER AND SEWAGE: **HIDROFOKUS**

Discipline - ELECTRICAL WIRING / low voltage: **SIENERSYS**

Discipline - FIRE PROTECTION: **PREVIZANJE**

Building and location: **Business building - Building of the Government of Montenegro**
ENERGY EFFICIENT BUILDING
Urban plot 9
DUP "Univerzitetski centar" - amendments
Podgorica, Montenegro

ISSUE: **MAIN DESIGN** **RAIN WATER DESIGN**

TITLE: **WATER RAIN PLAN UNDERGROUND LEVEL**

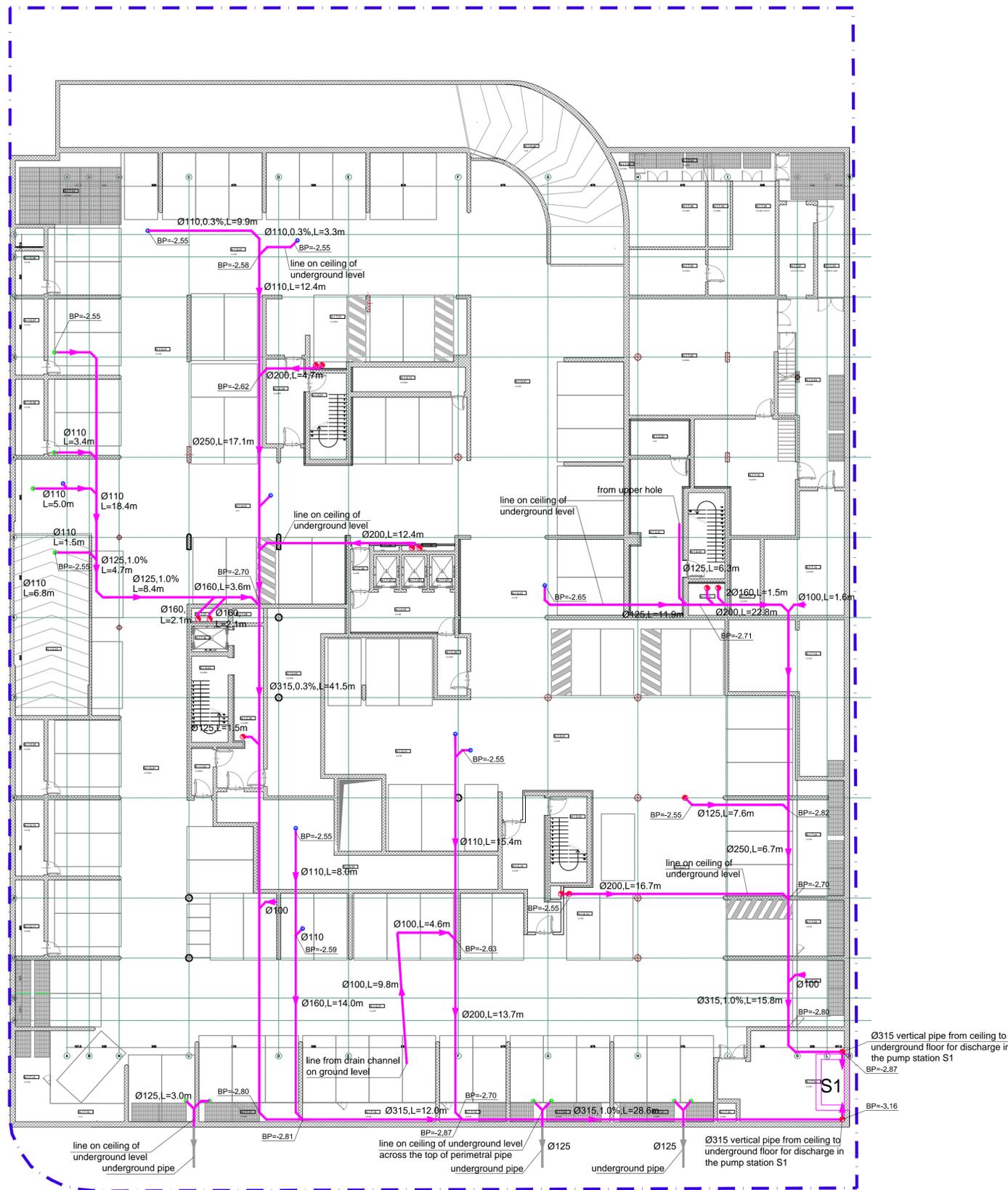
REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	30/11/10	Ie101a.dwg	Adjustments to water rain plan from roof level	LDB	S.F.
b					
c					
d					

ISSUE NR. **Ie101**

DATE: 15/10/2010 SCALE: 1:200 FILE: 926_Ie_101.dwg

J.N. 926 DRAW: LDB APPROVED: S.F.

RAIN WATER PLAN AT CEILING OF UNDERGROUND LEVEL
Scale 1:200



LEGEND

- AREA'S BOUNDARIES
- \varnothing (mm), L(m) PIPE OF PE FOR RAIN WATER AT THE CEILING OF UNDERGROUND LEVEL, $i=0.5\%$ IF NOT SPECIFIED
- \bullet x.xx IF NOT SPECIFIED, LEVELS ARE RELATED TO 0.00 LEVEL OF THE BUILDING
- BP=xxx BOTTOM PIPE (BP) LEVEL (m) REFERRED TO 0.00 LEVEL OF EXTERNAL PAVEMENTS
- ○ PREDISPOSITION OF HOLE FOR PIPE Ø110mm (IF NOT SPECIFIED) ON LOFT AT LEVEL 0.00
- VERTICAL PIPE FROM ROOF LEVEL TO BOTTOM SIDE OF GROUND LEVEL

NOTES

- CONNECTIONS BETWEEN PIPES WILL BE PERFORMED WITH ANGULAR ELEMENTS ON 45°.
- REDUCTIONS WILL HAVE ALIGNED UPPER LEVELS;
- PAVEMENT SURFACE WILL HAVE A SLOPE $\geq 0.2\%$ TOWARDS DRAIN CHANNELS;
- BEFORE BUILDING, BUILDING COMPANY WILL CHECK POSSIBLE INTERFERENCE WITH OTHER TECHNICAL SYSTEM AND PIPES;
- FOR LEVELS OF PROJECT PAVEMENT VERIFY COMPARISON WITH STRUCTURAL AND ARCHITECTURAL PROJECT;
- SHOWED DIMENSIONS ARE IN mm;
- IN CASE THAT DIVERGENCE BETWEEN PROJECT DRAWINGS, IN ORDER:
 - 1 - MOST DETAILED DRAWINGS (SCALE 1:20 - 1:50)
 - 2 - TECHNICAL SPECIFICATIONS IN THE CONTRACT ARE PREDOMINANT INFORMATIONS;
- FOR DRAIN CHANNELS SEE DETAILS ON DRAWING Ie106.

INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT,
LAND AND SEA
OF THE REPUBLIC OF ITALY

Bul. Džordža Vasiljevića bb
81000 Podgorica, Crna Gora

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Fax +39 041 4355933
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MINISTARSTVO TURIZMA
MINISTARSTVO UREĐENJA PROSTORA
I ZAŠTITE ŽIVOTNE SREDINE

Rinskij Trg 46, PC "Vektra"
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Corso Stati Uniti 56
35127 Padova, Italia
Tel. +39 049 8705110
e.mail ele@manens-efs.it
www@manens-efs.it

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: **F&M** favero/milano ingegneria

MEP DESIGN: **TIFS** INGEGERIA s.p.a. Manens - TFS spa

ARCHITECTURAL DESIGN: **MC A** mcarchitects

LOCAL SUPPORT: **DFS** Engineering

Designer: **studio SYNTHESIS** architecture & design

Discipline - STRUCTURE: **FRAME** Project d.o.o.

Discipline - WATER AND SEWAGE: **HIDROFOKUS**

Discipline - ELECTRICAL WIRING / high voltage: **SIENERSYS**

Discipline - ELECTRICAL WIRING / low voltage: **siemens**

Discipline - MECHANICAL SERVICES: **NOVA ENERGIJA**

Discipline - FIRE PROTECTION: **PREVIZANJE**

Building and location: **Business building - Building of the Government of Montenegro ENERGY EFFICIENT BUILDING Urban plot 9 DUP "Univerzitetski centar" - amendments Podgorica, Montenegro**

ISSUE: **MAIN DESIGN RAIN WATER DESIGN**

TITLE: **WATER RAIN PLAN CEILING OF UNDERGROUND LEVEL**

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	30/11/10	Ie102a.dwg	Adjustments to water rain plan from roof level	LDB	S.F.
b					
c					
d					

ISSUE NR. **Ie102**

DATE: 15/10/2010 SCALE: 1:200 FILE: 926_je_102.dwg

J.N. 926 DRAW: LDB APPROVED: S.F.



WATER RAIN PLAN AND COLLECTORS - GROUND LEVEL WITH EXTERNAL AREA

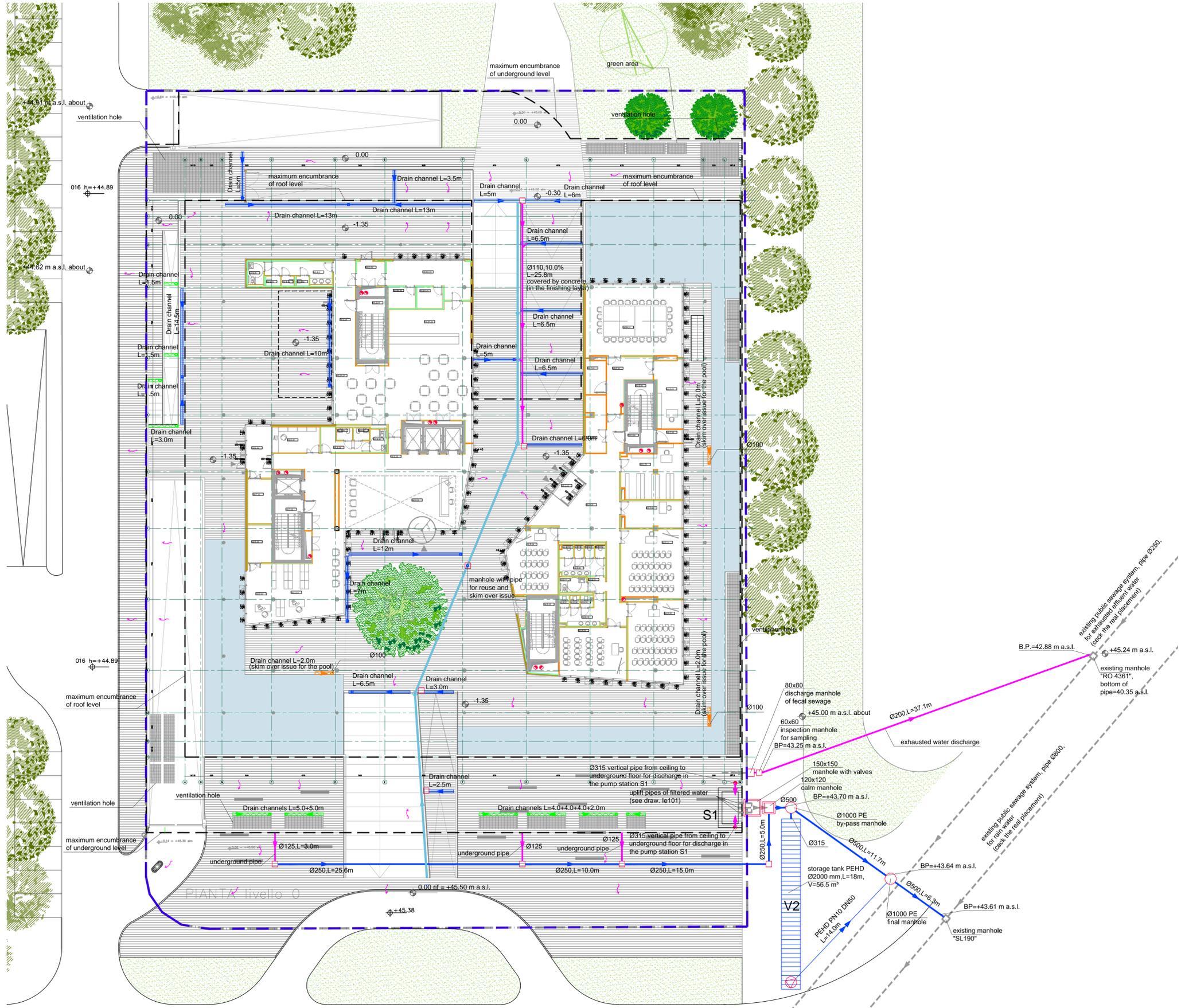
Scale 1:200

LEGEND

- AREA BOUNDARIES
- TYPE 1: PREFABRICATED DRAIN CHANNEL, IN PP-PE, EXTERNAL DIMENSION 160xH=135 mm, L(m) INDICATED, WITH SUPERIOR SLIT, WIDTH = 12.5 mmx H=100 mm OF STAINLESS STEEL AND VERTICAL HOLE Ø100 mm FOR WASTE PIPE
- TYPE 2: PREFABRICATED DRAIN CHANNEL, IN PP-PE, EXTERNAL DIMENSION 147x80 mm, SIMILAR TO "RECYFIX PLUS 100-HAURATON", L(m) INDICATED, WITH TRANSVERSAL SLITS 75x9 mm OF STEEL ZINC-COATED CL. B125 AND VERTICAL HOLE Ø100 mm FOR WASTE PIPE
- TYPE 5: STONE GRID WITH PREFABRICATED CHANNEL SIMILAR TO "CHANNEL S 100 K-ACO DRAIN" (SKIM OVER ISSUE FOR THE POOL), L(m) INDICATED AND VERTICAL HOLE Ø100 mm FOR WASTE PIPE
- CONCRETE CHANNEL DIMENSIONS 20xH=10 cm ALIMENTED BY WATER OF RECYCLING (A NODE INDICATES A CHANGING SLOPE)
- PIPE OF PE (POLYETHYLENE) FOR RAIN WATER ON UNDERGROUND LEVEL, i=0.5% IF NOT SPECIFIED
- PIPE OF PVC SN8 Ø>=125 mm, FOR RAIN/EXHAUSTED WATER, i=1.0% IF NOT SPECIFIED
- PREFABRICATED MANHOLE FOR INSPECTION, IN CONCRETE WITH LID OF CAST IRON OF CL. C250
- PREFABRICATED MANHOLE FOR INSPECTION, IN HDPE WITH LID OF CAST IRON OF CL. D400
- VERTICAL RAIN PIPE FROM FLOOR LEVEL
- WATER FLOW DIRECTION AND SLOPE ON THE SURFACE
- IF NOT SPECIFIED, LEVELS ARE RELATED TO 0.00 LEVEL OF THE BUILDING
- BOTTOM PIPE (BP) LEVEL (m) REFERRED TO 0.00 LEVEL OF THE BUILDING
- STORAGE TANK IN PEHD Ø2000 mm, WITH SUBMERGED PUMP Q=2l/s, H=7m, P=0.75 kW FOR EMPTYING

NOTES

- CONNECTIONS BETWEEN PIPES WILL BE PERFORMED WITH ANGULAR ELEMENTS ON 45°, REDUCTIONS WILL HAVE ALIGNED UPPER LEVELS;
- PAVEMENT SURFACE WILL HAVE A SLOPE >= 0.2% TOWARDS DRAIN CHANNELS;
- BEFORE BUILDING, BUILDING COMPANY WILL CHECK POSSIBLE INTERFERENCE WITH OTHER TECHNICAL SYSTEM AND PIPES;
- FOR LEVELS OF PROJECT PAVEMENT VERIFY COMPARISON WITH STRUCTURAL AND ARCHITECTURAL PROJECT;
- SHOWED DIMENSIONS ARE IN mm;
- IN CASE THAT DIVERGENCE BETWEEN PROJECT DRAWINGS, IN ORDER:
 - MOST DETAILED DRAWINGS (SCALE 1:20 - 1:50)
 - TECHNICAL SPECIFICATIONS IN THE CONTRACT
- ARE PREDOMINANT INFORMATIONS:
- THE LEVEL 0.00 OF EXTERNAL PAVEMENTS COINCIDES WITH LEVEL +45.50 m a.s.l.;
- FOR DRAIN CHANNELS AND TYPOLOGICAL SECTION OF LAYING FOR PIPES SEE DETAILS ON DRAWING Ie100 AND Ie106.



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY

MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: FCM

MEP DESIGN: TIFS

ARCHITECTURAL DESIGN: MC A

LOCAL SUPPORT: DFS

Discipline - STRUCTURE: FRAME

Discipline - WATER AND SEWAGE: HIDROFOKUS

Discipline - ELECTRICAL WIRING / high voltage: SIEMENSYS

Discipline - ELECTRICAL WIRING / low voltage: slimes

Discipline - MECHANICAL SERVICES: NOVA ENERGIJA

Discipline - FIRE PROTECTION: PREVEN

Building and location: Business building - Building of the Government of Montenegro

ENERGY EFFICIENT BUILDING

Urban plot 9

DUP "Univerzitetski centar" - amendments

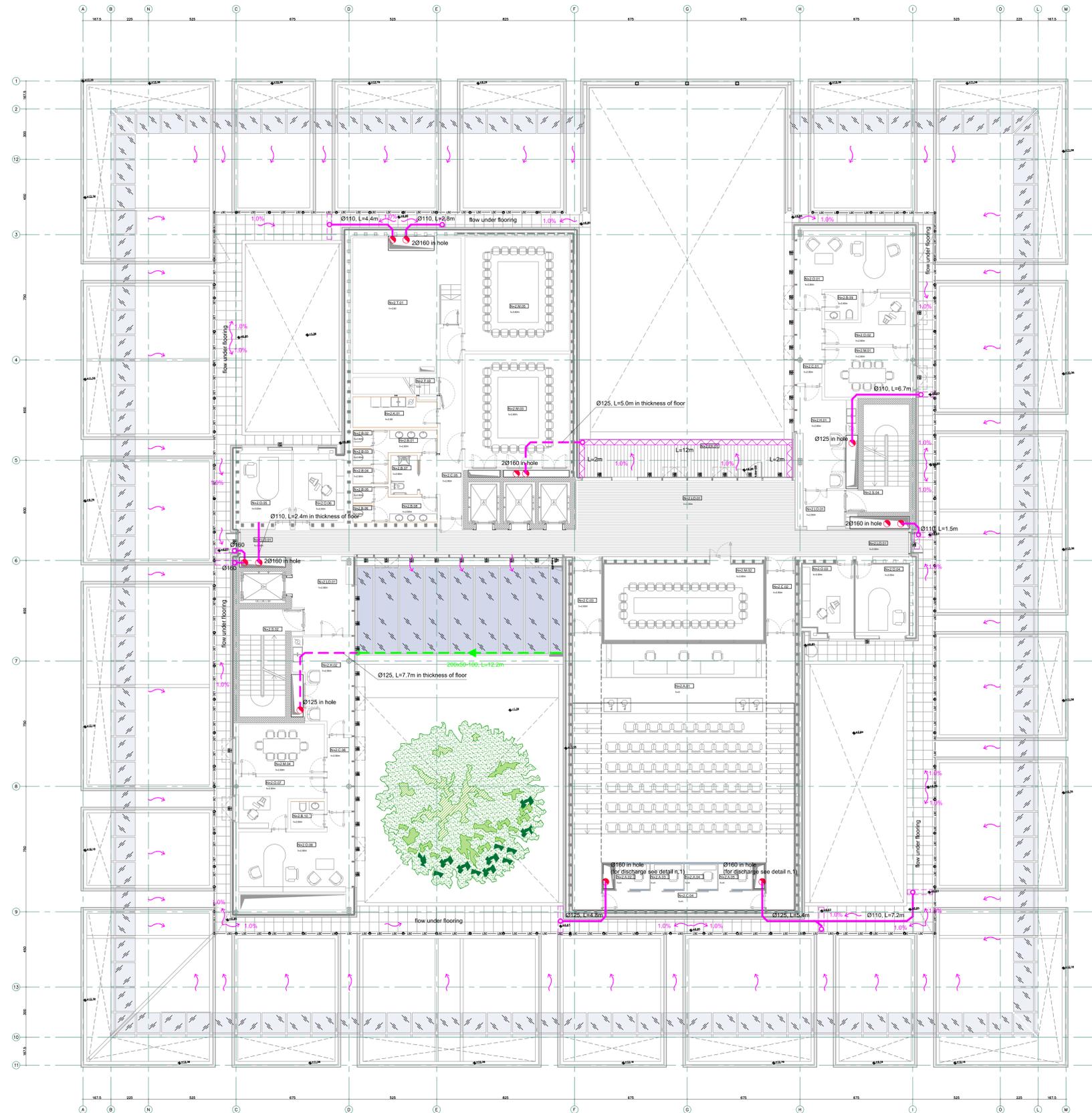
Podgorica, Montenegro

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	30/11/10	926_Ie103a.dwg	Adjustments to water rain plan from roof level	LDB	S.F.
b					
c					
d					

ISSUE NR. Ie103

DATE: 15/10/2010	SCALE: 1:200	FILE: 926_Ie_103.dwg
J.N. 926	DRAW: LDB	APPROVED: S.F.

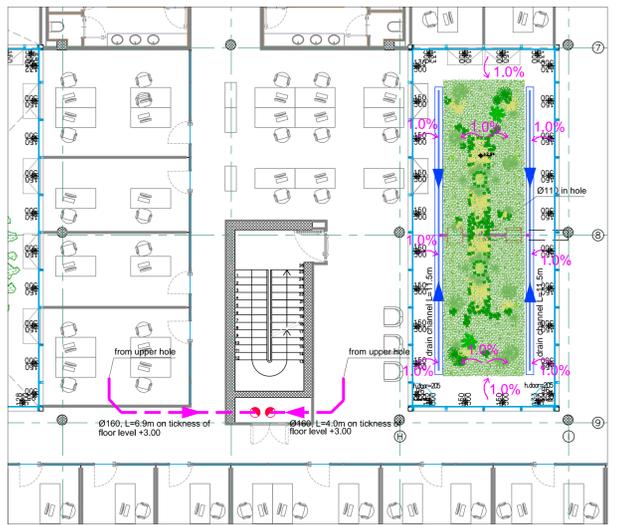
WATER RAIN PLAN AND COLLECTORS - LEVEL +7.00
Scale 1:100



- LEGEND**
- TYPE 3: PREFABRICATED DRAIN CHANNEL, IN REINFORCED CONCRETE, EXTERNAL DIMENSION 210mmx200 mm, LIMIT SPECIFIED, SIMILAR TO "FASERFIX STANDARD 150-HAURATON", WITH GRILLED MESH 30x30 mm OF ZINC-COATED STEEL CL. B125 AND VERTICAL HOLE Ø125 mm FOR WASTE PIPE (IF NOT INDICATED)
 - TYPE 4: PREFABRICATED DRAIN CHANNEL, IN PP-PE, EXTERNAL DIMENSION 254x140 mm (WITHOUT GRILL) SIMILAR TO "RECYFIX STANDARD-HAURATON", L=0.5 - 1.5m UNDER PAVEMENT WITH A VERTICAL HOLE Ø110-125-160 mm FOR WASTE PIPE (Ø INDICATED)
 - > DRAINAGE PIPE OF PVC WITH CIRCUMFERENCE SLOTS, COVERED WITH GRAVEL AND GEOTEXTIL
 - DISCHARGE POINT WITH PIPE OF PE (POLYETHYLENE) Ø=110 mm FROM GRILLED DRAIN CHANNEL ON SHINGLE, PASSING THROUGH THE ROOF LAYER, i=0.5%
 - DISCHARGE POINT WITH PIPE OF PE Ø=110 mm FROM GUTTER ON SHINGLE, PASSING THROUGH THE ROOF LAYER, i=0.5%
 - > METALLIC GUTTERS WITH SLOPE=0.2% (DIMENSIONS WIDTHxHEIGHT INDICATED) FOR DETAILS SEE ARCHITECTURAL PROJECT
 - PREFABRICATED MANHOLE FOR INSPECTION, IN CONCRETE WITH LID OF CAST IRON OF CL C250
 - VERTICAL PIPE (Ø INDICATED) OF PE, FROM BOTTOM SIDE OF ROOF LEVEL TO BOTTOM SIDE OF GROUND LEVEL
 - VERTICAL PIPE OF COPPER-COLOURED ALUMINUM (Ø INDICATED)
 - > WATER FLOW DIRECTION AND SLOPE ON THE SURFACE OF SLIDING (OVER OR UNDER PAVING)
 - X.XX IF NOT SPECIFIED, LEVELS ARE RELATED TO 0.00 LEVEL OF THE BUILDING

- NOTES**
- CONNECTIONS BETWEEN PIPES WILL BE PERFORMED WITH ANGULAR ELEMENTS ON 45°.
 - REDUCTIONS WILL HAVE ALIGNED UPPER LEVELS.
 - PAVEMENT SURFACE WILL HAVE A SLOPE i=0.2% TOWARDS DRAIN CHANNELS.
 - BEFORE BUILDING, BUILDING COMPANY WILL CHECK POSSIBLE INTERFERENCE WITH OTHER TECHNICAL SYSTEM AND PIPES.
 - FOR LEVELS AND SLOPE OF PROJECT PAVEMENT VERIFY COMPARISON WITH STRUCTURAL AND ARCHITECTURAL PROJECT.
 - FOR DETAILS ON GUTTERS ON THE SHINGLE LEVEL SEE ARCHITECTURAL PROJECT.
 - IN CASE THAT DIVERGENCE BETWEEN PROJECT DRAWINGS, IN ORDER:
 - 1 - MOST DETAILED DRAWINGS (SCALE 1:20 - 1:50)
 - 2 - TECHNICAL SPECIFICATIONS IN THE CONTRACT
 - ARE PREDOMINANT INFORMATIONS.
 - FOR DRAIN CHANNELS SEE DETAILS ON DRAWING 1e106.

DETAIL N.1: COLLECTORS ON CEILING OF LEVEL +3.00
Scale 1:100



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
 MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
 MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: **FSM**
 Via De Caracciolo, 68/A - 81029 Polignano, Italy
 Tel: +39 081 4201171 Fax: +39 081 4202215
 www.fsman.it info@fsman.it

MEP DESIGN: **CITIS**
 Corso San Luca 55, 35127 Padova, Italy
 Tel: +39 049 8707011 Fax: +39 049 8707012
 www.citis-italia.it info@citis-italia.it

ARCHITECTURAL DESIGN: **MC A**
 Via De Caracciolo, 68/A - 81029 Polignano, Italy
 Tel: +39 081 4201171 Fax: +39 081 4202215
 www.mca-architects.it

LOCAL SUPPORT: **DFS** Engineering
 Montenegro, A. P. 1000 Podgorica, Montenegro
 Tel: +381 91 228 002 Fax: +381 91 228 002
 www.dfs-engineering.com

Designer: B.U. Stokić Valjevačka 55, 81000 Podgorica, Crna Gora
studio SYNTHESIS architecture & design
 Tel: +381 20 228 002 Fax: +381 20 228 002
 www.studio-synthesis.com

STRUCTURE: **FRAME** Project d.o.o.
 Projektna i inženjerska kancelarija
 Projektna i inženjerska kancelarija

ELECTRICAL WIRING / High voltage: **SIENSISS**
 Ulica Crnogoraca 10, 81000 Podgorica, Crna Gora
 Tel: +381 91 228 002 Fax: +381 91 228 002
 www.sienassis.com

ELECTRICAL WIRING / Low voltage: **SIENSISS**
 Ulica Crnogoraca 10, 81000 Podgorica, Crna Gora
 Tel: +381 91 228 002 Fax: +381 91 228 002
 www.sienassis.com

MECHANICAL SERVICES: **NOVA ENERGIJA**
 Ulica Crnogoraca 10, 81000 Podgorica, Crna Gora
 Tel: +381 91 228 002 Fax: +381 91 228 002
 www.nova-energija.com

FIRE PROTECTION: **PREVIZIJA**
 Ulica Crnogoraca 10, 81000 Podgorica, Crna Gora
 Tel: +381 91 228 002 Fax: +381 91 228 002
 www.previzija.com

Building and location:
Business building - Building of the Government of Montenegro
ENERGY EFFICIENT BUILDING
 Urban plot 9
 DLP "Univerzitetski centar" - amendments
 Podgorica, Montenegro

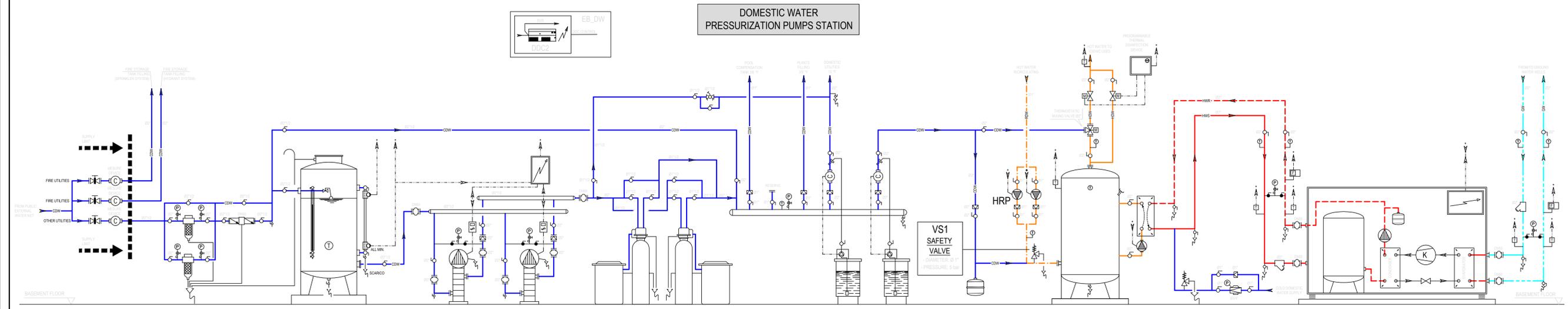
ISSUE: **MAIN DESIGN** **RAIN WATER DESIGN**

TITLE: WATER RAIN PLAN
 SECOND FLOOR, LEVEL +7.00

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
A	30/11/10	106_n106a.dwg	Adjustments to water rain plan from roof level	LDG	S.F.
B					
C					
D					

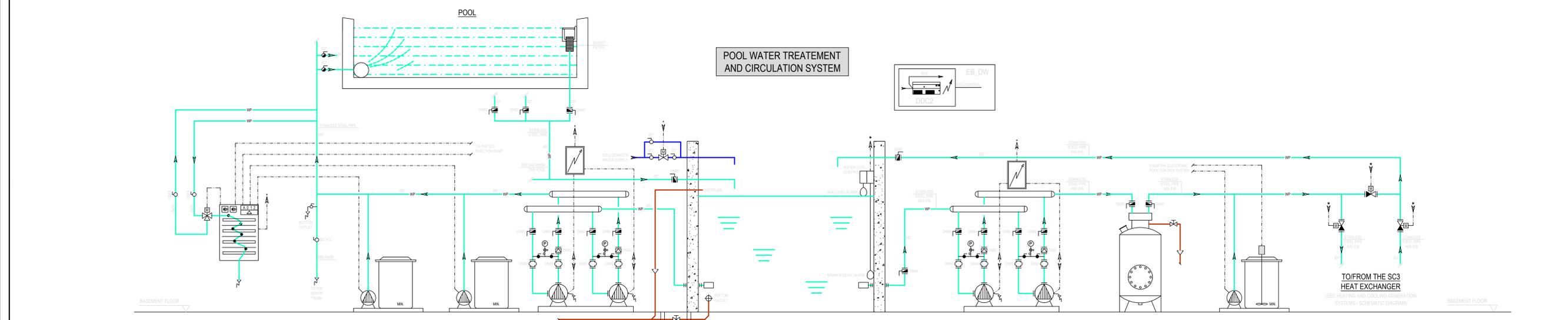
ISSUE NO. **le104**

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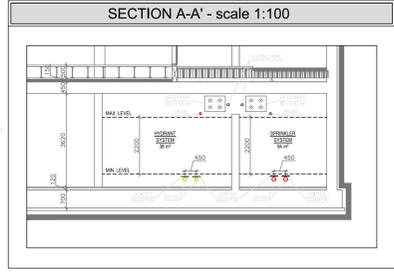
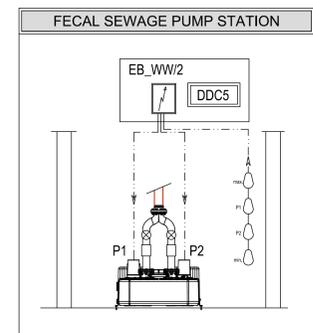
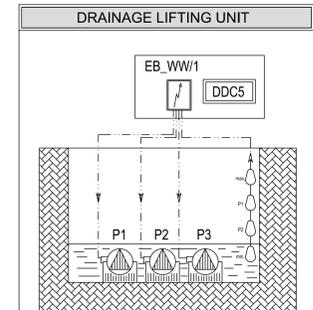
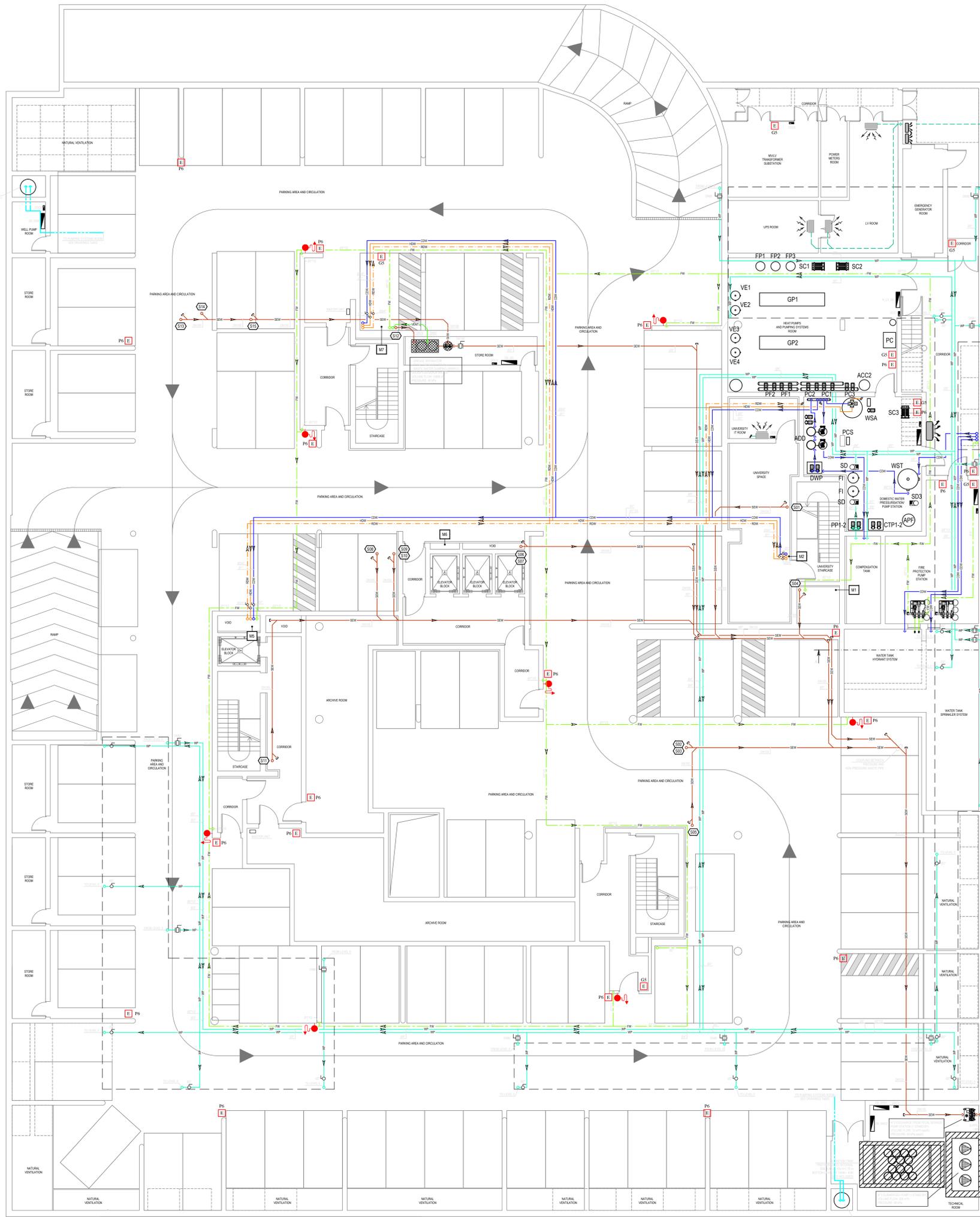
- WF** SELF CLEANING WATER FILTERS
- VOLUME FLOW: 10 m³/h each
- PRESSURE: 10 bar
- RPZD** REDUCED PRESSURE ZONE DEVICE
- WST** OPEN WATER STORAGE TANK
- STAINLESS STEEL AISI 316
- DWP** DOMESTIC WATER PUMPING GROUP
- VOLUME FLOW: 10 m³/h each
- PRESSURE: 40 mPa
- BUILT-IN INVERTER
- 2 PUMPS (1 STAND BY)
- ADD** N°2 WATER SOFTENER SYSTEM
- NOMINAL FLOW: 8 m³/h each
- PARALLEL WORKING
- VOLUME BASED CONTROLLER
- SD5** INJECTION PUMP
- SANITARY CIRCUIT
- SD4** INJECTION PUMP
- SANITARY CIRCUIT
- VE** EXPANSION VESSEL
- PRELOAD: 3.5 bar
- HRP** HOT RECIRCULATING PUMP
- VOLUME FLOW: 100 m³/h each
- PRESSURE: 70 mPa
- WSA** HOT DOMESTIC WATER STORAGE TANK
- CAPACITY: 3000 litres
- WITH EXTERNAL HEAT EXCHANGER AND PUMP
- CAPACITY: 33 kW
- PRIMARY CIRCUIT
- VOLUME FLOW: 8400 litres
- TEMP. IN/OUT: 45 °C - 65 °C
- SECONDARY CIRCUIT
- VOLUME FLOW: 3000 litres
- TEMP.: 60 °C
- PC** DOMESTIC WATER HEAT PUMP UNIT
- COP HEATING: 2.98
- SUMMER
- SOURCE WATER IN/OUT: 18°/28 °C
- HOT WATER IN/OUT: 40°/47 °C
- WINTER
- SOURCE WATER IN/OUT: 12°/16 °C
- HOT WATER IN/OUT: 40°/47 °C
- PUMP
- VOLUME FLOW: 5400 litres
- PRESSURE: 70 mPa
- WATER TANK
- CAPACITY: 100 litres

LEGEND			
	BALL VALVE		FLOW SWITCH
	BALL CHECK VALVE		FLOW METER
	STAINLESS STEEL BUTTERFLY VALVE		BACKFLOW PREVENTER
	BALANCING VALVE		SWING CHECK VALVE
	GATE VALVE WITH RUBBER-ENCAPSULATED WEDGE		PRESSURE REDUCING VALVE
	MOTORIZED BUTTERFLY VALVE		FINE CLEANING WATER FILTER
	MOTORIZED 2 WAY CONTROL VALVE		FUNNEL DRAIN
	STAINLESS STEEL MOTORIZED 2 WAY CONTROL VALVE		ELECTRIC MOTOR DRIVEN PUMP
	MOTORIZED 3 WAY CONTROL VALVE		INSTRUMENT CONNECTION
	SAFETY RELIEF VALVE		INVERTER
	LIFT CHECK VALVE		HWS HOT WATER SUPPLY
	EXPANSION JOINT		HWR HOT WATER RETURN
	Y STRAINER		CDW COLD DOMESTIC WATER
	VOLUMETRIC WATER-METER		HDW HOT DOMESTIC WATER
	ELECTRICAL ENERGY METER		ROW RECIRCULATING HOT DOMESTIC WATER
	THERMOMETER		WP WATER POOL
	SENSOR X: P - PRESSURE X: T - TEMPERATURE X: H - HUMIDITY X: V - SPEED		GW GROUND WATER
	PRESSURE GAUGE		ELECTRIC CONTROL SIGNAL
	DIFFERENTIAL PRESSURE CONTROL DEVICE		
	PRESSURE CONTROL DEVICE		
	LIQUID LEVEL CONTROLLER		
			(*) WIRE-LINE TOPFROM BUILDING MANAGEMENT SYSTEM



- EPCS** ELECTRONIC POOL CONTROL SYSTEM
- ELECTRICAL PANEL INCLUDED
- SD1** INJECTION PUMP
- ANTI-CALC WATER TREATMENT TANK INCLUDED
- SD2** INJECTION PUMP
- WATER TREATMENT TANK INCLUDED
- PP1-2** POOL PUMPING GROUP
- VOLUME FLOW: 10 m³/h each
- PRESSURE: 40 mPa
- PARALLEL WORKING
- CT** COMPENSATION TANK
- VOLUME: 50 m³
- CTP1-2** COMPENSATION TANK PUMPING GROUP
- VOLUME FLOW: 10 m³/h each
- PRESSURE: 130 mPa
- (1 STAND BY)
- APF** AUTOMATIC POOL FILTER
- FLOW RATE: 10 m³/h
- SD3** INJECTION PUMP
- FLOOR-CLEANING WATER TREATMENT TANK INCLUDED

INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY Bul. Obilnica Vukobratova bb, 81000 Podgorica, Crna Gora		MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE Ministarstvo Uredjenja Prostora Rimski Trg 46, PC "Vukovar", 81000 Podgorica, Crna Gora			
PROJECT MANAGEMENT AND STRUCTURAL DESIGN: FOM Favero & Omboni Ingegneria 30032 Mirano, Venezia, Italia Tel. +39 041 435933, Fax +39 041 435933, Email: info@fom.it, www.fom.it		MEP DESIGN: Materio-Tifs Corso Stati Uniti 56 - 50127 Padova, Italia Tel. +39 049 800010, Fax +39 049 808201, Email: info@materio-tifs.it, www.materio-tifs.it			
ARCHITECTURAL DESIGN: MC A Via De Carracci, 6M - 40129 Bologna, Italia Tel. +39 051 4313361, Fax +39 051 4313316, Email: mca@mcarchitects.it		LOCAL SUPPORT: DFS DFS Engineering Makovacka 1 - 81 000 Podgorica, Montenegro Tel. +382 20 228 501, Email: info@dfs-engineering.com			
Designer: Bul. Obilnica Vukobratova bb, 81000 Podgorica, Crna Gora studio SYNTHESIS architecture & design info@studiothesis.me, Tel. +382 20 228 082, Fax +382 20 228 084, Email: info@studiothesis.me, www.studiothesis.me					
Discipline - STRUCTURE: FRAME ProjeKta d.o.o. ProjeKta d.o.o. - Projektno inženjersko arhitektonsko inženjersko podjetje Bul. Obilnica Vukobratova bb, 81000 Podgorica, Crna Gora Tel. +382 20 228 082, Fax +382 20 228 084, Email: info@projeKta.me, www.projeKta.me		Discipline - WATER AND SEWAGE: HIDROFOKUS Tuzi Miroslavica br. 2, 81000 Podgorica, Crna Gora Tel. +382 20 228 082, Email: info@hidrofokus.me, www.hidrofokus.me			
Discipline - ELECTRICAL WIRING / High Voltage: SIENERSYS SIENERSYS s.p.a. - Ingegneria e Progettazione Via S. Maria Maddalena 10, 00187 Roma, Italia Tel. +39 06 47 232 233, Fax +39 06 47 232 234, Email: info@sienersys.com, www.sienersys.com		Discipline - ELECTRICAL WIRING / Low Voltage: SIENERSYS SIENERSYS s.p.a. - Ingegneria e Progettazione Via S. Maria Maddalena 10, 00187 Roma, Italia Tel. +39 06 47 232 233, Fax +39 06 47 232 234, Email: info@sienersys.com, www.sienersys.com			
Discipline - MECHANICAL SERVICES: NOVA ENERGIJA NOVA ENERGIJA d.o.o. - Inženjersko-projektno inženjersko podjetje NINA ULIČIČEVA UL. 11000 PODGORICA, CRNA GORA Tel. +382 20 228 082, Fax +382 20 228 084, Email: info@novajerija.me, www.novajerija.me		Discipline - FIRE PROTECTION: PREVIZION PREVIZION d.o.o. - Inženjersko-projektno inženjersko podjetje 4. Jul 15-1, ul. Obilnica Vukobratova bb, 81000 Podgorica, Crna Gora Tel. +382 20 228 082, Fax +382 20 228 084, Email: info@previzion.me, www.previzion.me			
Building and location: Business building - Building of the Government of Montenegro ENERGY EFFICIENT BUILDING Urban plot 9 DUP "Univerzitetski centar" - amendments Podgorica, Montenegro					
ISSUE MAIN DESIGN		WATER DRAWINGS AND REPORT			
TITLE PUBLIC HEALTH SANITARY SCHEMATIC					
REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					
ISSUE NR.					
le_201					
DATE:	30/11/2010	SCALE:	-	FILE:	926_le_201.dwg
J.N.	926	DRAW:	G. A.	APPROVED:	R. M.

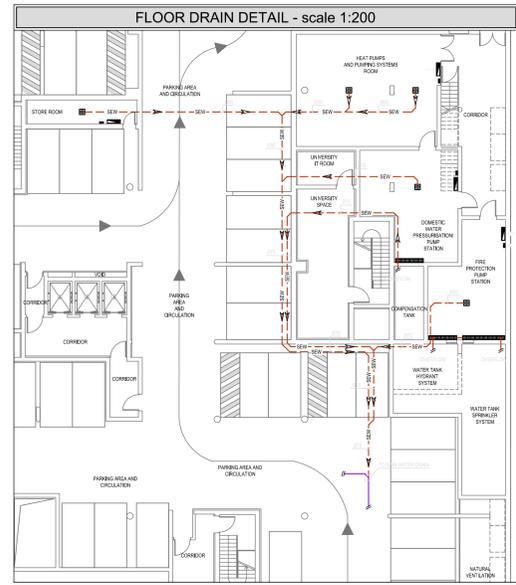


LEGEND

	MECHANICAL SHAFT		WATER POOL
	COLUMN SEWAGE NUMBERS		COLD DOMESTIC WATER
	FIRE HOSE		HOT DOMESTIC WATER
	PORTABLE POWDER EXTINGUISHER (kg)		RECIRCULATING HOT DOMESTIC WATER
	PORTABLE EXTINGUISHER CARBON DIOXIDE (kg)		PIPE FIRE
	FLOOR DRAIN		CEILING SEWAGE PIPE
	BUTTERFLY VALVE		UNDER SLAB SEWAGE PIPE
	BALL VALVE		VENTILATION PIPE
	WATER METER		CONDENSATE DRAIN

PIPE INSULATIONS

CIRCUIT	LOCATION	MATERIAL	INSULATION	INSULATION THICKNESS	EXTERNAL COVER WHEN EXPOSED
COLD DOMESTIC WATER	Underground	PuHD	-	-	-
COLD DOMESTIC WATER	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
COLD DOMESTIC WATER	Heated area (in the manholes)	Galvanized steel	Flexible elastomeric foam	13	-
COLD DOMESTIC WATER	From the manholes to the plumbing fixtures	PuX-A/PuHD	Flexible elastomeric foam	9	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Heated area (in the manholes)	Galvanized steel	Flexible elastomeric foam	13	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	From the manholes to the plumbing fixtures	PuX-A/PuHD	Flexible elastomeric foam	9	-
CONDENSATE DRAIN	Everywhere	Polyethylene	-	-	-
SEWAGE	Everywhere except level -1	Polyethylene	-	-	-
SEWAGE	Level -1	Grey cast iron	-	-	-
SEWAGE VENTILATION	Everywhere	Polyethylene	-	-	-
POOL	Everywhere	Stainless steel AISI304	-	-	-
FIRE	Central part	Painted black steel	Flexible elastomeric foam	13	Aluminum sheet
FIRE	Non-heated area	Painted black steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
FIRE	Heated area	Painted black steel	-	-	-
PRESSURE FILTER	Everywhere	Calcium silicate insulated	-	-	-



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
 MINISTARSTVO UREĐENJA I ZAŠTITE ŽIVOTNE SREDINE
 MINISTARSTVO TURIZMA I PROMETA NEKRETNIM PRAVIMA

PROJECT MANAGER AND STRUCTURAL DESIGNER: **FCM** (Fondacija za Čovječnost i Montenegro)

MECHANICAL DESIGN: **MC A** (Montenegro Consulting Architects)

DESIGN: **studio SYNTHESIS architecture & design**

STRUCTURE: **FRAME**

ELECTRICAL WIRING / High voltage: **SINERGIS**

ELECTRICAL WIRING / Low voltage: **NOVA ENERGIJA**

WATER AND SEWAGE: **HIDROFOKUS**

ELECTRICAL WIRING / Low voltage: **SINERGIS**

FIRE PROTECTION: **PREVENCION**

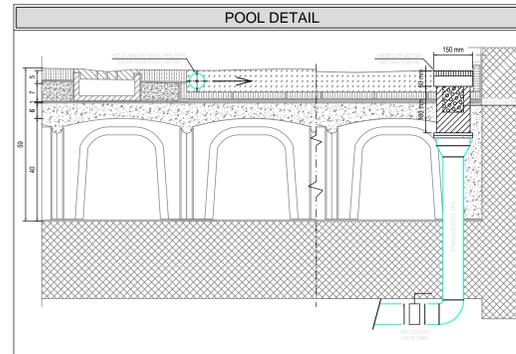
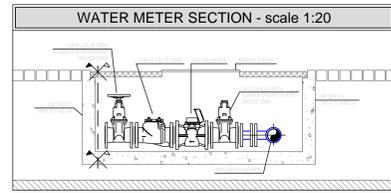
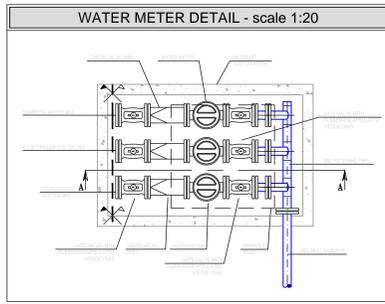
Business building - Building of the Government of Montenegro
 Energy Efficient Building
 Urban plot 9
 DUP "Univerzitetski centar" - amendments
 Podgorica, Montenegro

ISSUE: **MAIN DESIGN** WATER DRAWINGS AND REPORT

TITLE: PUBLIC HEALTH SANITARY LAYOUT LEVEL -1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
1					
2					
3					
4					
5					
6					

DATE: 30/11/2010 SCALE: 1:100 FILE: 506_10_200.dwg
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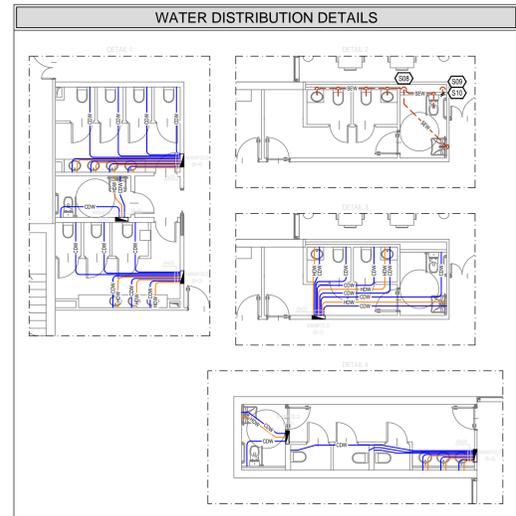


LEGEND

	MECHANICAL SHAFT		WATER POOL
	COLUMN SEWAGE NUMBERS		COLD DOMESTIC WATER
	FIRE HOSE		HOT DOMESTIC WATER
	PORTABLE POWDER EXTINGUISHER (6kg)		RECIRCULATING HOT DOMESTIC WATER
	PORTABLE EXTINGUISHER CARBON DIOXIDE (6kg)		PIPE FIRE
	FLOOR DRAIN		CEILING SEWAGE PIPE
	BUTTERFLY VALVE		UNDER SLAB SEWAGE PIPE
	BALL VALVE		VENTILATION PIPE
	WATER METER		CONDENSATE DRAIN

PIPE INSULATIONS

CIRCUIT	LOCATION	MATERIAL	INSULATION	INSULATION THICKNESS	EXTERNAL COVER WHEN EXPOSED
COLD DOMESTIC WATER	Underground	PpHD	-	-	-
COLD DOMESTIC WATER	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
COLD DOMESTIC WATER	Heated area all the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
COLD DOMESTIC WATER	From the manifolds to the plumbing fixtures	PpX-Al-PpHD	Flexible elastomeric foam	9	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Heated area all the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	From the manifolds to the plumbing fixtures	PpX-Al-PpHD	Flexible elastomeric foam	9	-
CONDENSATE DRAIN	Everywhere	Polyethylene	-	-	-
SEWAGE	Everywhere except level -1	Polyethylene	-	-	-
SEWAGE	Level -1	Grey cast iron	-	-	-
SEWAGE VENTILATION	Everywhere	Polyethylene	-	-	-
POOL	Everywhere	Stainless steel AISI304	-	-	-
POOL	Central Plant	Stainless steel AISI304	Flexible elastomeric foam	13	Aluminum sheet
FIRE	Non-heated area	Painted black steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
FIRE	Heated area	Painted black steel	-	-	-
PRESSURE FILTER	Everywhere	Calcium silicate insulated	-	-	-



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE PROSTORA
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 81000 Podgorica, Crna Gora

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 www.fcm-italia.com

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 Fax: +381 20 224 085
 hidrofokus@hidrofokus.com

MECHANICAL DESIGNER:
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 Fax: +381 20 224 085
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 81000 Podgorica, Crna Gora
 Tel: +381 20 224 084
 Fax: +381 20 224 085
 prevenis@prevenis.com

Building and location:
 Business building - building of the Government of Montenegro
 ENERGY EFFICIENT BUILDING
 Urban plot 9
 DUP "Univerzitetski centar" - amendments
 Podgorica, Montenegro

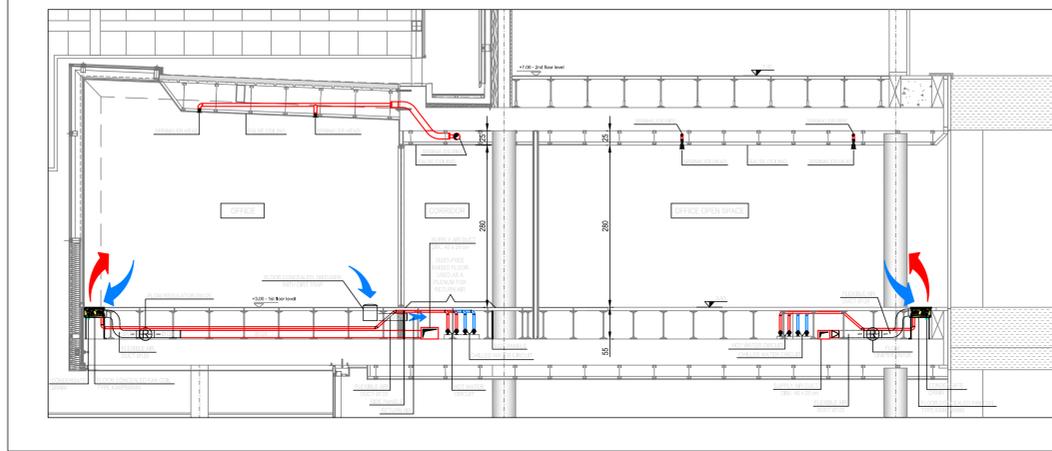
ISSUE:
MAIN DESIGN WATER DRAWINGS AND REPORT
 TITLE:
 PUBLIC HEALTH SANITARY LAYOUT LEVEL 0

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
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3					
4					
5					

ISSUE NR. **le_203**

DATE: 30/11/2010 SCALE: 1:100 FILE: 506_10_203.dwg
 J.N. 506 DRAW: G.A. APPROVED: R.M.

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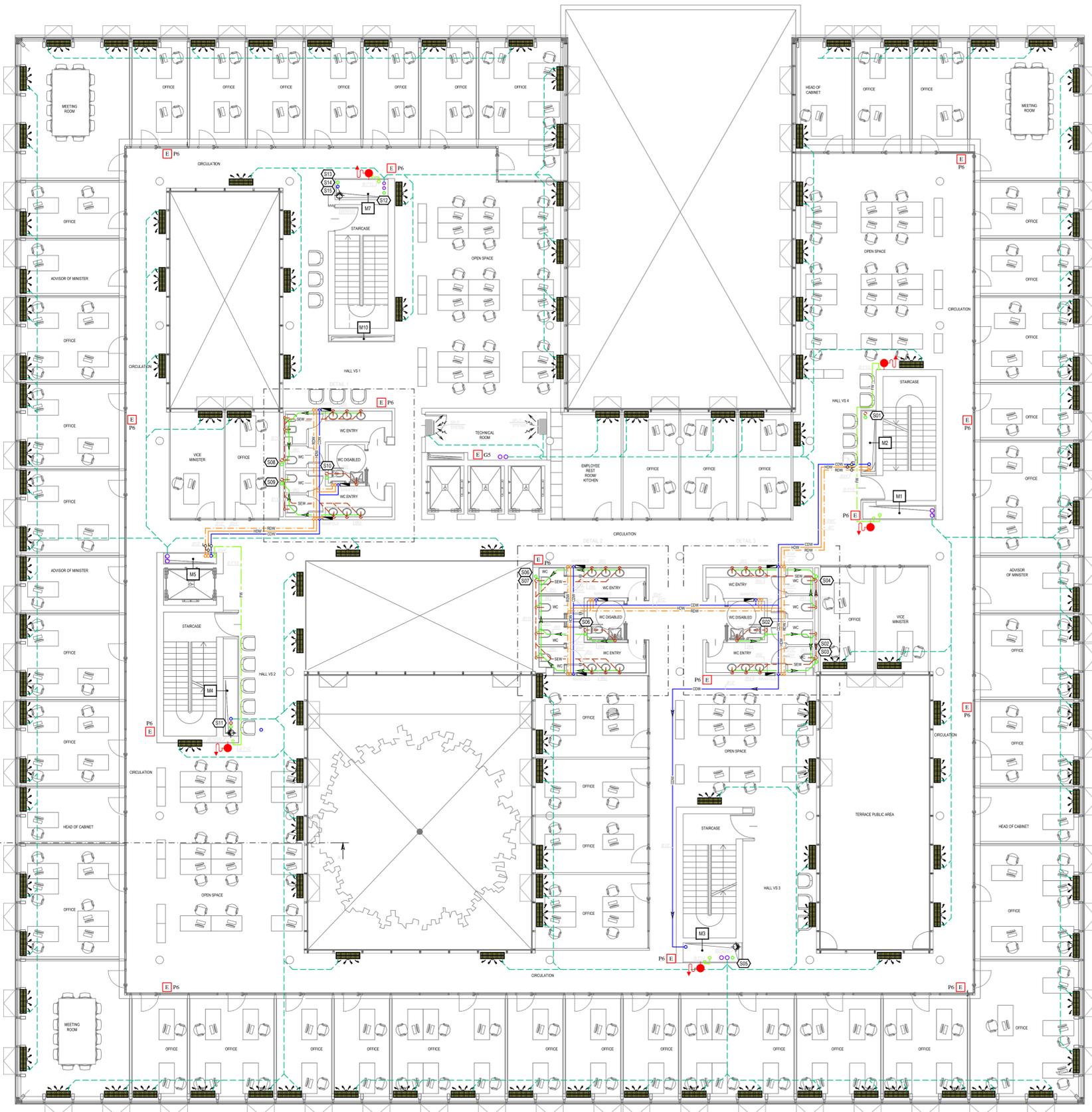
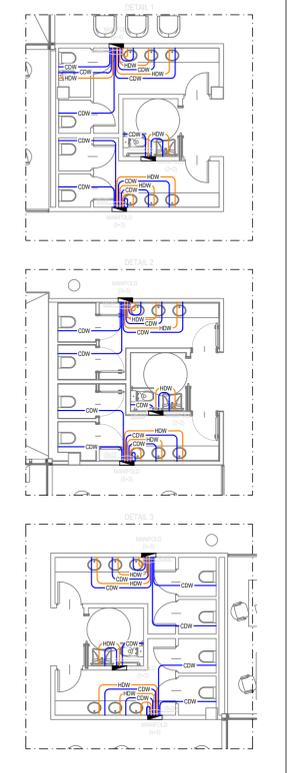
LEGEND

Mx	MECHANICAL SHAFT	WP	WATER POOL
Sx	COLUMN SEWAGE NUMBERS	CDW	COLD DOMESTIC WATER
+	FIRE HOSE	HDW	HOT DOMESTIC WATER
P6 E	PORTABLE POWDER EXTINGUISHER (KG)	RDW	RECIRCULATING HOT DOMESTIC WATER
G5 E	PORTABLE EXTINGUISHER CARBON DIOXIDE (KG)	FW	PIPE FIRE
FD	FLOOR DRAIN	SEW	CEILING SEWAGE PIPE
BV	BUTTERFLY VALVE	SEW	UNDER SLAB SEWAGE PIPE
SV	BALL VALVE	VENT	VENTILATION PIPE
WM	WATER METER	CD	CONDENSATE DRAIN

PIPE INSULATIONS

CIRCUIT	LOCATION	MATERIAL	INSULATION	INSULATION THICKNESS	EXTERNAL COVER WHEN EXPOSED
COLD DOMESTIC WATER	Underground	PvHD	-	-	-
COLD DOMESTIC WATER	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
COLD DOMESTIC WATER	Heated area at the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
COLD DOMESTIC WATER	From the manifolds to the plumbing fixtures	PvK-Al-PvHD	Flexible elastomeric foam	9	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Heated area at the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	From the manifolds to the plumbing fixtures	PvK-Al-PvHD	Flexible elastomeric foam	9	-
CONDENSATE DRAIN	Everywhere	Polyethylene	-	-	-
SEWAGE	Everywhere except level -1	Polyethylene	-	-	-
SEWAGE	Level -1	Grey cast iron	-	-	-
SEWAGE VENTILATION	Everywhere	Polyethylene	-	-	-
POOL	Everywhere	Stainless steel AISI304	-	-	-
POOL	Central Plant	Stainless steel AISI304	Flexible elastomeric foam	13	Aluminum sheet
FIRE	Non-heated area	Painted black steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
FIRE	Heated area	Painted black steel	-	-	-
PRESSURE FILTER	Everywhere	Calcium silicate insulated	-	-	-

WATER DISTRIBUTION DETAILS



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
 MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
 MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE OF THE REPUBLIC OF MONTENEGRO

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: **F&M** favorin@f&m.it

ARCHITECTURAL DESIGN: **MC A** Via De Caracci, 6M - 40129 Bologna, Italia

DISCIPLINE: **FRAME** (Project G.S.D.), **ELECTRICAL WIRING** (High voltage: SIENSISYS, Low voltage: SIENSISYS), **MECHANICAL SERVICES** (NOVA ENERGIJA), **WATER AND SEWAGE** (HIROFOKUS), **ELECTRICAL WIRING** (Low voltage: slimes), **FIRE PROTECTION** (PREVIZIJA)

Building and location: **Business building - building of the Government of Montenegro**
 ENERGY EFFICIENT BUILDING
 Urban plot 9
 DUP "Univerzitetski centar" - amendments
 Podgorica, Montenegro

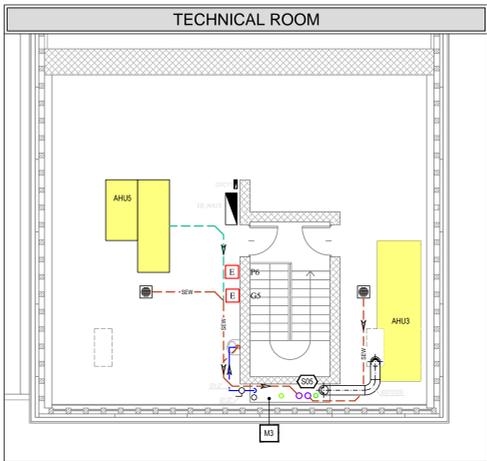
ISSUE: **MAIN PROJECT** WATER DRAWINGS AND REPORT

TITLE: PUBLIC HEALTH SANITARY LAYOUT LEVEL 1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
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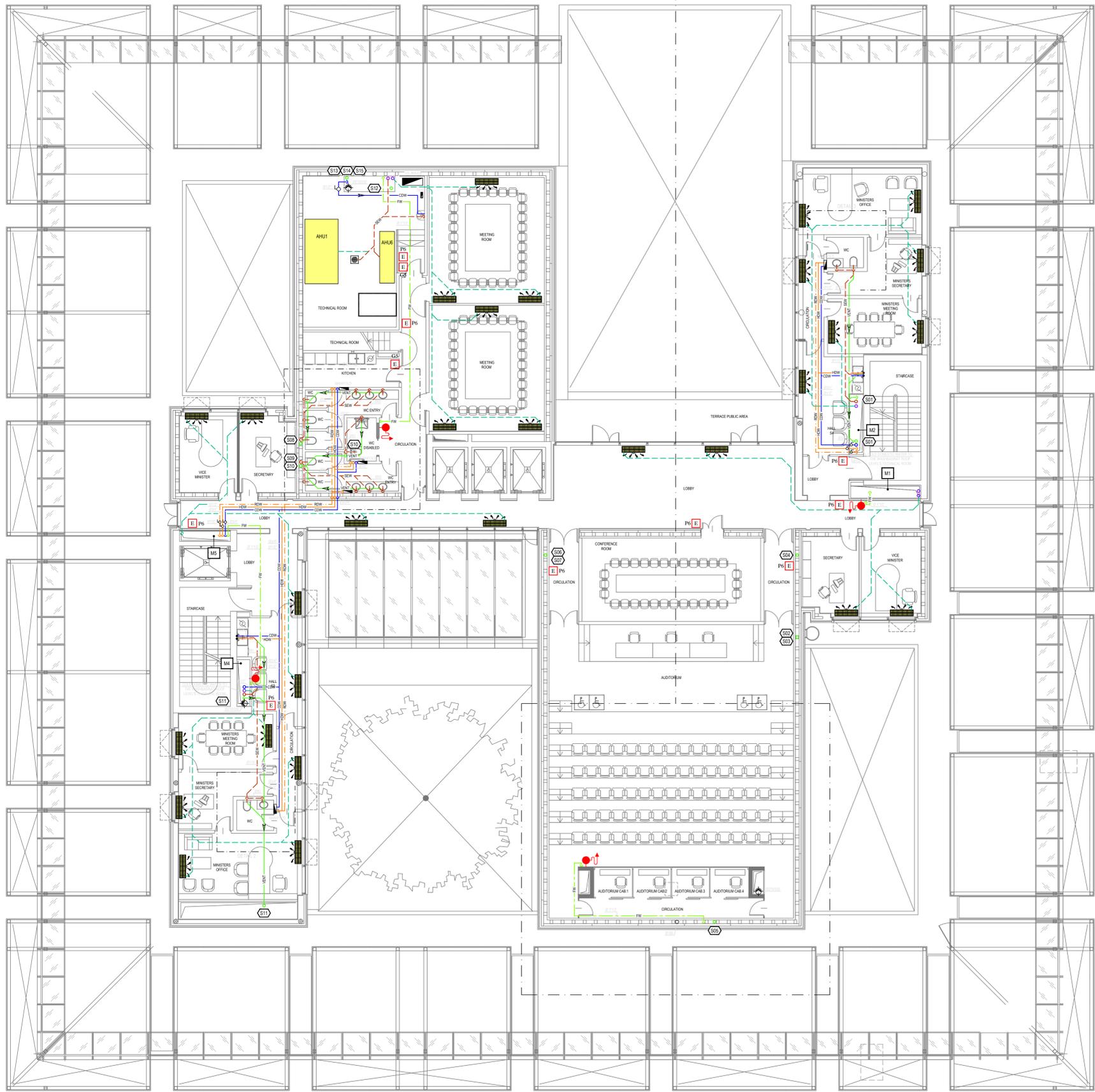
ISSUE NR. **le_204**

DATE: 30/11/2010 SCALE: 1:100 FILE: 908_le_204.dwg
 UN: 908 DRAW: G. A. APPROVED: R. M.



LEGEND			
Mx	MECHANICAL SHAFT	WP	WATER POOL
Sx	COLUMN SEWAGE NUMBERS	CDW	COLD DOMESTIC WATER
Fire Hose	FIRE HOSE	HDW	HOT DOMESTIC WATER
P6 E	PORTABLE POWDER EXTINGUISHER (6kg)	RDW	RECIRCULATING HOT DOMESTIC WATER
C5 E	PORTABLE EXTINGUISHER CARBON DIOXIDE (6kg)	FW	PIPE FIRE
FD	FLOOR DRAIN	SEW	CEILING SEWAGE PIPE
BV	BUTTERFLY VALVE	SEW	UNDER SLAB SEWAGE PIPE
Ball Valve	BALL VALVE	VENT	VENTILATION PIPE
Water Meter	WATER METER	COND	CONDENSATE DRAIN

PIPE INSULATIONS					
CIRCUIT	LOCATION	MATERIAL	INSULATION	INSULATION THICKNESS	EXTERNAL COVER WHEN EXPOSED
COLD DOMESTIC WATER	Underground	PeHD	-	-	-
COLD DOMESTIC WATER	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
COLD DOMESTIC WATER	Heated area at the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
COLD DOMESTIC WATER	From the manifolds to the plumbing fixtures	PeX-Al-PeHD	Flexible elastomeric foam	9	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Heated area at the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	From the manifolds to the plumbing fixtures	PeX-Al-PeHD	Flexible elastomeric foam	9	-
CONDENSATE DRAIN	Everywhere	Polyethylene	-	-	-
SEWAGE	Everywhere except level -1	Polyethylene	-	-	-
SEWAGE	Level -1	Grey cast iron	-	-	-
SEWAGE VENTILATION	Everywhere	Polyethylene	-	-	-
POOL	Everywhere	Stainless steel AISI304	-	-	-
POOL	Central Plant	Stainless steel AISI304	Flexible elastomeric foam	13	Aluminum sheet
FIRE	Non-heated area	Painted black steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
FIRE	Heated area	Painted black steel	-	-	-
PRESSURE FILTER	Everywhere	Calcium silicate insulated	-	-	-



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
 MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
 MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: F&M favorobitarski inženjerska

MEP DESIGN: Manens-Tips

ARCHITECTURAL DESIGN: MC A

LOCAL SUPPORT: DFS Engineering

Designers: studio SYNTHESIS architecture & design

Discipline - STRUCTURE: FRAME Project G.S.D.

Discipline - WATER AND SEWAGE: HIDROFOKUS

Discipline - ELECTRICAL WIRING / High voltage: SIENERSYS

Discipline - ELECTRICAL WIRING / Low voltage: slimes

Discipline - MECHANICAL SERVICES: NOVA ENERGIJA

Discipline - FIRE PROTECTION: PREVENIS

Building and location: Business building - building of the Government of Montenegro ENERGY EFFICIENT BUILDING Urban plot 9 DUP "Univerzitetski centar" - amendments Podgorica, Montenegro

ISSUE: MAIN DESIGN WATER DRAWINGS AND REPORT

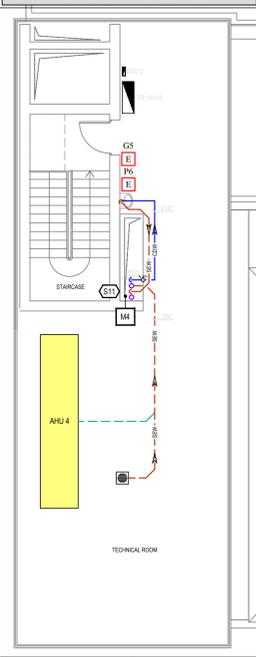
TITLE: PUBLIC HEALTH SANITARY LAYOUT LEVEL 2

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
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b					
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d					

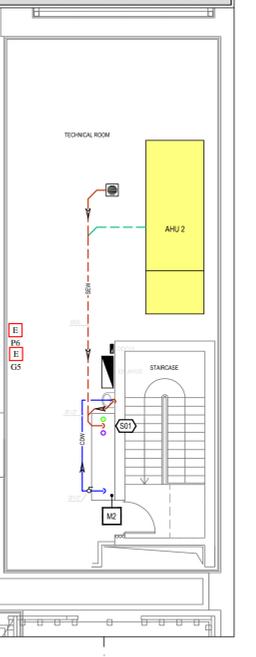
ISSUE NR. **le_205**

DATE: 30/11/2010 SCALE: 1:100 FILE: 928_le_205.dwg
 UN: 928 DRAW: G. A. APPROVED: R. M.

DETAIL TECHNICAL ROOM



DETAIL TECHNICAL ROOM

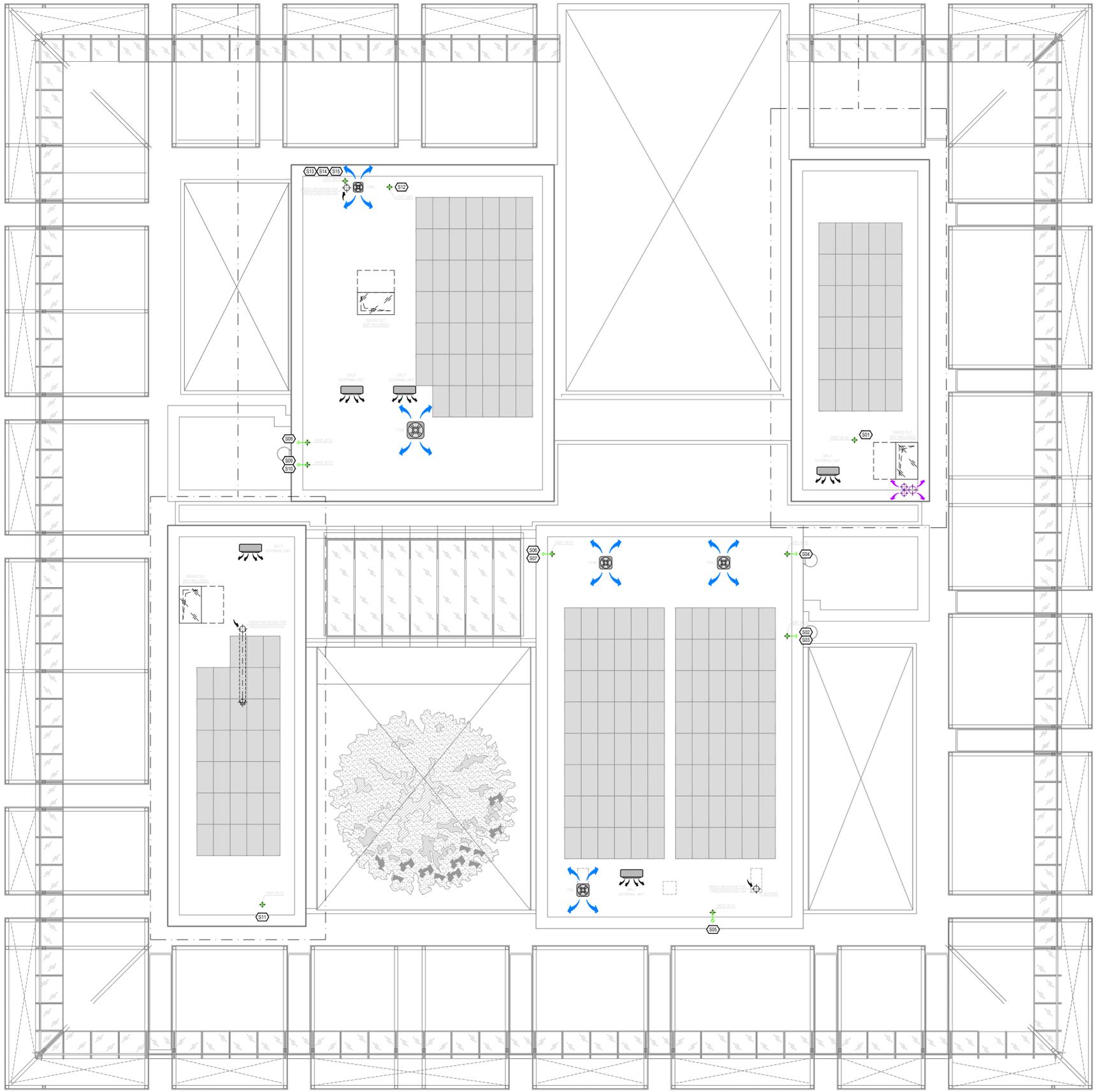


LEGEND

Mx	MECHANICAL SHAFT	WP	WATER POOL
Sx	COLUMN SEWAGE NUMBERS	CDW	COLD DOMESTIC WATER
FIRE HOSE	FIRE HOSE	HDW	HOT DOMESTIC WATER
P6 E	PORTABLE POWDER EXTINGUISHER (KG)	RDW	RECIRCULATING HOT DOMESTIC WATER
C5 E	PORTABLE EXTINGUISHER CARBON DIOXIDE (KG)	FW	PIPE FIRE
FLOOR DRAIN	FLOOR DRAIN	SEW	CEILING SEWAGE PIPE
BUTTERFLY VALVE	BUTTERFLY VALVE	SEW	UNDER SLAB SEWAGE PIPE
BALL VALVE	BALL VALVE	VENT	VENTILATION PIPE
WATER METER	WATER METER	COND	CONDENSATE DRAIN

PIPE INSULATIONS

CIRCUIT	LOCATION	MATERIAL	INSULATION	INSULATION THICKNESS	EXTERNAL COVER WHEN EXPOSED
COLD DOMESTIC WATER	Underground	PvHD	-	-	-
COLD DOMESTIC WATER	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
COLD DOMESTIC WATER	Heated area if the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
COLD DOMESTIC WATER	From the manifolds to the plumbing fixtures	PvK-Al-PvHD	Flexible elastomeric foam	9	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Heated area if the manifolds	Galvanized steel	Flexible elastomeric foam	13	-
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	From the manifolds to the plumbing fixtures	PvK-Al-PvHD	Flexible elastomeric foam	9	-
CONDENSATE DRAIN	Everywhere	Polyethylene	-	-	-
SEWAGE	Everywhere except level -1	Polyethylene	-	-	-
SEWAGE	Level -1	Grey cast iron	-	-	-
SEWAGE VENTILATION	Everywhere	Polyethylene	-	-	-
POOL	Everywhere	Stainless steel AISI304	-	-	-
POOL	Central Plant	Stainless steel AISI304	Flexible elastomeric foam	13	Aluminum sheet
FIRE	Non-heated area	Painted black steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
FIRE	Heated area	Painted black steel	-	-	-
PRESSURE FILTER	Everywhere	Calcium silicate insulated	-	-	-



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
 MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
 MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE OF THE REPUBLIC OF MONTENEGRO

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: F&M favorobitran inženjerska

MEP DESIGN: Manens-Tips

ARCHITECTURAL DESIGN: MC A

LOCAL SUPPORT: DFS Engineering

DESIGNER: studio SYNTHESIS architecture & design

DISCIPLINE - STRUCTURE: FRAME PROJECT G.S.D.

DISCIPLINE - WATER AND SEWAGE: HIDROFOKUS

DISCIPLINE - ELECTRICAL WIRING / High voltage: SIENERSYS

DISCIPLINE - ELECTRICAL WIRING / Low voltage: slimes

DISCIPLINE - MECHANICAL SERVICES: NOVA ENERGIJA

DISCIPLINE - FIRE PROTECTION: PREVENJA

Building and location: Business building - building of the Government of Montenegro ENERGY EFFICIENT BUILDING Urban plot 9 DUP "Univerzitetski centar" - amendments Podgorica, Montenegro

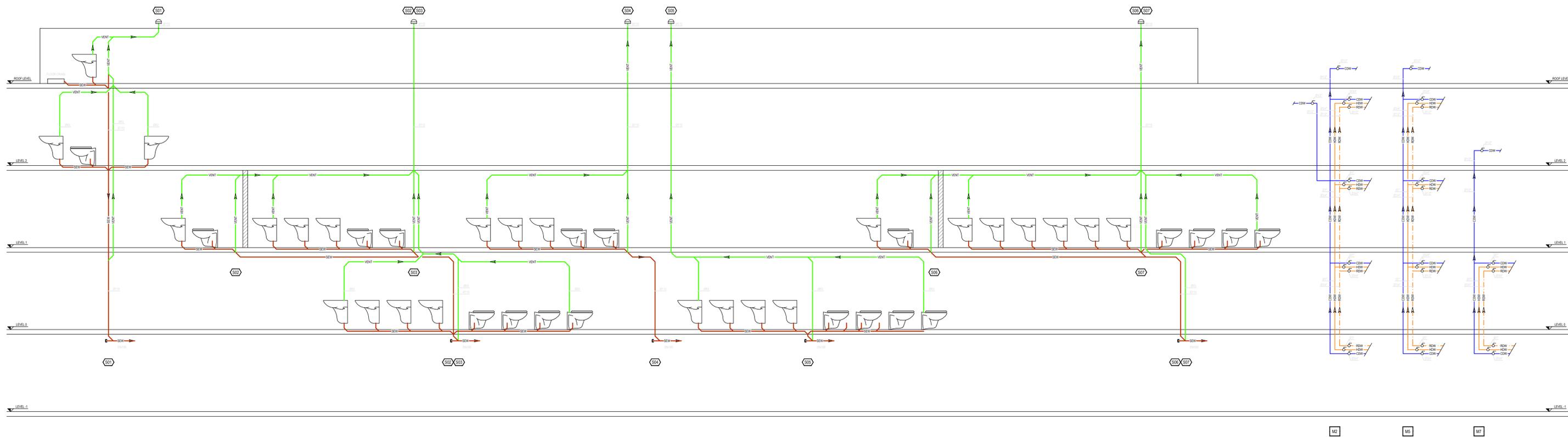
ISSUE: MAIN DESIGNER WATER DRAWINGS AND REPORT

TITLE: PUBLIC HEALTH SANITARY LAYOUT ROOF LEVEL

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

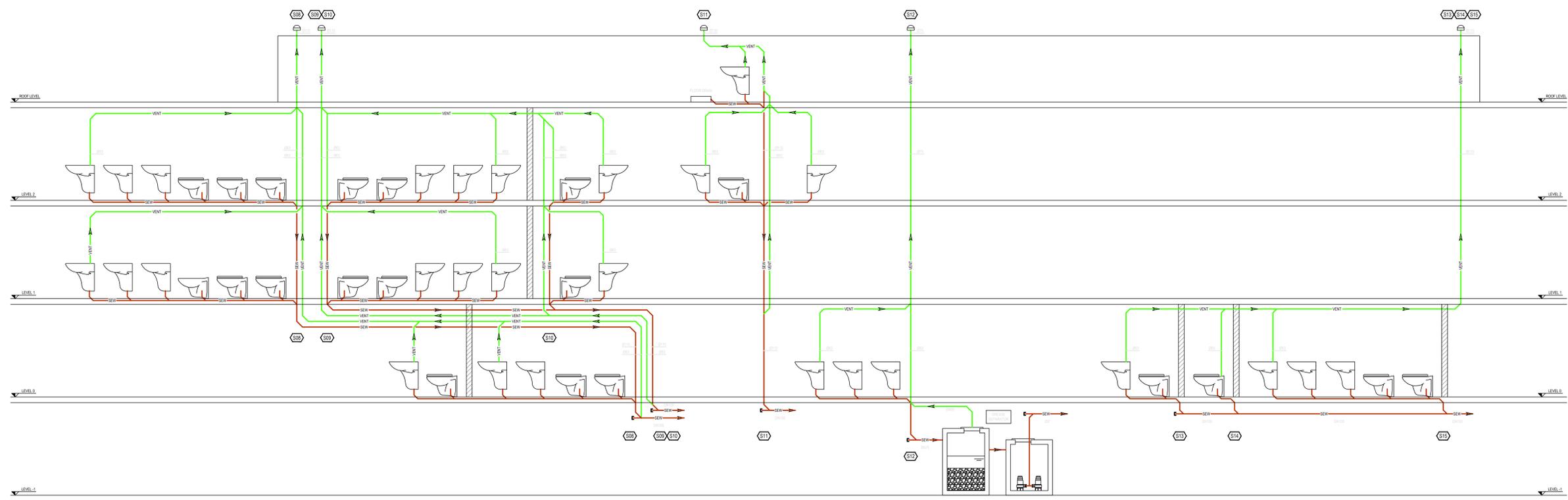
ISSUE NR. **le_206**

DATE: 30/11/2010 SCALE: 1:100 FILE: 508_la_206.dwg
 DWR: G. A. APPROVED: R. M.



LEGEND			
5	BALL VALVE	M	MECHANICAL SHAFT
	BATHROOM SINKS	CS	COLUMN SEWAGE NUMBERS
	BIDET	SEW	SEWAGE PIPE
	WATER CLOSETS	VENT	VENTILATION PIPE
		CDW	COLD DOMESTIC WATER
		HDW	HOT DOMESTIC WATER
		RDW	RE-CIRCULATING HOT DOMESTIC WATER

PIPE INSULATIONS					
CIRCUIT	LOCATION	MATERIAL	INSULATION	INSULATION THICKNESS	EXTERNAL COVER WHEN EXPOSED
SEWAGE	Everywhere except level -1	Polyethylene	-	-	-
SEWAGE	Level -1	Gray cast iron	-	-	-
SEWAGE VENTILATION	Everywhere	Polyethylene	-	-	-
COLD DOMESTIC WATER	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet and wrap-on heating cable
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Non-heated area	Galvanized steel	Flexible elastomeric foam	30	Aluminum sheet
HOT DOMESTIC WATER (RECIRCULATING INCLUDED)	Heated area till the manifolds	Galvanized steel	Flexible elastomeric foam	13	-



INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO
 MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY
 MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE OF THE REPUBLIC OF MONTENEGRO

PROJECT MANAGEMENT AND STRUCTURAL DESIGN: **FCM** (Fincosulting Ingegneria)

MEP DESIGN: **Manens-Tifs**

ARCHITECTURAL DESIGN: **MC A** (MCA architects)

DESIGNER: **studio SYNTHESIS** (architecture & design)

DISCIPLINE - STRUCTURE: **FRAME** (Project d.o.o.)

DISCIPLINE - ELECTRICAL WIRING / High voltage: **SIENERSYS**

DISCIPLINE - MECHANICAL SERVICES: **NOVA ENERGIJA**

DISCIPLINE - WATER AND SEWAGE: **HIDROFOKUS**

DISCIPLINE - ELECTRICAL WIRING / low voltage: **SIENERSYS**

DISCIPLINE - FIRE PROTECTION: **PREVENIA**

Building and location: **Business building - building of the Government of Montenegro ENERGY EFFICIENT BUILDING**
 Urban plot 9
 DUP "Univerzitetski center" - amendments
 Podgorica, Montenegro

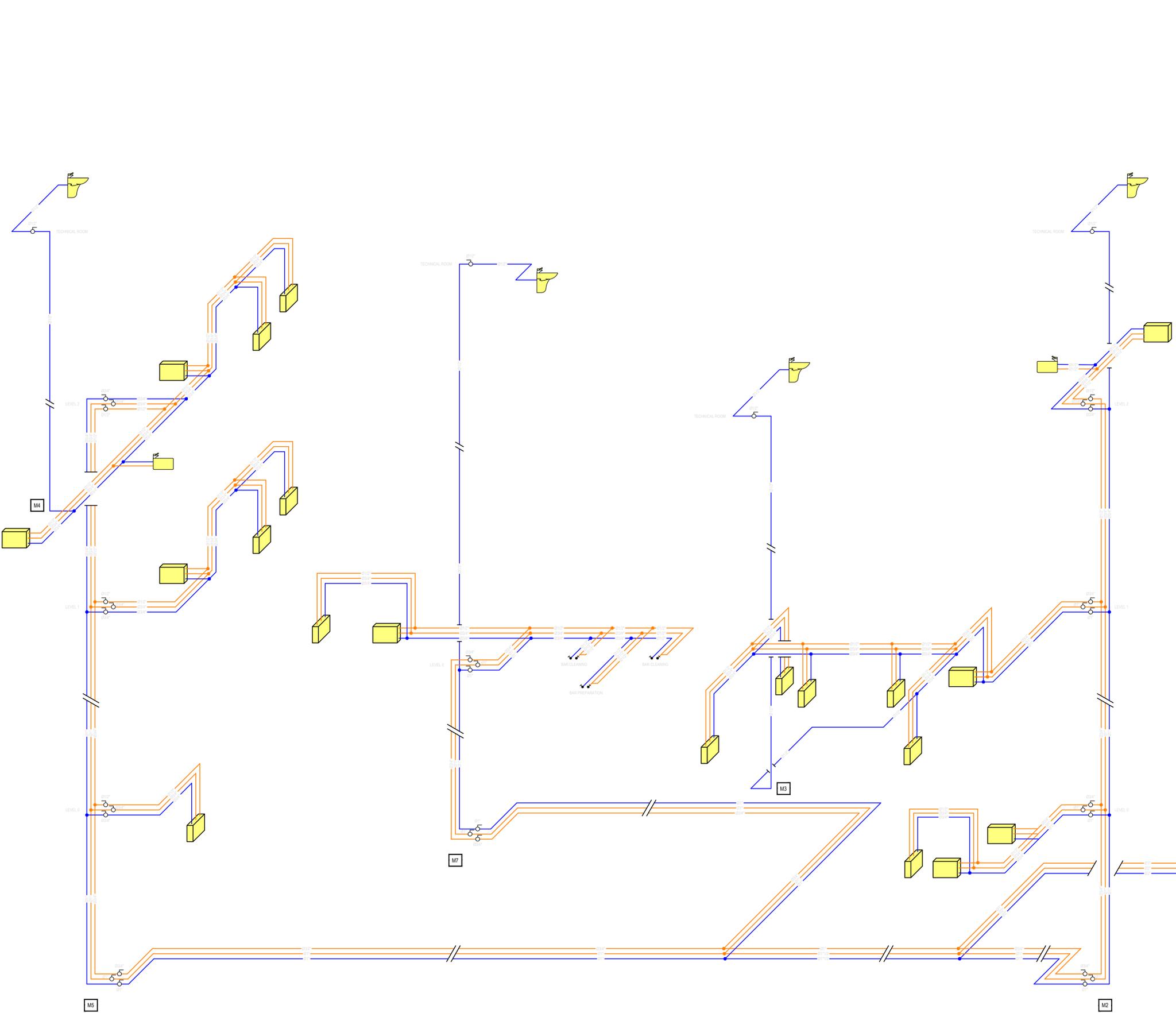
ISSUE: **MAIN DESIGN** WATER DRAWINGS AND REPORT

TITLE: **PUBLIC HEALTH SANITARY ALTIMETRIC**

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
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ISSUE NR. **le_207**

DATE: 30/11/2010 SCALE: - FILE: 926_le_207.dwg
 JN: 926 DRAW: G. A. APPROVED: R. M.



LEGEND			
	BALL VALVE		MECHANICAL SHAFT
	BASIN		COLD DOMESTIC WATER
	MANIFOLD		HOT DOMESTIC WATER
	SINK		RECIRCULATING HOT DOMESTIC WATER

INVESTOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO MINISTRY OF THE ENVIRONMENT, LAND AND SEA OF THE REPUBLIC OF ITALY Bul. Džordža Valingtona bb, 81000 Podgorica, Crna Gora Tel. +39 041 5785711, Fax +39 041 4356553, www.favero-milani.com, favero@favero-milani.com		MINISTARSTVO TURIZMA I ZAŠTITE ŽIVOTNE SREDINE Rimski Trg 46, PC "Vektra", 81000 Podgorica, Crna Gora Tel. +382 20 228 501, Fax +382 20 228 501, e-mail: info@dfs-engineering.com			
PROJECT MANAGEMENT AND STRUCTURAL DESIGN: F&M FaveroMilani Ingegneria 30035 Mirano, Venezia - Italia Tel. +39 041 5785711, Fax +39 041 4356553, www.favero-milani.com, favero@favero-milani.com		MSP DESIGN: Maniens-Tifs Corso Stati Uniti 56 - 35127 Padova, Italia Tel. +39 049 8705110, Fax +39 049 6982011, www.manien-tifs.it, e-mail: info@manien-tifs.it, term@manien-tifs.it			
ARCHITECTURAL DESIGN: MC A Via De Carracci 6/M - 40129 Bologna, Italia Tel. +39 051 63 13 381 - Fax +39 051 63 13 316, e-mail: mca@mcarchitects.it		LOCAL SUPPORT: DFS DFS Engineering Mostovska 4 - 81 000 Podgorica, Montenegro Tel. +382 20 228 501, e-mail: info@dfs-engineering.com			
Designer: Bul. Džordža Valingtona bb, 81000 Podgorica, Crna Gora studio SYNTHESIS info@studiosynthesis.me, tel. +382 20 228 081, fax. +382 20 228 082, http://www.studiosynthesis.me					
Discipline - STRUCTURE: FRAME Project d.o.o. Prilaznik za projektovanje i inženjering Bul. Džordža Valingtona bb, Podgorica		Discipline - WATER AND SEWAGE: HIDROFOKUS Trg Nikole Kovačevića br. 2, 81000 Podgorica, Crna Gora Tel. +382 20 21 99 70, e-mail: info@hidrofokus.me			
Discipline - ELECTRICAL WIRING / high voltage: SIENERSYS II Crnogorskih boraca 2v, 81000 Podgorica Tel. fax. +382 20 272 323, Mail: +382 20 272 323, E-mail: sienersys@sienersys.com		Discipline - ELECTRICAL WIRING / low voltage: simes inženjering Bul. Džordža Valingtona 1, 81 000 Podgorica, Crna Gora Tel. +382 20 228 485, Fax. +382 20 228 486, mail: info@simesinje.com, PROJECT MANAGEMENT - REAL ESTATE - CONSULTING			
Discipline - MECHANICAL SERVICES: NOVA ENERGIJA D.O.O. ZA PROJEKTOVANJE, INŽENJERING, PROMET I USTROJAVANJE IVANA VUKOVIĆA 26, 81000 PODGORICA, CRNA GORA Tel. Fax. +382 20 235 142, e-mail: novaj@novaj.com.me		Discipline - FIRE PROTECTION: PREVIZIJA ul. 4. Jul 75-1, 81 000 Podgorica, Crna Gora Tel. +382 20 228 399, Mob. +382 20 228 399, Fax. +382 20 228 391, INSTITUT ZA PROJEKTOVANJE IZOBILJE, ZAŠTITA NA RADU I ZAŠTITA ŽIVOTNE SREDINE			
Building and location: Business building - building of the Government of Montenegro ENERGY EFFICIENT BUILDING Urban plot 9 DUP "Univerzitetski centar" - amendments Podgorica, Montenegro					
ISSUE MAIN DESIGN		WATER DRAWINGS AND REPORT			
TITLE PUBLIC HEALTH SANITARY ISOMETRIC VIEW					
REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					
ISSUE NR.				le_208	
DATE:	07/03/2011	SCALE:	-	FILE:	926_le_208.dwg
J.N.	926	DRAW:	G. A.	APPROVED:	R. M.