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INTOSEE Co.,Ltd

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**A company specializing in see-through the doors**

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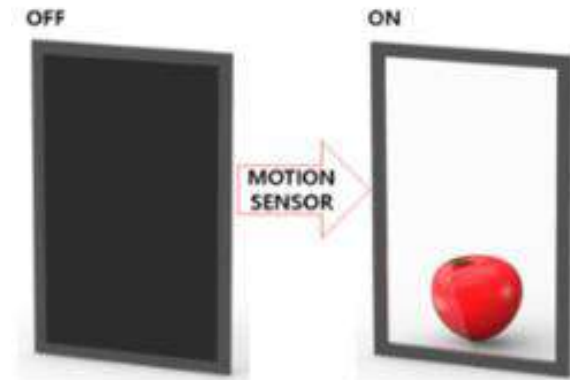
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- It is a company specializing in see-through display doors that you can see the inside without opening the door. We are mass-producing LX Hausys' "motion view" products, a domestic furniture interior company.



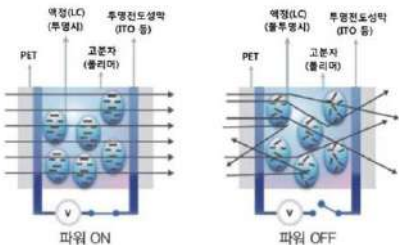
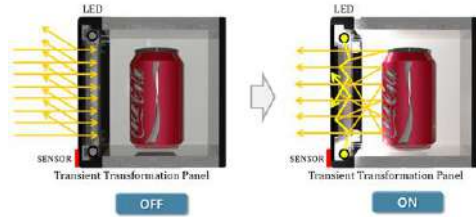


INTOSEE  
내부를 보다

In combination, INTO and SEE have a company name called INTOSEE.

<https://www.youtube.com/watch?v=TfElcQAJ3uQ>

- Non liquid crystal, Low cost and easy to install

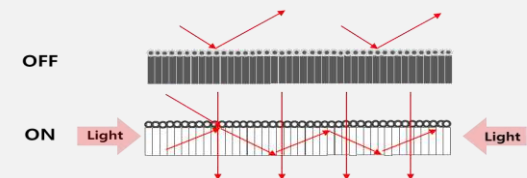
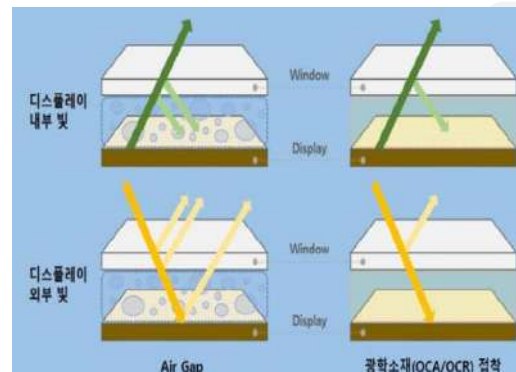
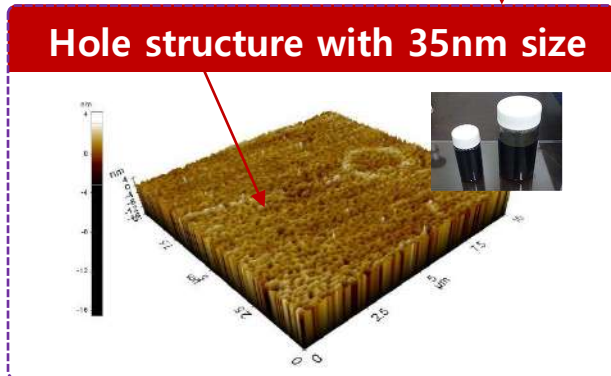
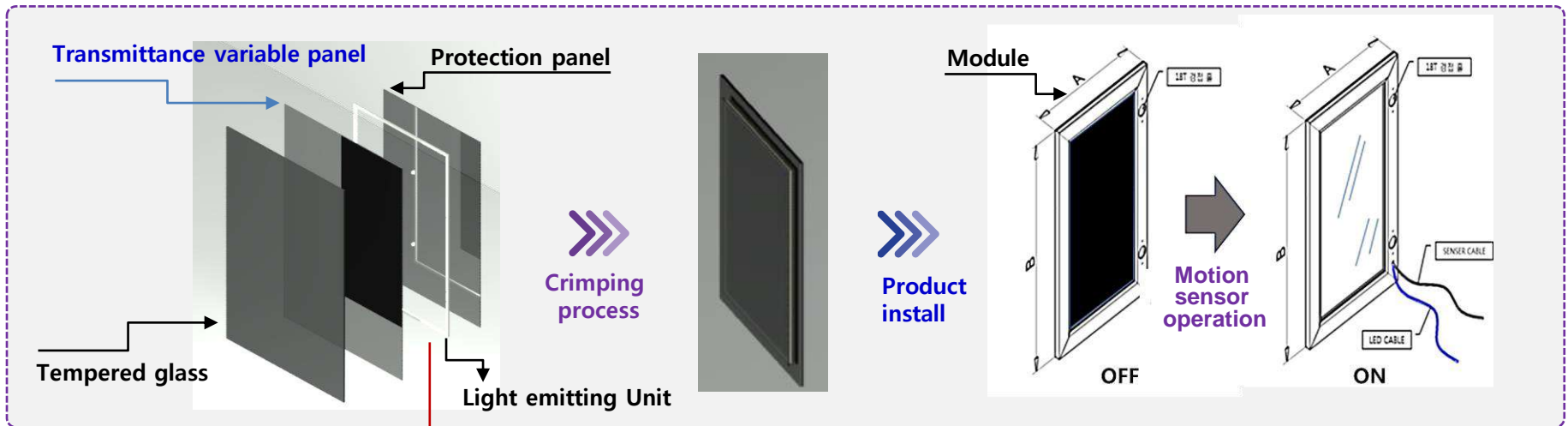
	Smart Window (PDLC)	INTOSEE Co., Ltd.
<p><b>Products</b></p>	 <p>*PDLC (polymer dispersed liquid crystal devices)</p>	
<p><b>Principle</b></p>	 <p>Method of injecting a color changing material (liquid crystal) into a conductive transparent substrate and sealing it</p>	 <ul style="list-style-type: none"> <li>▪ The first technology to see the inside using the reflectance of LED light without liquid crystal (patent: 10-1632300)</li> </ul>
<p><b>features</b></p>	<ol style="list-style-type: none"> <li>① Price is expensive by using polymeric liquid crystal.</li> <li>② Limit of viewing angle</li> <li>③ Reliable as it is in liquid state</li> </ol>	<ol style="list-style-type: none"> <li>① High reliability with solid state materials</li> <li>② High ON/OFF ratio</li> <li>③ Low cost and easy to install</li> </ol>

- Excellent Transparency (on,off), Drive temperature, Driving voltage

Specifications		Smart Window (PDLC)		INTOSEE Co., Ltd.	
		White	Blue	Black	Red
Electrical	Electrode	ITO	Polymer	No	No
	Thickness	400 <	100 <	1~5mm	
	Transparency (On, %)	85 <	80 <	90 <	< 85
	Transparency (Off, %)	60~65	55~60	< 5	< 7
	Drive Temp. (°C)	30~100		115°C (Max 200°C)	
	Driving Voltage(DC)	80 <	40 <	12V	
	Power Consumption (W/sq)	4~7	4~6	0.3(1ea) ~ 15	
Cost	install	Temperature, Drive voltage Limit		Easy to install	

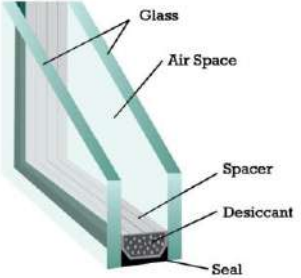
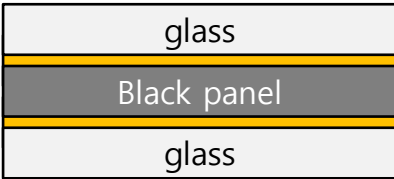



\*PDLC (polymer dispersed liquid crystal devices)

PMMA & PC material technology with 35nm hole structure



It is a structure formed of a small hole with a size of 35 nm, which is not visible from the front and is transmitted to the refraction of light by irradiation with external light.

Pair glass vs. INTOSEE panel

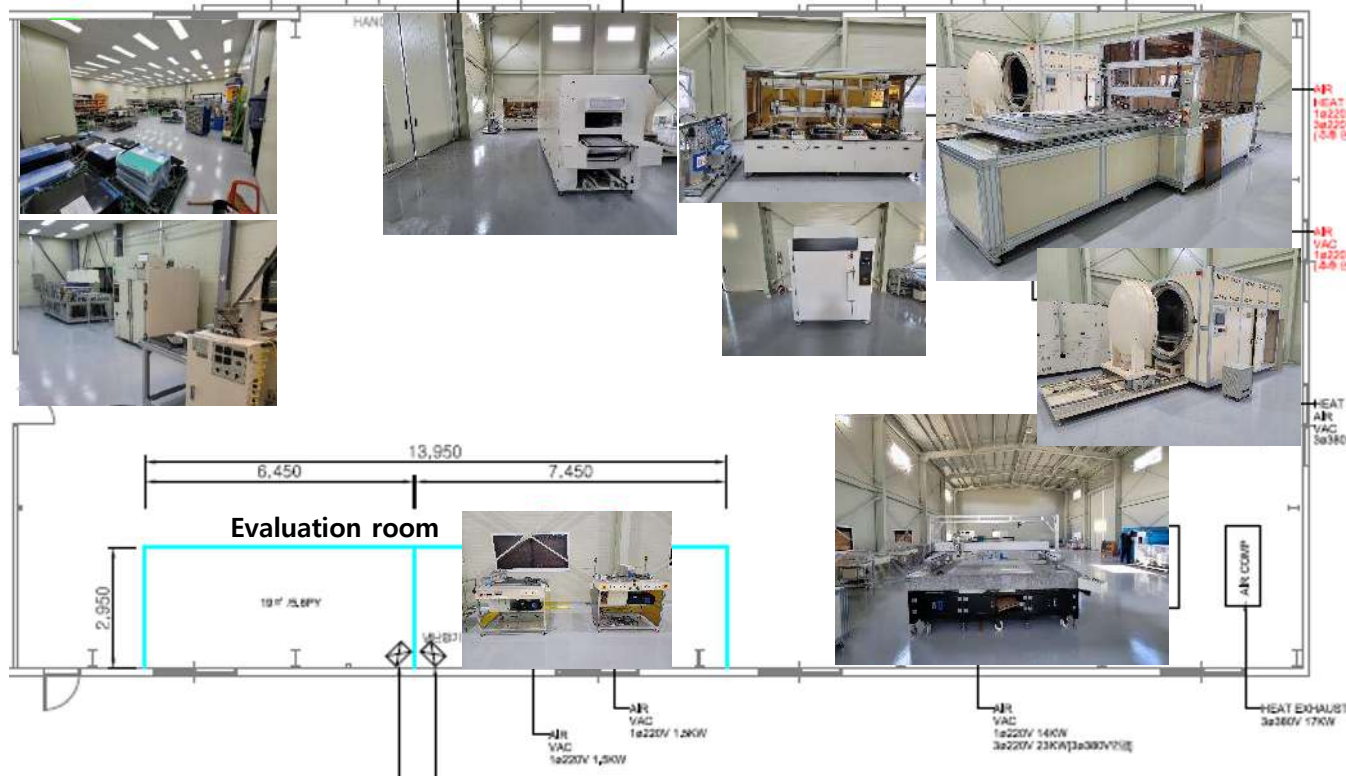
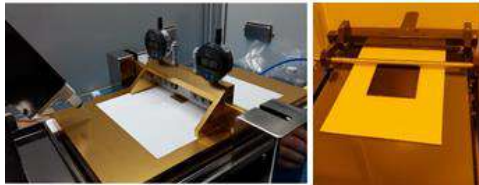
	Existing pair glass	INTOSEE Panel
<p><b>Structure</b></p>	 <p>Thickness ; 25mm or more</p>	 <p>Thickness ; 9mm ~ 15mm (depend on performance)</p>
<p><b>Principle</b></p>	<p>It is <b>difficult to manufacture</b> and prevent scattering from breakage because it shows heat dissipation/sound insulation effect by <b>injecting gas between the glass.</b></p>	<p>Glass and see-through panel <b>adhesion (OCR) method</b> exhibits its own heat dissipation/sound insulation effect while <b>preventing glass from breaking and scattering.</b>  <b>And easy to manufacture and easy to apply to existing products.</b></p> <p>*. OCR ; Optical Clear Resin</p> <div style="text-align: right;">  <p>Existing refrigerator</p>   <p>Apply INTOSEE panel</p> </div>

## Establish a production line for see-through panels that you can see the inside without opening the door.

- ✓ Establishment of INTOSEE corporation(2018. 10. 19)

31418, 307-7, Sandong-ro, Eumbong-myeon,  
Asan-si, Chungcheongnam-do, Republic of Korea  
(land: 3,085m<sup>2</sup>, floor space: 1,869m<sup>2</sup>)

- ✓ Building 8 types of Optical bonding facilities and 5-types of see-through panel automation facilities.
- ✓ Production management automatic system operation.
- ✓ Quality management system certification (ISO9001)



CEO



Oh Jae-Hwan

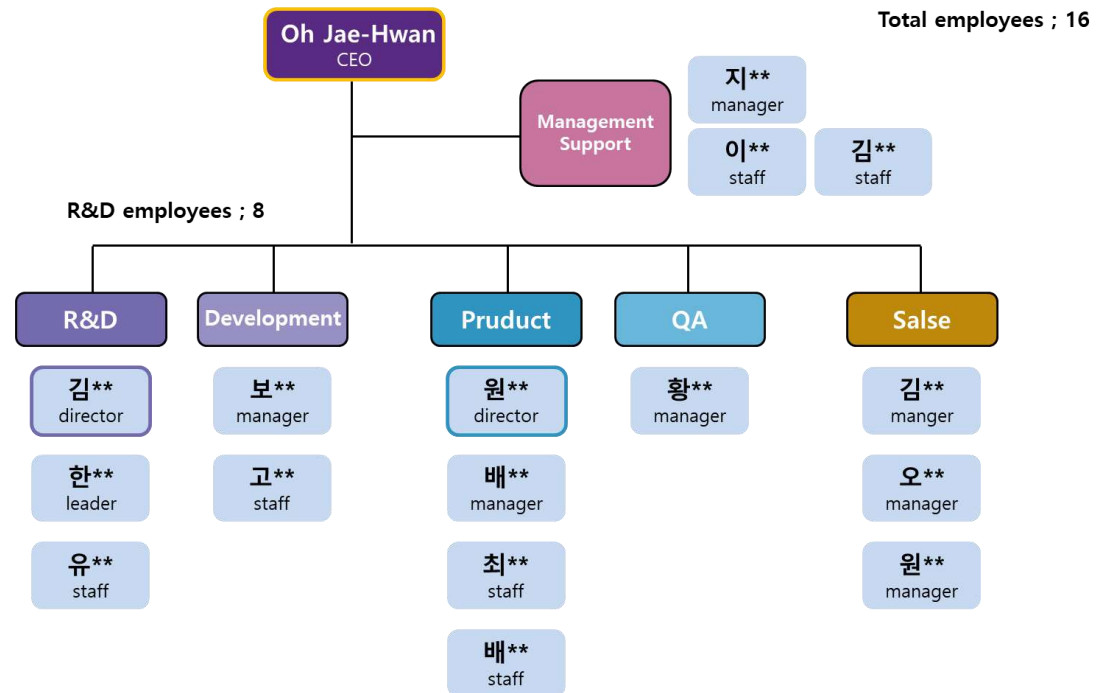
- Research Professor, Institute of Photoelectronic Materials, Korea University (2nd year)
- Samsung Display, OLED Division Development Office (10 years)  
: Galaxy8, 9 panel development, transparent display development
- Kyung Hee University Doctor of Engineering, Department of Information Display (5 years)

Mr. Kim (R&D Department)

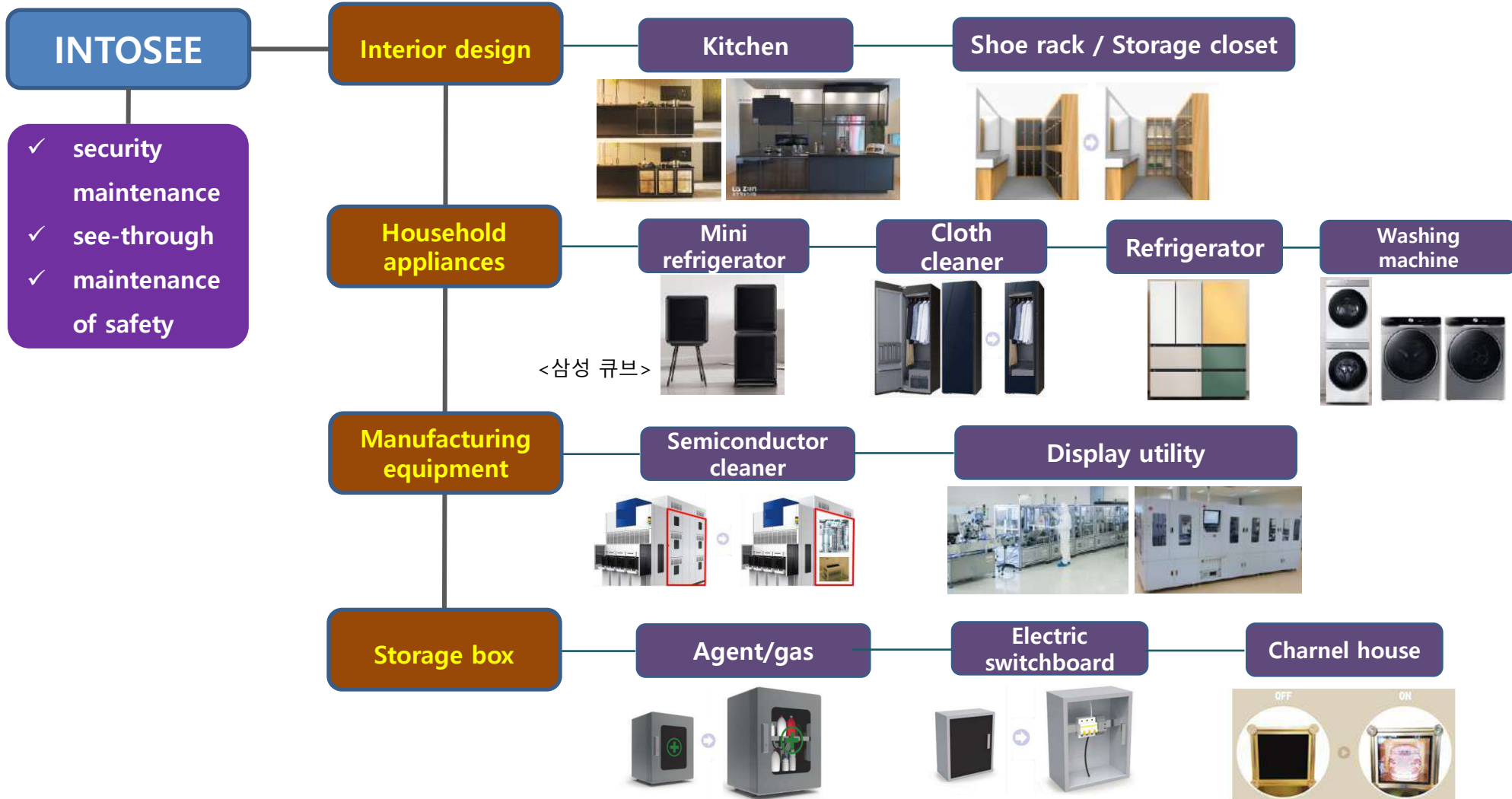
- Samsung automation equipment technology (10 years service)

Mr. Won (Production Technology Department)

- Senior Researcher, Research and Development Team, JSR Micro Korea (9 years)



Various "see-through door" application



Products currently on sale

LX Hausys Zenith9 "Social lounge" (B2B)



LX Hausys Zenith9 "My gallery" (B2B)



Cosmetic refrigerator (B2C)



La chance Watch winder (B2C)



# Under developing

Cosmetic refrigerator version 2



Interior kitchen



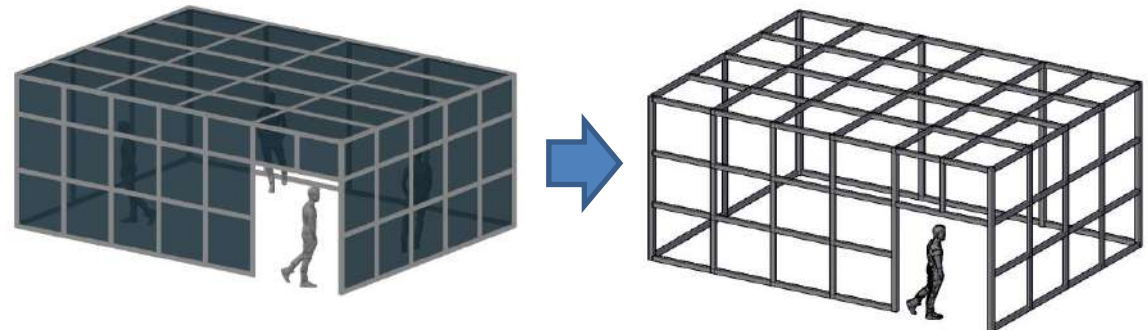
Cloth cleaner

Contamination level monitoring

Finish!



INTOSEE house





*Thank you!*

**INTOSEE**

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