

FORTA PRO

W E B U I L D M O D U L A R



MODULAR ICU CLINIC

April 2020



- ❏ Forta PRO offers prefabricated volumetric modular solutions for:
 - ❏ Hospitals and clinics
 - ❏ Apartments
 - ❏ Student and Workers dormitories
 - ❏ Hotels and more...
- ❏ Authorized supplier to Danish hospitals
- ❏ Experienced in medical design
- ❏ Implemented projects in Denmark, Sweden, Iceland, UK, USA, Norway, Latvia
- ❏ 120 000 m2 per annum capacity
- ❏ Worldwide shipping



MODULAR ICU CLINIC

MANUFACTURER Forta Prefab SIA, company No 40103727283

CERTIFICATES

Quality Management, Environmental Management, Occupational Health and Safety Management Systems of Forta Prefab Ltd. are ISO 14000, ISO 50001, ISO 45001 and ISO 9001 certified: <http://www.fortapro.com/certificates/>

DISCLAIMER

- The illustrations in this document are all subject to changes and amendments.
- If the build-up and dimensions should be amended during the design detailing phase, any such amendments may impact the price.
- All dimensions are in millimetres
- This drawing is a copyright and property of Forta PRO and is not to be produced, copied, handed over to third party or used for any other purpose other than for which it is intended.
- All dimensions shall be verified on site prior to start of work. Any discrepancy shall be brought to the notice of Forta PRO.
- The construction manager/ contractor must check all dimensions and details and be responsible for the same.
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- This drawing is to be read in conjunction with all relevant architectural, structural, MEP drawings, specialist drawings along with their specifications.
- Any discrepancy shall be brought to the notice of the consultants within 7 working days of receipt of this drawing,
- but always prior to procurement/ execution of works.
- Drawing approval is for the conformity with outline design intent only and does not relieve the project managers/ contractors/ sub contractors from full responsibility for the accuracy, integration and fitness for purpose of design.
- Project managers to revert back within 7 working days of receipt, of this drawing on co-ordination and buildability issues. If otherwise, it would be deemed that they have understood and accepted the drawings/ design and own full responsibility for the works carried out accordingly.
- Optional items are not included in the price.



FREE STANDING MODULAR FAST DEPLOYMENT 20-BED ICU BLOCK WITH TECHNICAL FACILITIES

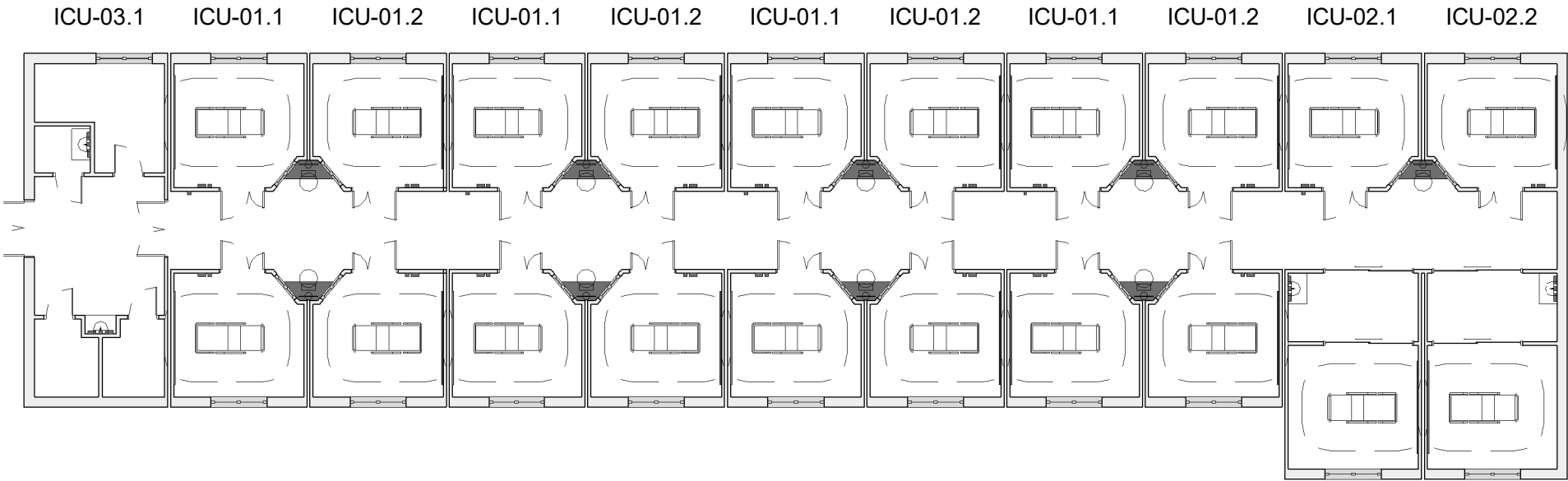
This 20-bed intensive care unit (ICU) department block is supposed to be placed on site-build or prefabricated foundations (not included in the modular program) and connected to hospital systems (ventilation, heating, medical gas, electrical, HIS etc.).

All mechanical, electrical, plumbing, heating, ventilation, air conditioning, medical gas system distribution components up to terminal units are factory installed in the module. Fixed medical equipment can be included and factory installed (not included in the given modular program). The module is ready for plug-and-play functionality.

- All proposed details are indicative only !
- All the details need to be addressed during the design phase !
- All sizes adjustable/alterable for modular design, construction and transportation !
- All potential risks and procedures to eliminate them should be evaluated during design phase !
- During the project, all standards and their application must be evaluated !
- It is possible to reduce module types by making all floor heights identical !
- Architectural, engineering and other specifications/details will be developed during the design phase
- Shafts and utility points should be considered during the design phase
- Structural solutions will be developed during the design phase
- Facade structure and finishing is excluded
- Areas other than marked as MODULAR are not included, if not specified otherwise
- All specifications and documents shall be made available to producer in plain English
- Explicit information on accessibility- or any other specific requirements should be provided to FORTA PRO in the initial design stage. Such as, but not limited to room sizes, special accessibility equipment installation, floor slopes, lighting, door opening sizes
- Gross modular area is defined excluding facade layers (assumed 110mm in thickness)

FIRE: EI 60

Gross Modular Area (GMA) closed type ICU		
Name	Number	Area
ICU 01.1	01.1-001	49.91 m²
ICU 01.1	01.1-002	49.91 m²
ICU 01.1	01.1-003	49.91 m²
ICU 01.1	01.1-004	49.91 m²
ICU 01.2	01.2-001	49.91 m²
ICU 01.2	01.2-002	49.91 m²
ICU 01.2	01.2-003	49.91 m²
ICU 01.2	01.2-004	49.91 m²
ICU 02.1	02.1-001	60.22 m²
ICU 02.2	02.2-001	63.43 m²
ICU 03.1	03.1-001	52.57 m²
11		575.46 m²



PROJECT NAME: Respiratory ICU		PROJECT N°: 20EU-M003
SHEET NAME: ICU department plan		REVISION:
DRAWING ID: A100 /		SCALE: 1 : 200 @A3
PROJ. MAN.	Ethan Chetrit	STAGE:
APPROVED BY	Kristaps Miķelsons	Estimation
ARCHITECT	Mārcis Rancāns	
DRAWN BY	Mārcis Rancāns	
REVIEW DATE	26/03/2020 15:26:35	
PROJECT ISSUED	Issue Date	

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Revision	Date	Description	Issued by

Electrical and Medical gas supply panel:

O ₂	3x - ventilator, flowmeter pipeline, anesthetic machine
Air	2x - ventilator
Suction	2x - suction apparatus, endoscopy
GPO	24x - bed, ventilator, multi parameter monitor, 4-9x infusion pump, 4x syringe pump, computer, examination lamp, blood warmer, ecg, eeg, us/cardiac-echo, endoscopy, anaesthetic machine, haemofiltration/ haemodialysis, +redundant outlets
GND	16x - equipotential earth connector plugs
RCD	1x - residual current device for sockets
Data	2x - computer, CCTV

Wall supplies:

GPO	8x - electric fan, humidifier, defibrillator, x-ray, vacuum cleaner, +redundant outlets
RCD	1x - residual current device for sockets
Data	2x - CCTV, computer
Nurse call:	1x - Staff/staff call, cardiac arrest call + audio-visual signal elements

Nurse work-desk:

GPO	3x - computer, telephone, +redundant outlet
Data	2x - computer, telephone

Room Material and outline specifications:

Floor	Vinyl/ Linoleum flooring, slip resistant, 150mm coving, heavy duty
Walls	Paint, chemically resistant to daily wet cleaning with disinfectants
Ceiling	Ceiling tiles, accoustically absorbent, sealed
Door: ICU	1 1/2 hinged door, clear opening 920+480mm, air tight
Door protection	300mmH kick plate, vinyl
Window: control	1000Wx800H mm wall opening, with integrated blinds
Window: exterior	1800Wx1600H mm wall opening, transparent from inside, translucent from outside
Worktop	laminare

Other Fixtures, Equipment and associated Services:

Surface cleaning:

All surface materials be compatible with hard cleaning with disinfectants containing:

- Hydrogen Peroxide
- Sodium Hypochlorite
- Isopropanol
- Formaldehyde
- Glutaraldehyde
- Peracetic acid

Notes:

Haemodialysis	No RO water and sewage provisioned for haemodialysis
Examination light	Assumed fixed on wall panel rail
Bariatric	Services not provisioned for bariatric patients
Columns	Column dimensions w/out fire paint thickness
Air supply	Mechanical ventilation and cooling, arrestance 85% (F7 according to EN 1822:2009), min. 10 AC/hr
Emergency power	No special emergency power outlets are provisioned
Temperature	Locally controllable
Humidity	Locally controllable
Heating	Low Pressure Hot Water radiators, thermostatically controllable
Lighting	Diffuse, reading and examination lighting

ICU-01.1

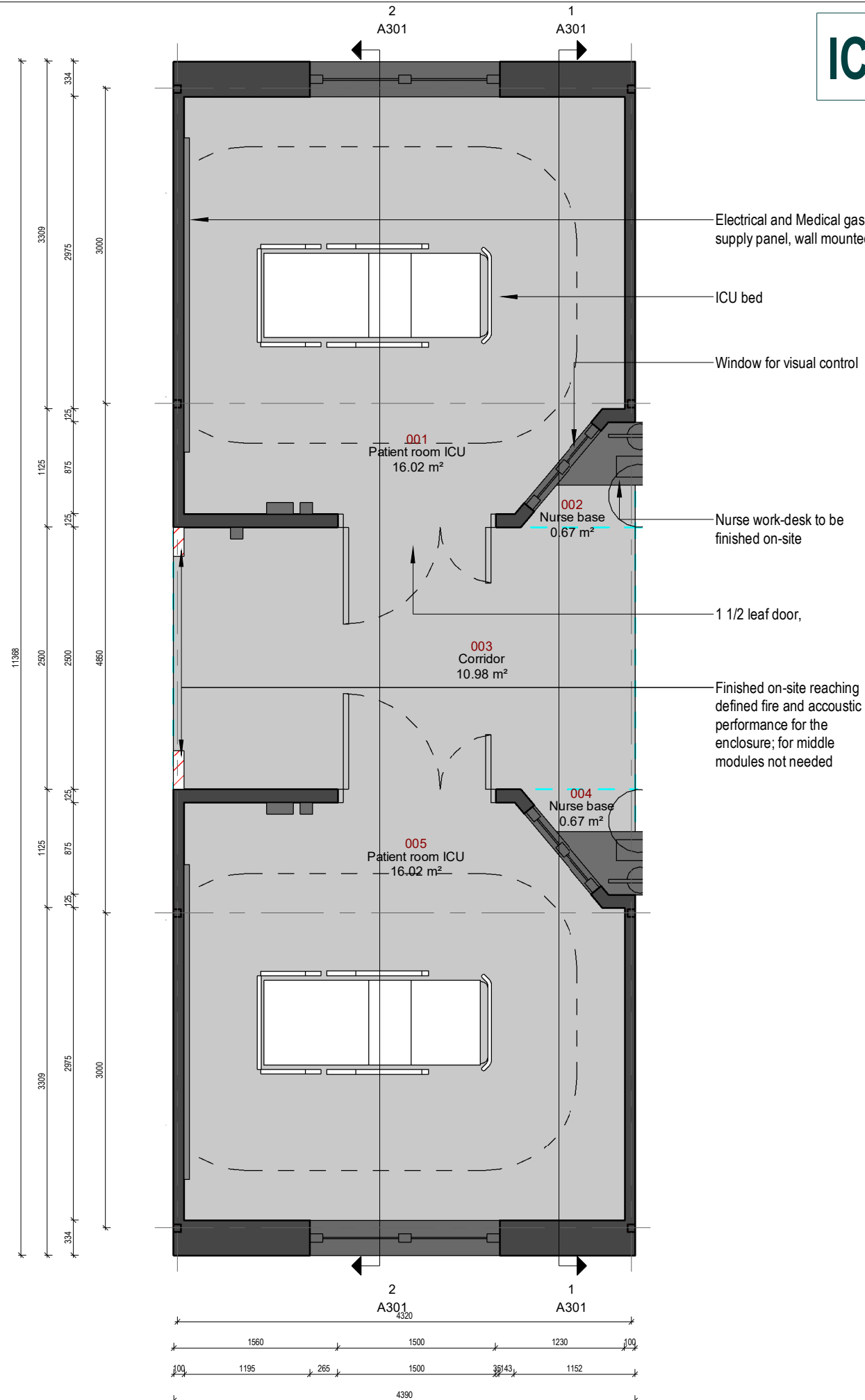
FIRE: EI 60

Gross Modular Area (GMA)
closed type ICU

Name	Number	Area
ICU 01.1	01.1-001	49.91 m ²
ICU 01.1	01.1-002	49.91 m ²
ICU 01.1	01.1-003	49.91 m ²
ICU 01.1	01.1-004	49.91 m ²
ICU 01.2	01.2-001	49.91 m ²
ICU 01.2	01.2-002	49.91 m ²
ICU 01.2	01.2-003	49.91 m ²
ICU 01.2	01.2-004	49.91 m ²
ICU 02.1	02.1-001	60.22 m ²
ICU 02.2	02.2-001	63.43 m ²
ICU 03.1	03.1-001	52.57 m ²
11		575.46 m ²

Net Internal Area (NIA) in ICU-01.1

Number	Name	Area	Perimeter
001	Patient room ICU	16.02 m ²	15.80 m
002	Nurse base	0.67 m ²	3.48 m
003	Corridor	10.98 m ²	13.78 m
004	Nurse base	0.67 m ²	3.48 m
005	Patient room ICU	16.02 m ²	15.80 m
		44.37 m ²	



WIDTH* :4400 mm
HEIGHT* :4106 mm
LENGTH* :11368 mm
WEIGHT** :17.51 t

*Structural elements are not taken into account
**Indicative and for information only.

PROJECT NAME:	PROJECT N°:
Respiratory ICU	20EU-M003
SHEET NAME:	REVISION:
ICU-01.1 / floor plan - architecture	X
DRAWING ID:	SCALE:
A101 / X	1 : 50 @A3
PROJ. MAN.	STAGE:
Ethan Chetrit	Estimation
APPROVED BY	
Kristaps Miķelsons	
ARCHITECT	
Mārcis Rancāns	
DRAWN BY	
Mārcis Rancāns	
REVIEW DATE	
26/03/2020 15:26:35	
PROJECT ISSUED	Issue Date

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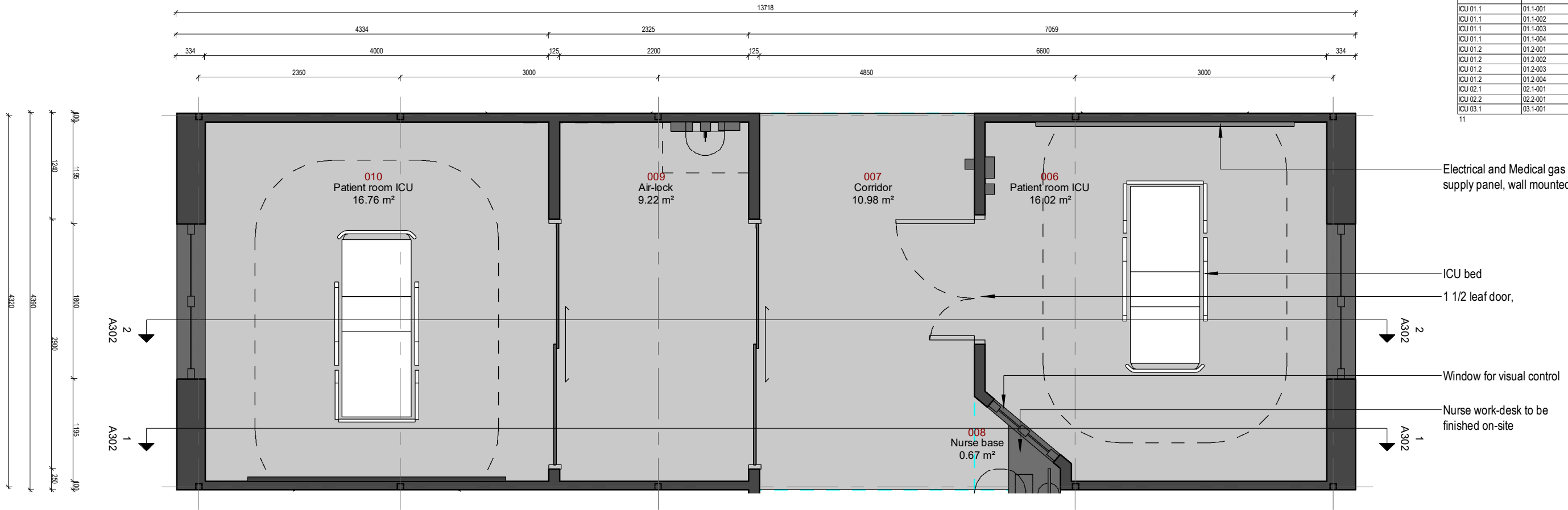
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Revision	Date	Description	Issued by
X	2020.03.23	first draft	M. Rancāns

Gross Modular Area (GMA)
closed type ICU

Name	Number	Area
ICU 01.1	01.1-001	49.91 m²
ICU 01.1	01.1-002	49.91 m²
ICU 01.1	01.1-003	49.91 m²
ICU 01.1	01.1-004	49.91 m²
ICU 01.2	01.2-001	49.91 m²
ICU 01.2	01.2-002	49.91 m²
ICU 01.2	01.2-003	49.91 m²
ICU 01.2	01.2-004	49.91 m²
ICU 02.1	02.1-001	60.22 m²
ICU 02.2	02.2-001	63.43 m²
ICU 03.1	03.1-001	52.57 m²
11		575.46 m²



Electrical and Medical gas supply panel:

- O₂ 3x - ventilator, flowmeter pipeline, anesthetic machine
Air 2x - ventilator
Suction 2x - suction apparatus, endoscopy
GPO 24x - bed, ventilator, multi parameter monitor, 4-9x infusion pump, 4x syringe pump, computer, examination lamp, blood warmer, ecg, eeg, us/cardiac-echo, endoscopy, anaesthetic machine, haemofiltration/ haemodialysis, +redundant outlets
GND 16x - equipotential earth connector plugs
RCD 1x - residual current device for sockets
Data 2x - computer, CCTV

Wall supplies:

- GPO 8x - electric fan, humidifier, defibrillator, x-ray, vacuum cleaner, +redundant outlets
RCD 1x - residual current device for sockets
Data 2x - CCTV, computer
Nurse call: 1x - Staff/staff call, cardiac arrest call + audio-visual signal elements

Nurse work-desk:

- GPO 3x - computer, telephone, +redundant outlet
Data 2x - computer, telephone

Surface cleaning:

- All surface materials be compatible with hard cleaning with disinfectants containing:
- Hydrogen Peroxide
 - Sodium Hypochlorite
 - Isopropanol
 - Formaldehyde
 - Glutaraldehyde
 - Peracetic acid

Room Material and outline specifications:

- Floor Vinyl/ Linoleum flooring, slip resistant, 150mm coving, heavy duty
Walls Paint, chemically resistant to daily wet cleaning with disinfectants
Ceiling Ceiling tiles, accoustically absorbent, sealed
Door: ICU 1 1/2 hinged door, clear opening 920+480mm, air tight
Door protection 300mmH kick plate, vinyl
Window: control 1000Wx800H mm wall opening, with integrated blinds
Window: exterior 1800Wx1600H mm wall opening, transparent from inside, translucent from outside
Worktop laminate

Other Fixtures, Equipment and associated Services:

-

Notes:

- Haemodialysis No RO water and sewage provisioned for haemodialysis
Examination light Assumed fixed on wall panel rail
Bariatric Services not provisioned for bariatric patients
Columns Column dimensions w/out fire paint thickness
Air supply:ICU Mechanical ventilation and cooling, arrestance 85% (F7 according to EN 1822:2009), min. 10 AC/hr
Air supply:isol. Mechanical ventilation and cooling, arrestance 85% (F7 according to EN 1822:2009), min. 15 AC/hr
Emergency power No special emergency power outlets are provisioned
Temperature Locally controllable
Humidity Locally controllable
Heating Low Pressure Hot Water radiators, thermostatically controllable
Lighting Diffuse, reading and examination lighting

Net Internal Area (NIA) in ICU-02.1

Number	Name	Department	Area	Perimeter
006	Patient room ICU	ICU-02.1	16.02 m²	15.80 m
007	Corridor	ICU-02.1	10.98 m²	13.78 m
008	Nurse base	ICU-02.1	0.67 m²	3.48 m
009	Air-lock	ICU-02.1	9.22 m²	12.78 m
010	Patient room ICU	ICU-02.1	16.76 m²	16.38 m
				53.65 m²

WIDTH* :4400 mm
HEIGHT* :4106 mm
LENGTH* :13718 mm
WEIGHT** :21.13 t

*Structural elements are not taken into account
**Indicative and for information only.

PROJECT NAME: Respiratory ICU		PROJECT N°: 20EU-M003
SHEET NAME: ICU-02.1 / floor plan - architecture		REVISION:
DRAWING ID: A102 /		SCALE: 1 : 50 @A3
PROJ. MAN.	Ethan Chetrit	STAGE:
APPROVED BY	Kristaps Miķelsons	Estimation
ARCHITECT	Mārcis Rancāns	
DRAWN BY	Mārcis Rancāns	
REVIEW DATE	26/03/2020 15:26:36	
PROJECT ISSUED	Issue Date	

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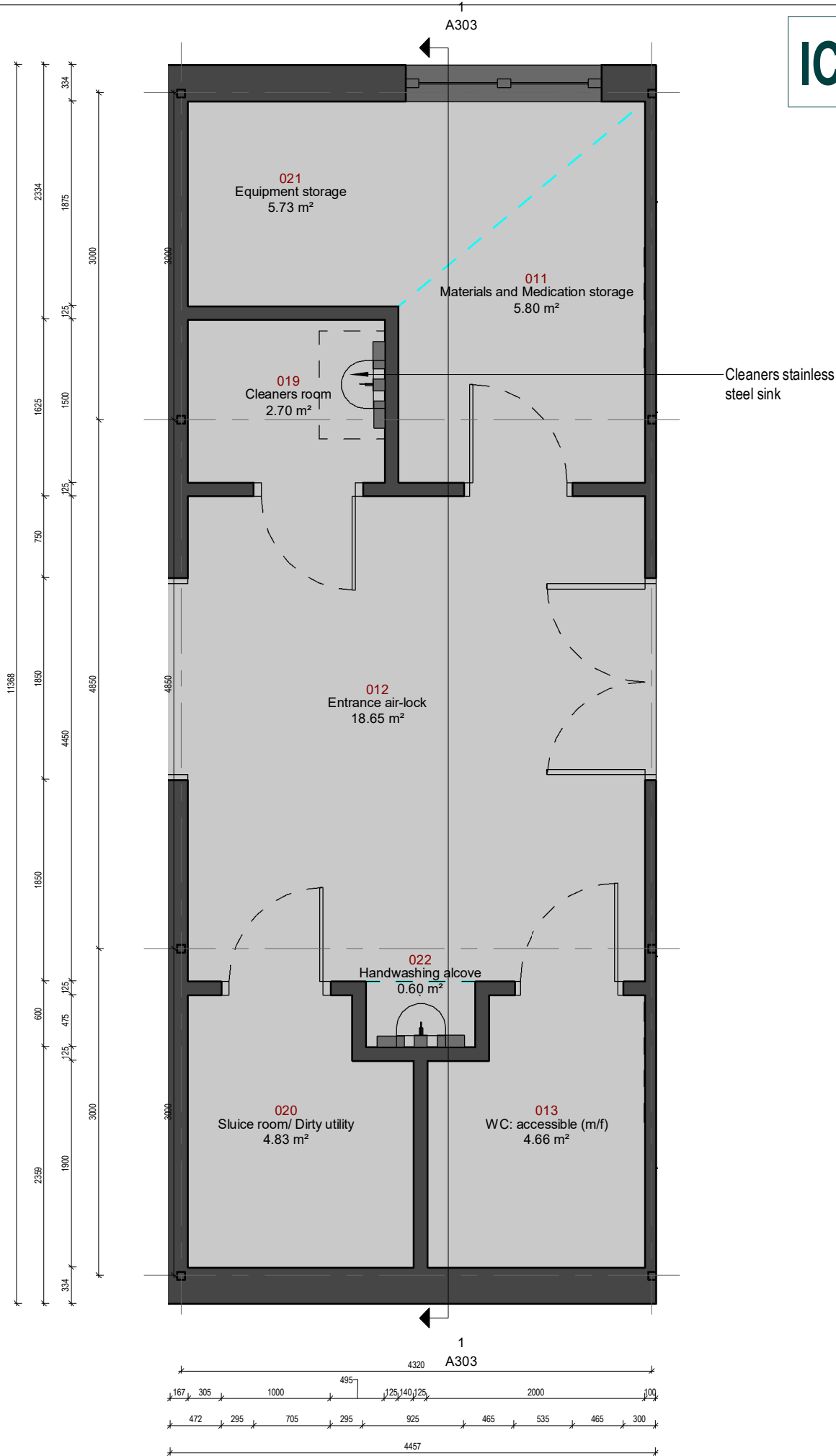
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Revision	Date	Description	Issued by



ICU-03.1

FIRE: EI 60

Gross Modular Area (GMA) closed type ICU		
Name	Number	Area
ICU 01.1	01.1-001	49.91 m²
ICU 01.1	01.1-002	49.91 m²
ICU 01.1	01.1-003	49.91 m²
ICU 01.1	01.1-004	49.91 m²
ICU 01.2	01.2-001	49.91 m²
ICU 01.2	01.2-002	49.91 m²
ICU 01.2	01.2-003	49.91 m²
ICU 01.2	01.2-004	49.91 m²
ICU 02.1	02.1-001	60.22 m²
ICU 02.2	02.2-001	63.43 m²
ICU 03.1	03.1-001	52.57 m²
11		575.46 m²

Net Internal Area (NIA) in ICU-03.1

Number	Name	Area	Perimeter
011	Materials and Medication storage	5.80 m²	10.33 m
012	Entrance air-lock	18.65 m²	17.28 m
013	WC accessible (m/f)	4.66 m²	9.00 m
019	Cleaners room	2.70 m²	6.60 m
020	Sluce room/ Dirty utility	4.83 m²	9.13 m
021	Equipment storage	5.73 m²	10.93 m
022	Handwashing alcove	0.60 m²	3.20 m
		42.97 m²	

WIDTH* :4462 mm
HEIGHT* :4106 mm
LENGTH* :11368 mm
WEIGHT** :17.75 t

*Structural elements are not taken into account
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PROJECT NAME: Respiratory ICU		PROJECT N°: 20EU-M003
SHEET NAME: ICU-03.1 / floor plan - architecture		REVISION:
DRAWING ID: A103 /		SCALE: 1 : 50 @A3
PROJ. MAN.	Kristaps Miķelsons	STAGE:
APPROVED BY	Kristaps Miķelsons	Estimation
ARCHITECT	Mārcis Rancāns	
DRAWN BY	Mārcis Rancāns	
REVIEW DATE	26/03/2020 15:26:36	
PROJECT ISSUED	Issue Date	

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OPTIONAL MEDICAL EQUIPMENT ::

20 pcs.	ICU bed
60 pcs.	O ₂ flowmeter
20 pcs.	Wall bedhead panel / Ceiling pendant
20 pcs.	Ventilator, adult/neonatal
40 pcs.	Suction regulator
5 pcs.	Defibrillator, portable
120 pcs.	Infusion pump
20 pcs.	Multiparameter monitor (ECG, temperature, BP, O ₂ /CO ₂ , CVP, etc.)
80 pcs.	Syringe pump
20 pcs.	Examination lamp
20 pcs.	EEG
1 pcs.	Diagnostic ultrasound system
1 pcs.	Endoscopy/Bronchoscopy system
2 pcs.	Anaesthetic machine
4 pcs.	Hemofiltration machine
10 pcs.	Nurse information centre system
20 pcs.	Video laryngoscope

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