ZONAIR3D™
PURE AIR, JUST BREATHE

Creating a new sky

ZONAIR3D HOSPITALS PRESENTATION

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OUTDOOR POLLUTION

In the world

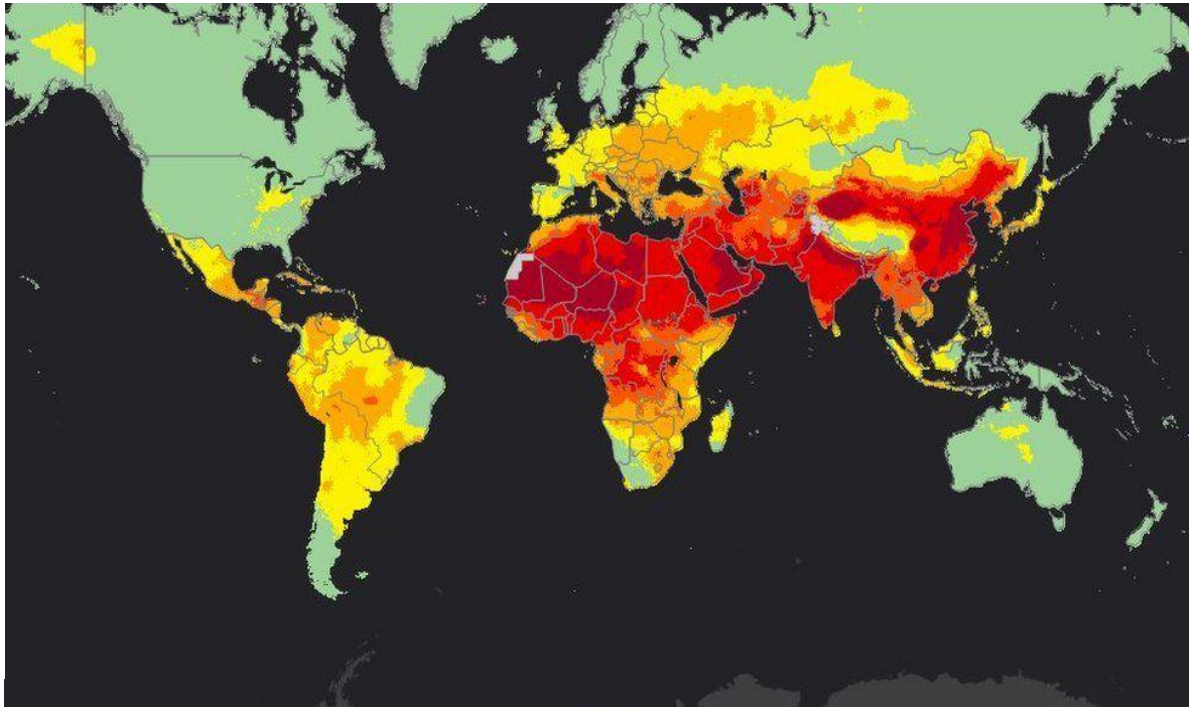
Annual mean ambient PM2.5 (µg/m3)

Circles: monitoring station / background: modeled estimates

- < 10
- 11 - 15
- 16 - 25
- 26 - 35
- 36 - 69
- 70 or more

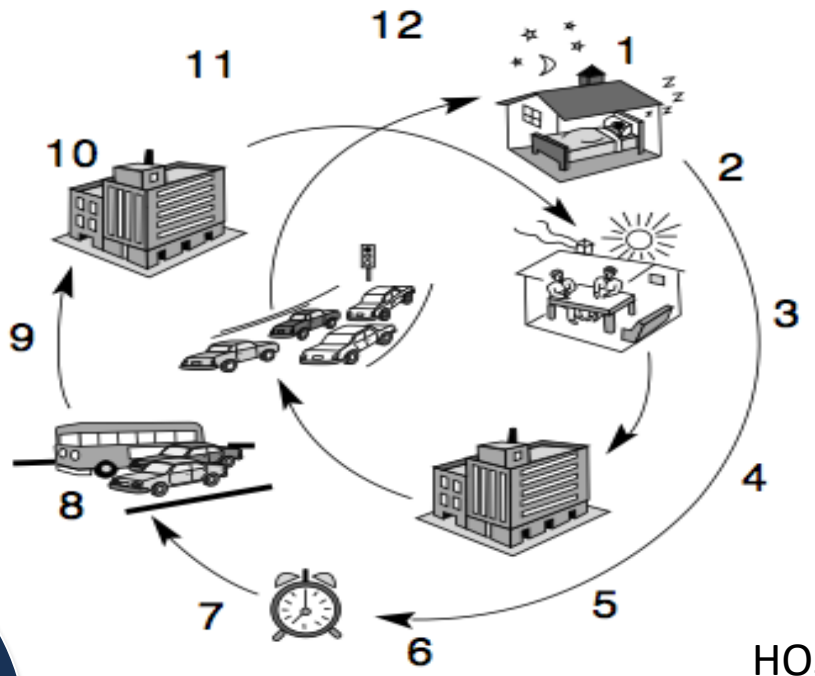
Population

- > 25.000.000
- 20.000.000
- 15.000.000
- 10.000.000



http://maps.who.int/airpollution/

"WE SPEND OUR TIME INDOORS"

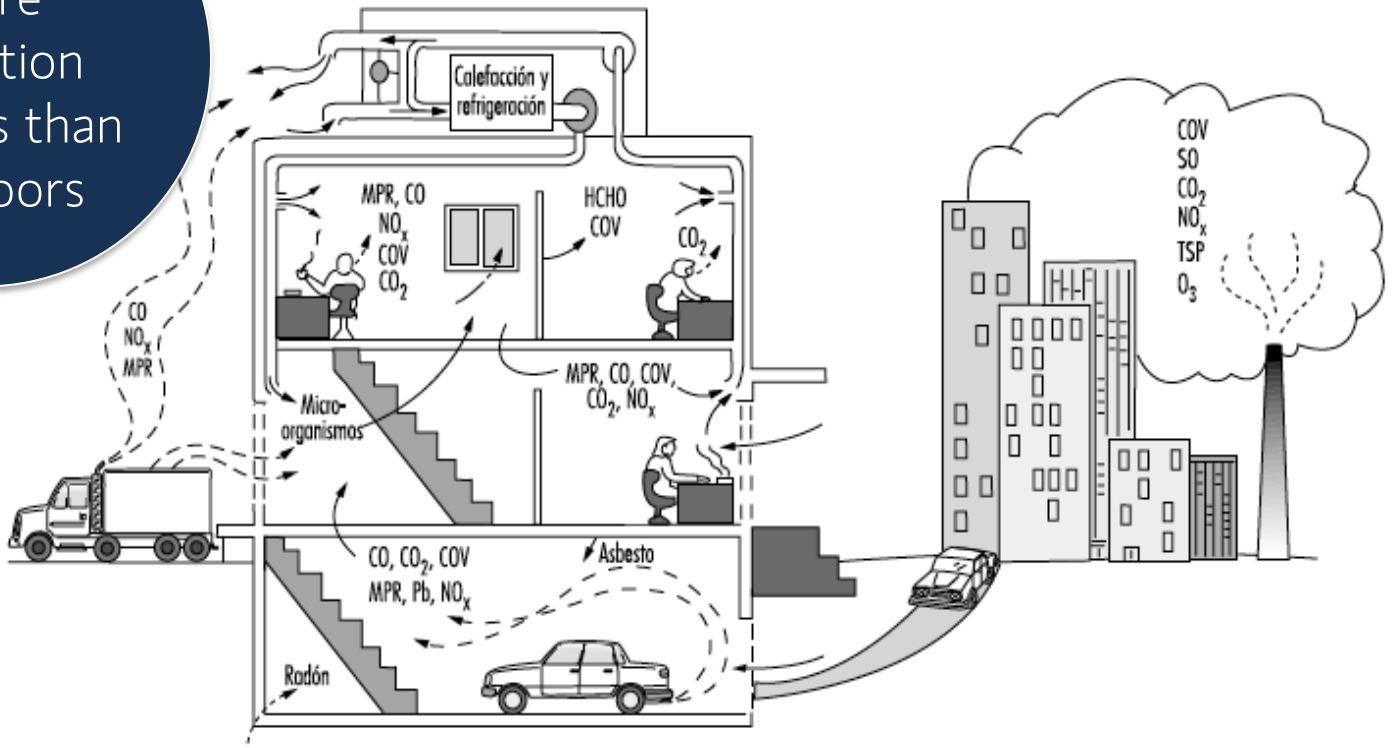


WE SPEND 80 - 90% OF OUR TIME INDOORS

HOSPITAL RUTINE:
Patients 100%
Familiars 90%
Workers 80%

Indoor pollution in HOSPITAL

2-5 times more pollution indoors than outdoors



CO= monóxido de carbono; CO2= dioxido de carbono; HCHO= formaldehído; NOx= óxidos de nitrógeno; Pb = plomo; MPR= materia particulada respirable; COV= componentes orgánicos volátiles

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WE BELIEVE IN THE IAQ

Indoor pollution in HOSPITAL

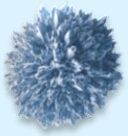
CONSEQUENCES OF INDOOR POLLUTION

- Living in **URBAN AREAS WITH HIGH AIR POLLUTION LEVELS** entails:

  - ✓PREMATURE DEATHS (20% MORE THAN IN CLEANER CITIES)
  - ✓BILLIONS OF COSTS FOR PUBLIC HEALTH
  - ✓BILLIONS OF LOSSES IN PRODUCTIVITY
  - ✓PROBLEMS IN CHILD DEVELOPMENT

WE FIGHT AGAINST...

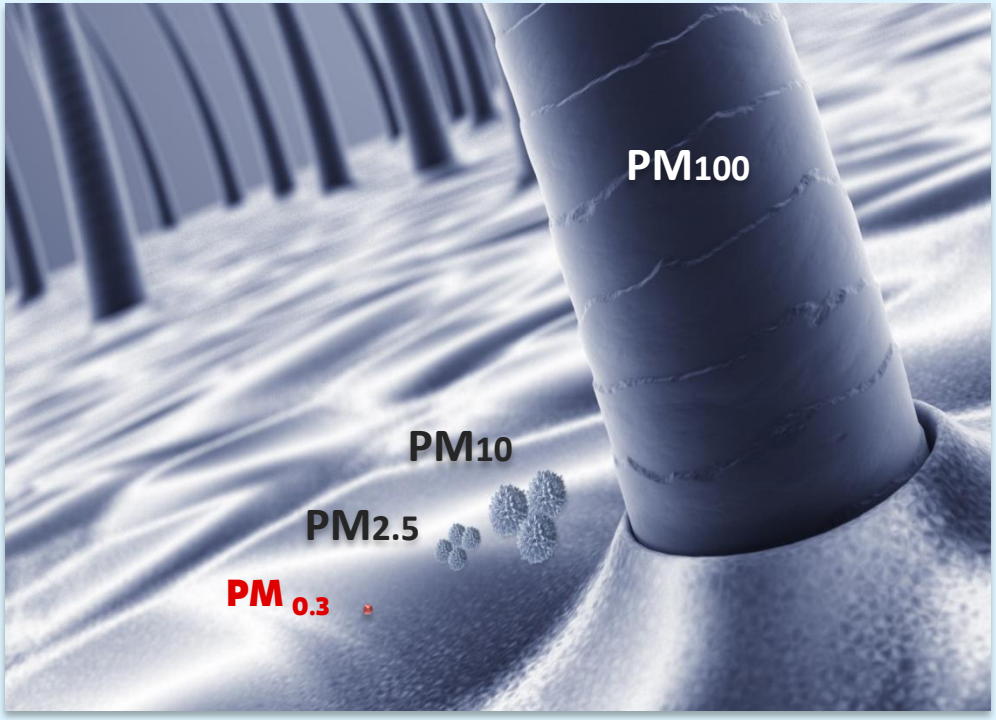
PARTICULATE MATTER (PM)



PM_{10}

$PM_{2,5}$

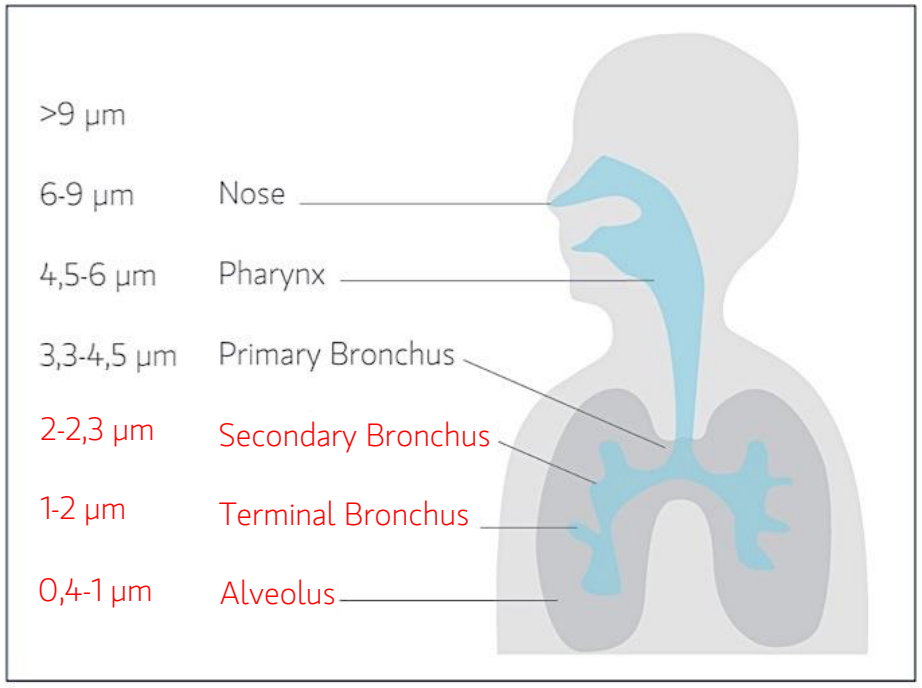
PM 0.3



COMING FROM:

- ❑ Automobiles
- ❑ Industries
- ❑ Heating systems
- ❑ Fossile fuel burning
- ❑ Natural sources
- ❑ Friction
- ❑ Living beings

PM INHALATION



Particle penetration in the respiratory tract depending on its size

TYPES:

- Particulates
- Dust
- Fibres
- Fumes
- Bacteria
- Pollen
- Mite
- Virus

OZONE (O_3)

Tropospheric O_3 is one of the main components of smog.

CHEMICAL REACTION

O_3 = Solar light+ NO_x+ COV's

HEALTH EFFECTS OF **OZONE (O_3)**

A) DISORDERS:

- Cardiovascular
- Respiratory (Asthma)

B) Currently it is one of the pollutants of MOST CONCERN IN EUROPE.

C) Daily MORTALITY from HEART DISEASES INCREASE by 0.3% - 0.4% with an increase of 10 mg/m^3 in the ozone concentration. [WHO 2005]

NITROGEN DIOXIDE(NO_2)

TOXIC GAS in short-term concentrations exceeding 200 mg/m^3 length.

SOURCES of anthropogenic EMISSIONS: COMBUSTION PROCESSESS (heating, electricity generation and motors of vehicles)

HEALTH EFFECTS OF **NITROGEN DIOXIDE (NO_2)**

A) DISORDERS:

- Respiratory (Asthma, Bronchitis)

B) DECREASED LUNG FUNTION development is also associated with NO_2 concentrations recorded or observed in North American and European cities. [WHO 2005]

SULPHUR DIOXIDE (SO_2)

COLORLESS GAS with a PUNGENT ODOR

ANTHROPOGENIC SOURCES of emission: COMBUSTION PROCESSES (domestic heating, electricity generation and motor vehicles)

HEALTH EFFECTS OF SULPHUR DIOXIDE (SO_2)

A) DISORDERS
- Respiratory (Asthma and chronic bronchitis)
- Eye irritation

B) HOSPITAL ADMISSIONS FOR HEART DISEASE and MORTALITY increase on days when SO_2 levels are higher.

C) In combination with water, SO_2 is converted into sulfuric acid, which is the main component of ACID RAIN, causing deforestation. [WHO 2005]; And one of the main causes of corrosion in DATA CENTER.

VOLATILE ORGANIC COMPOUNDS (VOC'S)

They comprise a wide range of substances among which HYDROCARBONS (alkanes, alkenes and aromatic compounds), HALOCARBONS (for example, trichloroethylene) and OXYGENATES (alcohols, aldehydes and ketones).

All of them are organic componets, which are VOLATILE ENOUGH to EXIST in the form of ATMOSPHERIC VAPOURS in normal conditions.

HEALTH EFFECTS OF **VOLATILE ORGANIC COMPOUNDS**

Eye, nose and throat irritation
Headaches, loss of coordination and nausea
Damage to liver, kidney and central nervous system
Some can cause cancer

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INDOOR Toxic gases. COMMON BUILDING MATERIALS IN HOSPITALS

TYPE OF MATERIAL		CHEMICAL COMPONENTS EMITTED AND NEUTRALIZED BY GRSYSTEM™
FAMILIES	ELEMENTS	
Pressed Wood	Chipboard	Formaldehyde, α-pinene, Xylenes, Hexanal, Acetone
	Veneers	
	MDF	
	Timbers	
Wood trim	Paints and catalysed treatments by acid	Formaldehyde, Acetone, Toluene
	Wood dyes	Decane
	Polyurethane Paint	Decane, Ethylbenzene
	Latex Paint	Ethylbenzene, Toluene
	Furniture varnish	Ethylbenzene, Limonene
Textile materials	Upholstery and curtains	Ethylbenzene, Chloroform, Tetrachloroethylene, Trichloroethylene
Construction materials for walls and ceilings	Plasterboards	Xylenes, Decane, Formaldehyde
	Mastic sealants	Formaldehyde, Toluene, Ethylbenzene, Xylenes, 1,2,4-trimethylbenzene

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INDOOR Toxic gases. COMMON BUILDING MATERIALS IN HOSPITALS

TYPE OF MATERIAL		CHEMICAL COMPONENTS EMITTED AND NEUTRALIZED BY GRSYSTEM™
FAMILIES	**ELEMENTS**	
Construction materials for walls and ceilings	Ceiling panels	Formaldehyde
	Latex insulators	2-butoxyethanol, Benzene, Toluene
	Other types of insulators	Formaldehyde, Toluene, Ethylbenzene, Xylenes, 1,2,4-trimethylbenzene
Wall coverings	Wood paneling	Formaldehyde, Acetone, Hexanal
	Plastic wall coating	Formaldehyde
Wallpapers	Pigments and paints	Toluene
	Painted wallpapers	Acetone, Toluene, Xylenes
Wall painting	Latex and water based paintings	Benzene, Toluene, Xylenes
Floor coverings	Carpets	Formaldehyde, Toluene, Benzene, Decane
	Tile sealants	Toluene, Benzene, Ethylbenzene
	Carpets sealants	Xylenes, Ethylbenzene, Toluene, 1,2,4-trimethylbenzene
	Vinyl tiles	Formaldehyde, Toluene
	Linoleum flooring	Toluene, Hexanal
	Varnished wood floors	Ethylbenzene, Xylenes, Formaldehyde

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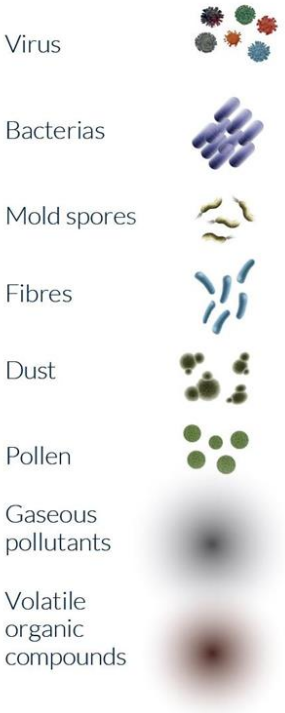
WE FIGHT AGAINST…

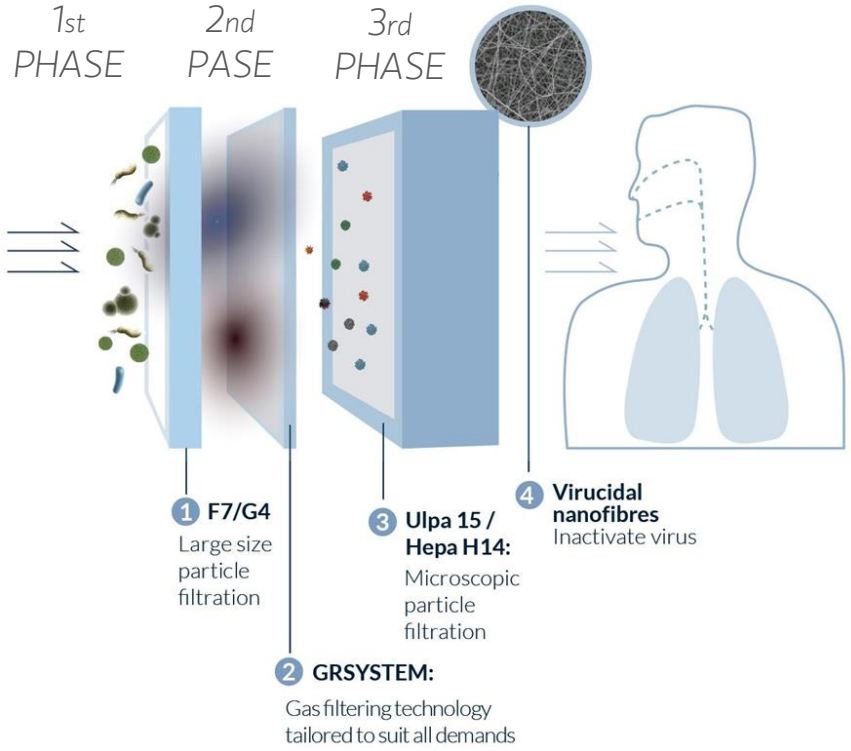
INDOOR Toxic gases. COMMON CLEANING PRODUCTS IN HOSPITALS

TYPE OF MATERIAL		CHEMICAL COMPONENTS EMITTED AND NEUTRALIZED BY GRSYSTEM™
FAMILIES	ELEMENTS	
Cleaning products	Soaps and detergents	Alcohol, Formaldehyde
	Multipurpose cleaners	Ammonia
	Disinfectants	Ammonia, Formaldehyde
	Window cleaner	Ammonia
	Stain removers and textile cleaners	Tetrachloroethylene, Trichloroethylene, Benzene
	Solvents for greases	Toluene, Xylenes
	Furniture polishes	Ammonia
Air fresheners and deodorizers	Solids	p-dichlorobenzene
	With lemon perfume	Limonene
	With pine-tree perfume	α-pinene

OUR TECHNOLOGY

THREE FILTERING PHASES





HIGH EFFICIENCY PARTICULATE FILTRATION

GASES

ABSOLUTE PARTICULATE FILTRATION

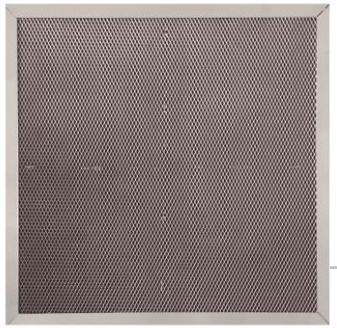
1st PHASE: HIGH EFFICIENCY PARTICULATE FILTRATION

F7, European Standard EN-779

Filter application		Particulate air filters for general ventilation					
Test		EN 779:2012 evaluation of filter performance at 0.944m³/s (or nominal air flow)					
Suitable for	Group designation	Filter classes	Test dust	Test aerosol	Average arrestance (Am) compared with test dust in %	Average efficiency (Em) for particles 0.4µm in %	Minimum efficiency (Em) for particles 0.4µm in %
Fine dust	F	F7	ASHRAE dust	DEHS (Di-Ethyl-Hexyl-Sebacate) 0.2 - 0.3µm	-	80≤Em<90	35

2nd PHASE: GAS FILTRATION

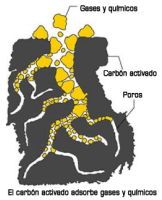
GRSystem™ by Zonair3d™ :
CLEAN AIR, HEALTHCARE, ORGANIC, LAB, SMOKE, SMOKE P3, POOL, SURGERY.



→ GRSystem™ thin bed

→ GRSystem™ deep bed

→ Diferent types of activated carbon



→ For gas adsorption or absorption

2nd PHASE: GAS FILTRATION

	GRS1 CLEAN AIR	GRS2 HEALTHCARE	GRS3 ORGANIC	GRS4 LAB	GRS5 SMOKE	GRS5 SMOKE P3	GRS 6 POOL	GRS 7 SURGERY
VOC'S: *MW high-medium*	85%	80%	85%			80%	80%	85%
VOC'S : *MW low*				85%	85%			
O_3	100%	100%	100%		100%	100%	90%	100%
SO_X		80%			85%	85%		
NO_X		80%		60%	85%	85%		
H_2S		80%			85%	85%		
NH_3			90%					
HCHO		60%		70%	80%	90%		
CL2							90%	
$CHCl_3$							60%	
C_2H_4				90%				
Amines			90%	70%		60%		
Aldehydes				70%		70%		
Alcohols				66%		70%		
Anesthesia Vapors								85%
APPLICATIONS	General buildings	Schools, Nurseries, Car parks, medical centers, hospitals	Fish industry, hairdressers, public lavatories	Hospital sector: labora-tories	Exhaust gases and tobacco smoke	Special China: smog and indoor	Spas, pools, wellnes	Surgery Cabin

Efficiency in the first pass

3rd PHASE: ABSOLUTE PARTICULATE FILTRATION

HEPA H14 / ULPA U15 , European Standard EN-1822

Filter application		HEPA High Efficiency Particulate Air filter				
Test		EN 1822:2009 evaluation of filter performance at nominal air flow				
Suitable for	Group designation	Filter classes	Test dust	Test aerosol	Integral value of efficiency in the MPPS in %	Integral value of penetration in the MPPS in %
Suspended dust	H	H14	-	DEHS (Di-Ethyl-Hexyl-Sebacate) MPPS 0.1 - 0.3µm	≥99.95	≤0.05
	U	U15	-		≥99.995	≤0.005

ZONAIR3D™ HOSPITAL SOLUTIONS

ONE SOLUTION FOR EACH PROBLEM

- PARTICULATE MATTER
- ALLERGENS
- MOLD SPORES
- BACTERIA
- MOLD
- GASEOUS POLLUTANTS
- DUST MITES
- VO'S

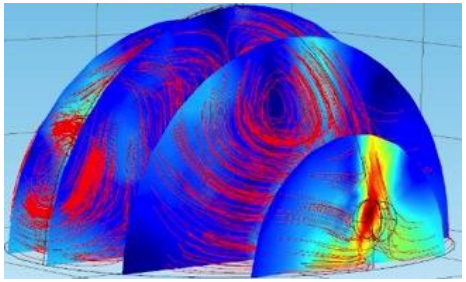
PROBLEM → SOLUTION → OK

ErP Eco-design 2009/125/EC (EC) No. 1275/2008

ISO 9001 ISO 14001 CE

BUBBLE PURE AIR by ZONAIR3D™

- ✓ FIELD OPERATING THEATRE
- ✓ ISO 5 CLEAN ROOM CATEGORY



No stratifications Analysis by fluid dynamics software (CFD)

BUBBLE PURE AIR by ZONAIR3D™

Technical characteristics

Utililty	Meeting and waiting rooms, offices, domestic areas and restaurants enclosed spaces
Difusser	Rotational and aluminium structure
Material	Sandwich steel sheet panels for acoustic insulation
Motor	EC
Filtering phases	Prefilter F7 / Gas filter GRSYSTEM / Absolute filter HEPA H14
Size / Weight	593x 725x 553 mm / 50 kg
Maximum Flow	600 m^3/h
Consumption	170 W
Max. Sound Pressure	51.5 dB(A)
Power requirements	230V / 50-60Hz

Particle filter	EN779 Average efficiency Em) for particles 0.4µm in %	EN1822 Integral value of efficiency in the MPPS in % (0,08-0,15µm)	ISO 16890 ePM2,5 (Efficiency against particulate matter 0,3 ≤ x ≤ 2,5)
F7	80% ≤ x ≤ 90%	-	≥ 65%
H14	-	> 99,995%	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

No particulate pollutants (PM)

- 99.995% particle free > 0,2 micron
- Adhered chemical compounds (PAHs, polycyclic aromatic hydrocarbons)
- ISO 5 CLEAN ROOM / 10 min. max. recovery

Reduction of gas pollutants to comfort levels

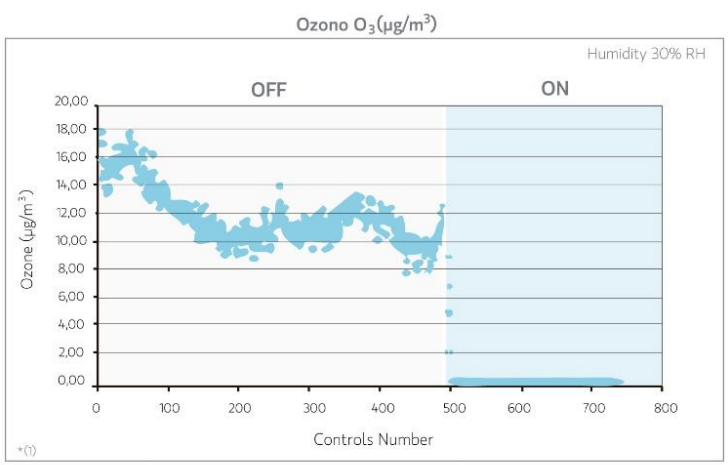
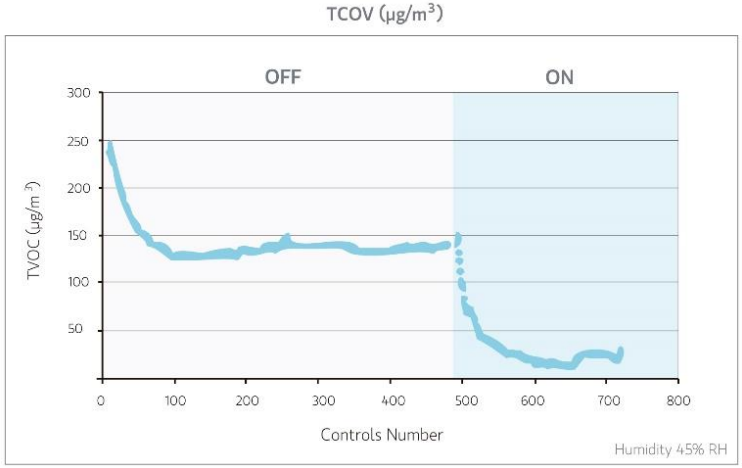


FIGURE 5: ELIMINATION OF O_3 USING PURE AIR CONTROL TECHNOLOGY



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ZONAIR3D™ HOSPITAL SOLUTIONS

BUBBLE PURE AIR by ZONAIR3D™

*Images owned by Bubble Space, S.L.

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WE BRING PURE AIR TO ALL SPACES

From Bubble | Pure Air → To Pure Air Spaces

Patio Foster building, Santiago de Chile.

AIR + 300/430 “S”

Technical characteristics

Utililty	Rooms, domestic areas, enclosed spaces	
Control screen	Welome technology, ON-OFF, speed control, filter state and timer	
Casing material	Warm touch thermoformed casing and glass top panel	
Motor	EC	
Filtering phases	Prefilter G4 / Gas filter GRSYSTEM / Absolute filter ULPA U15	
Size	380 x 382 x 791 mm	
Weight	30 Kg	
Maximum Flow	AIR+ 300 S: 332m³/h	AIR+ 430 S: 430m³/h
Consumption / Max. Sound Pressure	AIR+ 300 S: 87W / 46 dB(A)	AIR+ 430 S: 165W / 51.6 dB(A)
Requirements	230V / 50-60Hz	

Particle filter	EN779 Average arrestance (Am) compared with test dust in %	EN1822 MPPS (0,08-0,15µm)	ISO 16890 Coarse
G4	<90%	-	60%
U15	-	> 99,999%	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

AIR + 600

Technical characteristics

Utililty	Meeting and waiting rooms, offices, domestic areas and restaurants enclosed spaces
Difusser	Rotational and aluminium structure
Material	Sandwich steel sheet panels for acoustic insulation
Motor	EC
Filtering phases	Prefilter F7 / Gas filter GRSYSTEM / Absolute filter HEPA H14
Size / Weight	593x 725x 553 mm / 50 kg
Maximum Flow	600 m^3/h
Consumption	170 W
Max. Sound Pressure	51.5 dB(A)
Power requirements	230V / 50-60Hz

Particle filter	EN779 Average efficiency Em) for particles 0.4µm in %	EN1822 Integral value of efficiency in the MPPS in % (0,08-0,15µm)	ISO 16890 ePM2,5 (Efficiency against particulate matter 0,3 ≤ x ≤ 2,5)
F7	80% ≤ x ≤ 90%	-	≥ 65%
H14	-	> 99,995%	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

AIR + 50

Technical characteristics

Utililty	Offices, domestic areas, meeting and waiting rooms, enclosed spaces
Maximum Flow	75 m^3/h
Max. Sound Pressure	38,4 dB(A)
Size	209 x 393 x 468 mm
Consumption	25 W
Power requirements	230V - 50/60Hz
Weight	11 Kg
Filtering Phases	Prefilter G4 / Gas filter GRSYSTEM / Absolute filter H14

Particle filter	EN779 Average arrestance (Am) compared with test dust in %	EN1822 MPPS (0,08-0,15µm)	ISO 16890 Coarse
G4	<90%	-	60%
H14	-	> 99,995%	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

AIR PRO 100/300

Technical characteristics

	Air Pro 100		Air Pro 300	
Flow (m^3/h)	195 / 130	175 / 115	300 / 160	260 / 140
Available Pressure (Pa)	50	100	50	100
Sound pressure [dB(A)]	42,7 / 43	42,9 / 44,2	45,7 / 54,8	46,3 / 51
Weight (Kg)	45,5		46	
Device Measures H X W X L (mm)	207 x 639 x 929		207 x 639 x 929	
Consumption (Kw)	0,027		0,055	
Voltage and Frequency	230V - 50/60Hz		230V - 50/60Hz	

Particle filter	EN779 Average arrestance (Am) compared with test dust in %	EN1822 MPPS (0,08-0,15µm)	ISO 16890 Coarse
G4	<90%	-	60%
H14	-	> 99,995%	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

AIR PRO 500/800

Technical characteristics

	Air Pro 500	Air Pro 800	Air Pro 1200
Flow (m^3/h)	500	800	1200
Device Measures H X W X L (mm)	310 x 972 x 1104	310 x 972 x 1104	353 x 972 x 1104
Weight (Kg)	84	85	92
Consumption (Kw)	0,164	0,328	0,518
Voltage and Frequency	230V - 50/60Hz	230V - 50/60Hz	230V - 50/60Hz
Filtration Stages	G4 - GRS - H14	G4 - GRS - H14	G4 - GRS - H14
Available Pressure (Pa)	303	245	390
Pressure Sound 3m (dB)	44.8	51.7	58.1

Particle filter	EN779 Average arrestance (Am) compared with test dust in %	EN1822 MPPS (0,08-0,15µm)	ISO 16890 Coarse
G4	<90%	-	60%
H14	-	> 99,995%	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

AIR PRO 2000/3000

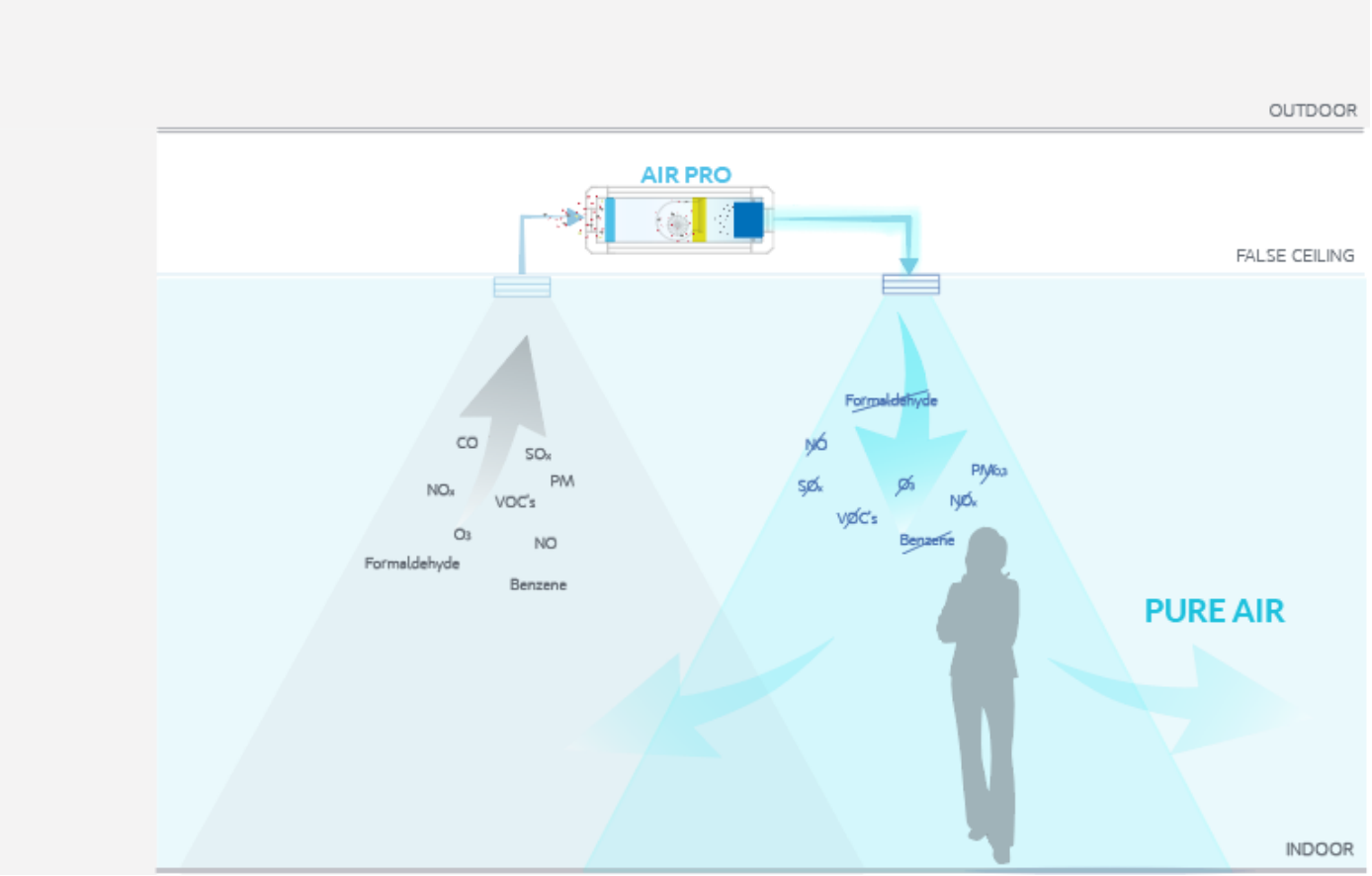
Technical characteristics

	Air Pro 2000	Air Pro 3000
Flow (m^3/h)	2000	3000
Device Measures H X W X L (mm)	414 x 1174 x 1504	414 x 1174 x 1504
Weight (Kg)	175	180
Consumption (Kw)	1,034	2.198
Voltage and Frequency	230V - 50/60Hz	230V - 50/60Hz
Filtration Stages	G4 - GRS - F7 - H14	G4 - GRS - F7 - H14
Available Pressure (Pa)	315	353
Sound Pressure 3m (dB(A))	61.7	66.4

Particle filter	EN779		EN1822	ISO 16890	
	Average arrestance (Am) compared with test dust in %	Average efficiency Em) for particles 0.4µm in %	MPPS (0,08-0,15µm)	Coarse	ePM2,5 (Efficiency against particulate matter 0,3 ≤ x ≤ 2,5)
G4	<90%	-	-	60%	-
F7	-	80% ≤ x ≤ 90%	-	-	≥ 65%
H14	-	-	> 99,995%	-	-

Gas filter	Gas reduction at the first pass				
	O_3	SO_x	NO_x	H_2S	HCHO
GRSYSTEM HEALTHCARE	100%	80%	80%	80%	60%

This system allows every space, every floor and every building to have pure air right from the moment when it is being built or when remodelling it.



By creating pure air indoors, our atmosphere gets some pure air back.

ZONAIR3D™
PURE AIR, JUST BREATHE

ZONAIR3D™ HOSPITAL VERTICAL SOLUTION

ROOMS AND DEPARTMENTS IN HOSPITALS		SOUND LEVEL	VOLUME	AREA PRESSURE	AIRFLOW CONTROL	AIR DIFFUSION MODEL	MINIMUM EXTERNAL FLOW RATE	RENEWAL FLOW RATE	ACH VENTILATION	IAQ RECIRCULATION RATE	IAQ PURIFIED FLOW RATE [m3/h]	IAQ PURIFICATION UNIT	PARTICLE PRE-FILTER	GAS FILTER	PARTICLE ABSOLUT FILTER
		[dBA]	[m3]	[Pa]	[Type]	[Type]	[m3/h]	[m3/h]	[ren/h]	[rec/hour]	[m3/h]	[unit]	[Type]	[Type]	[Type]
NURSES AREA	STANDARD INDIVIDUAL PATIENTS ROOM	30-35	36,96	-	Constant	Turbulent	138,00	138,00	3,7	1,5	206,99	PAR300	G4	GRS2	H14
	DOUBLE STANDARD PATIENTS ROOM	30-35	48,45	-	Constant	Turbulent	180,89	180,89	3,7	1,5	271,33	PAR300	G4	GRS2	H14
	CONTROL AREA IN NURSES AREA	30-35	81,00	-	Constant	Turbulent	302,40	302,40	3,7	1,5	453,60	PAC500V	G4	GRS2	H14
	CLEAN UTILITY ROOM	30-35	40,50	-	Constant	Turbulent	151,20	151,20	3,7	1,5	226,80	PAR300	G4	GRS2	H14
	DIRTY UTILITY ROOM	30-35	32,40	-	Constant	Turbulent	120,96	120,96	3,7	1,5	181,44	PAR300	G4	GRS2	H14
	ASSISTED BATHROOM	30-35	37,29	-	Constant	Turbulent	139,23	139,23	3,7	1,5	208,85	PAR300	G4	GRS2	H14
	TREATMENT ROOM	40-45	43,20	[-5]	Variable	Turbulent	208,85	648	15	1,5	433,73	PAC500V	G4	GRS2	H14
DAY HOSPITAL	CUBICLE (it depends on the n. of CUBICLES)	35-40	24,30	-	Constant	Turbulent	10 (m3/h)*m2	243	10	1,5	364,50	PAC500V	G4	GRS2	H14
NEONATOLOGY	NURSERY	35-40	189,00	-	Constant	Turbulent	705,60	1890	10	1,5	1.058,40	PAC1200V	G4	GRS1	H14
	ROOMING-IN	35-40	81,00	-	Constant	Turbulent	302,40	810	10	1,5	453,60	PAC500V	G4	GRS1	H14
EMERGENCY	EMERGENCY CUBICLE	40-45	33,75	[-5]	Constant	Turbulent	189,00	506,25	15	1,5	250,88	PAR300	G4	GRS2	H14
	CUBICLE FOR IMMEDIATE ATTENTION	40-45	67,50	[-5]	Constant	Turbulent	378,00	1012,5	15	1,5	726,75	PAC800V	G4	GRS2	H14
OUTPATIENT VISITS	GENERAL CONSULTING ROOM	35-40	40,50	-	Variable	Turbulent	151,20	-	-	1,5	226,80	PAR300	G4	GRS2	H14
	DENTAL CONSULTING ROOM	35-40	40,50	-	Variable	Turbulent	151,20	-	-	1,5	226,80	PAR300	G4	GRS2	H14

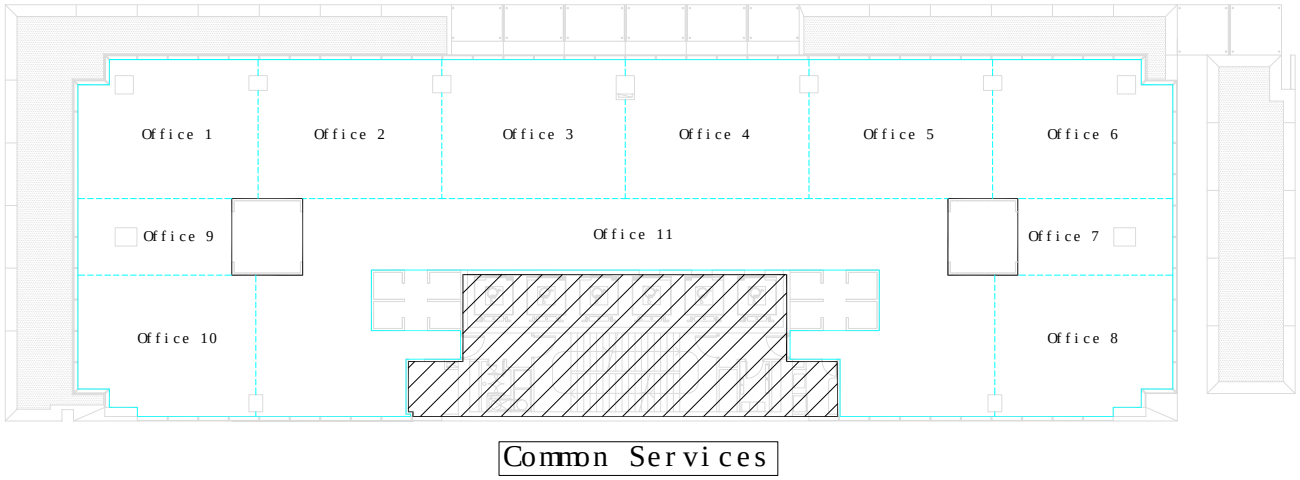
HOSPITAL BUILDING

TOTAL BUILDING area: 25.000 m2

ARCHITECTURAL DRAWINGS

A3 – e: 1/50

A3 - e: 1/150



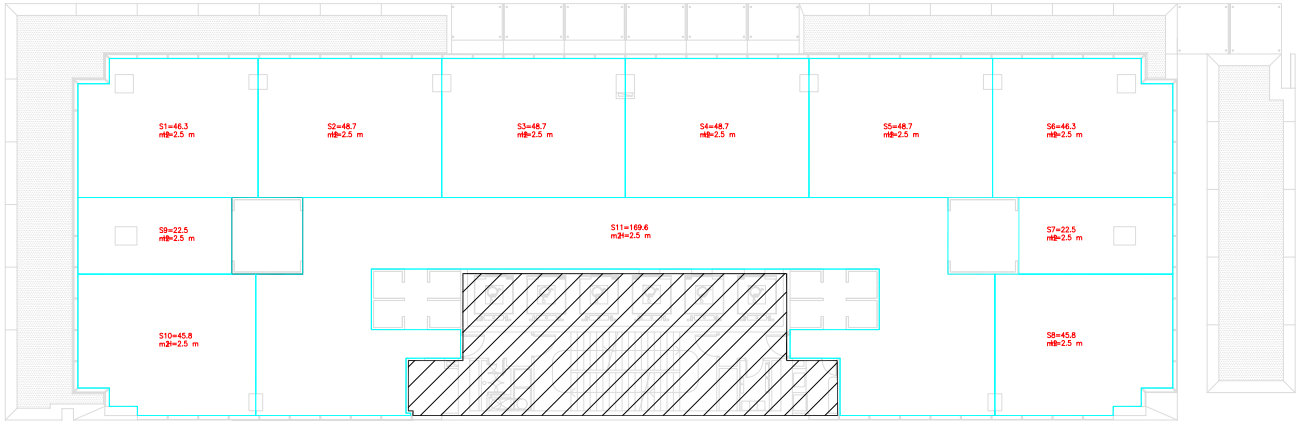
Typical Floor area: 593.6 m2

HOSPITAL BUILDING

TOTAL BUILDING area: 25.000 m2

SURFACE ANALYSIS

A3 – e: 1/50



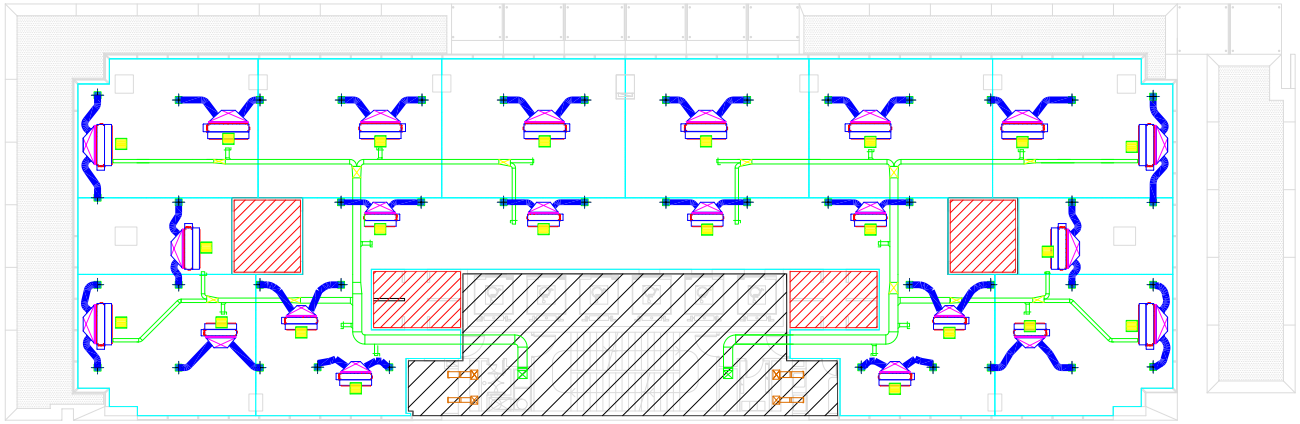
HOSPITAL BUILDING

TOTAL BUILDING area: 25.000 m2

IMPLEMENTATION ANALYSIS

A3 – e: 1/50

HVAC system and fancoil location



CALCULATING RECIRCULATION IN HYBRID SYSTEMS

- UNIT SELECTION – AIR PRO

SELECTION UNITS FLOW CALCULATION:WITH fresh air, Minimum flow = 1.5xFv			
ZONE NAME	MINIMUM PURE AIR FLOW[m3/h]	OPTIMAL PURE AIR FLOW[m3/h]	SELECTION
S1	660.75	800	1 x AIR PRO 800
S2			
S3			
S9			
S10			
S4	660.75	800	1 x AIR PRO 800
S5			
S6			
S7			
S8			
S11	449.25	1000	2 x AIR PRO 500

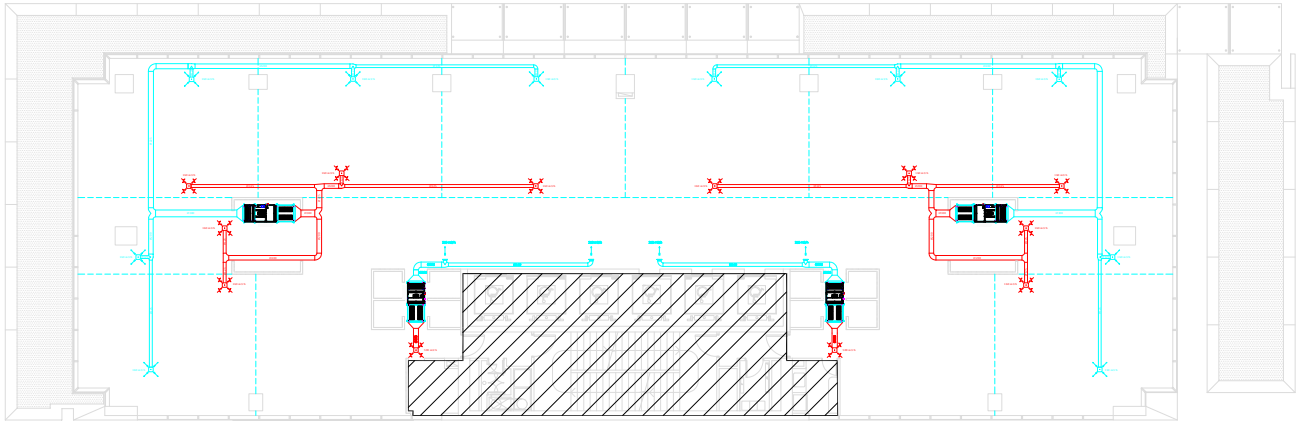
HOSPITAL BUILDING

TOTAL BUILDING area: 25.000 m2

Z3D - SOLUTION

A3 – e: 1/50

DRAWING KEY SYMBOLS	
SYMBOL	DESCRIPTION
	SUPPLY GALVANIZED SHEET METAL DUCT
	RETURN GALVANIZED SHEET METAL DUCT
ø XXX	DUCT DIAMETER [mm]
XX m3/h	AIR FLOW
	PURE AIR CONTROL UNITS [PACS001LP] & [PAC800LP]



AIR PURIFICATION

FLOW CALCULATION: WITH fresh air, Minimum flow = 1.5xFv

ZONE NAME	SURFACE[m2]	FLOW VENT[m3/h]	MINIMUM PURE AIR FLOW[m3/h]	OPTIMAL PURE AIR FLOW[m3/h]
S1	46.3	88.1	132.15	160
S2	48.7	88.1	132.15	160
S3	48.7	88.1	132.15	160
S4	48.7	88.1	132.15	160
S5	48.7	88.1	132.15	160
S6	46.3	88.1	132.15	160
S7	22.5	52.8	79.2	160
S8	45.8	88.1	132.15	160
S9	22.5	52.8	79.2	160
S10	45.8	88.1	132.15	160
S11	169.6	299.5	449.25	1000

SELECTION UNITS

FLOW CALCULATION: WITH fresh air, Minimum flow = 1.5xFv

ZONE NAME	MINIMUM PURE AIR FLOW[m3/h]	OPTIMAL PURE AIR FLOW[m3/h]	SELECTION
S1	660.75	800	1xPAC800LP
S2			
S3			
S9			
S10			
S4	660.75	800	1xPAC800LP
S5			
S6			
S7			
S8			
S11	449.25	1000	2xPACS00LP

ZONAIR3D
PURE AIR, JUST BREATHE

PROTOCOL: AIR PRO G4 + GRS2 + H14

ZONAIR3D
PURE AIR, JUST BREATHE

INCUBATORS, NEONATES ROOM

PROTOCOL:

AIR PRO G4 + **GRS1** + H14

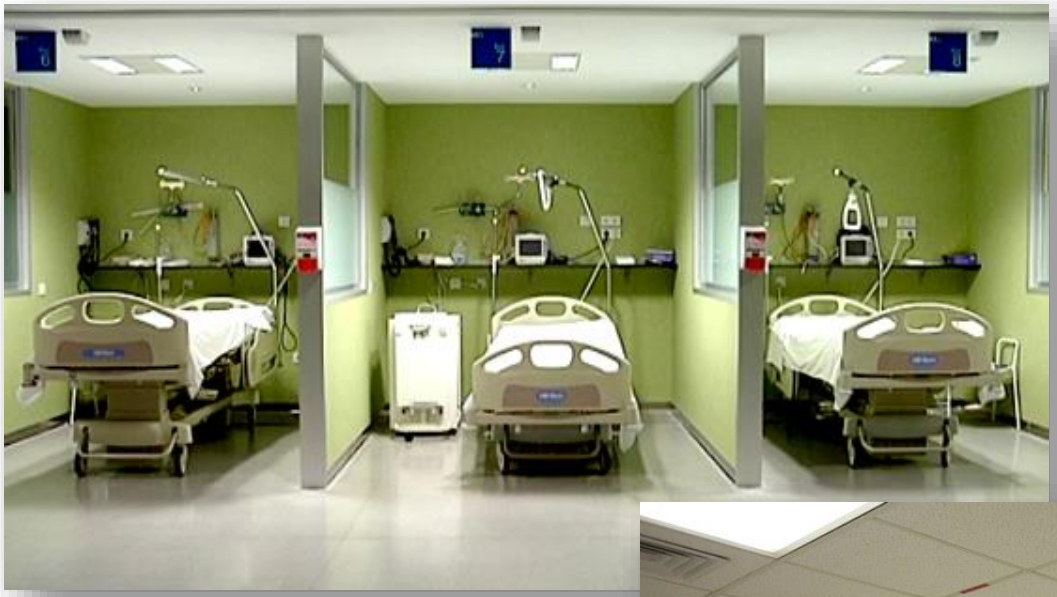
ZONAIR3D
PURE AIR, JUST BREATHE

CONTROL NURSES & DRUGS AREA

PROTOCOL:

AIR PRO G4 + **GRS2** + H14

ZONAIR3D
PURE AIR, JUST BREATHE



PROTOCOL:

AIR PRO G4 + **GRS2** + H14

ZONAIR3D
PURE AIR, JUST BREATHE

IVF & CLINICAL ANALYSIS LABORATORY

PROTOCOL:

AIR PRO G4 + **GRS4** + H14

ZONAIR3D
PURE AIR, JUST BREATHE

Creating a new sky

ZONAIR3D HOSPITALS PRESENTATION