Air Environment Solution for Public Restrooms

GOTTOGPOWER (ANHUI) CO., LTD.

01 Policy Background & Odor Source Analysis

Policy Background

The restroom environment is an important indicator of a society's level of civilization and serves as a vibrant calling card for a city. Restroom improvement has been a social focus in recent years, with widespread consensus from government to public on the importance of a clean restroom environment.

中华人民共和国住房和城乡建设部
Ministry of Housing and Urban-Rural Development of the People's Republic of China
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Notice of the Ministry of Housing and Urban-Rural Development on promoting the "toilet revolution" and improving the service level of urban public toilets

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To the Departments of Housing and Urban-Rural Development of all provinces and autonomous regions, the Urban Management Committees (Land Planning Committees, Planning Bureaus, Urban Appearance and Gardening Committees, and Greening and Urban Appearance Bureaus) of all municipalities directly under the Central Government, the Hainan Provincial Planning Committee, and the Construction Bureau of the Xinjiang Production and Construction Corps:

In order to thoroughly implement the spirit of the 19th CPC National Congress, fully implement General Secretary Xi Jinping's important instructions on the "toilet revolution", improve the service level of urban public toilets, and meet the people's growing needs for a better life, the following notice is hereby issued on

GB/T 17217-2021 Public Toilet Hygiene Standards

On March 9, 2021, the State Administration for Market Regulation and the National Standardization Administration of China officially issued GB/T 17217—2021 “ Hygiene Standard for Public Toilets, ” which came into effect on October 1, 2021.

GB

中华人民共和国国家标准

GB/T 17217—2021

公共厕所卫生规范

Hygienic specification for public toilet

2021-03-09 发布　　2021-10-01 实施

国家市场监督管理总局
国家标准化管理委员会　发布

表 1　公共厕所卫生学评价指标与阈值

卫生学评价指标		卫生阈值	
		附属式	独立式
媒介生物	成蝇/(只/m³)	≤1	≤3
	蝇蛆/(只/m²)	—	0
臭味气体	臭味强度/级	1	≤2
	氨/(mg/m³)	≤0.3	≤0.5
	硫化氢/(mg/m³)	≤0.01	
换气次数/(次/h)		≥5	≥5(机械通风方式要求)
采光照明	窗地面积比值	1/6～1/8	≥1/7
	照度/lx	≥50	

The Hazards of Restroom Odors to Human Health

Ammonia

(NH3)
Urine Smell

Colorless gas with a strong pungent odor

Irritates eyes, nose, and throat with burning sensation, causing tearing, coughing, sneezing, sore throat, bloody phlegm, chest/head pain, dizziness, and fatigue; severe cases may lead to lung/brain swelling, throat closure, or suffocation.

Hydrogen Sulfide

(H2S)
Rotten Egg Smell

Colorless, toxic, acidic gas
Has a rotten egg odor at low concentrations

Strong neurotoxin that irritates eyes/ respiratory tract and stimulates mucous membranes; affects the central nervous system; high concentrations can be fatal rapidly.

Methyl Mercaptan

(CHaSH)
Cabbage Smell

Colorless gas with a rotten cabbage odor

Strongly irritates eyes/ skin/mucous membranes/respiratory tract, causing tearing, pain, nausea, and numbness; high concentrations may stop breathing and cause death.

Methylamine

CsHsNHCHs
Fishy Smell

Colorless to yellowish liquid

Irritating to eyes, respiratory system, and skin


02
Our Solutions

Common Deodorization Methods

Spraying Air Freshener

This product contains ethanol/ formaldehyde/strong acids/ chemicals and uses fragrances to mask odors, causing lingering pollution and long-term health risks.

Installing Automatic Scent Dispensers

Fragrances are chemicals that don’ t remove odors but cause lingering pollution and serious health hazards.

Using Deodorizing Balls

Camphor pills in toilets only hide odors with toxic p-dichlorobenzene/naphthalene fumes; these volatile chemicals don't eliminate smells but cause health risks.

Chemical Oxidation

Disinfectants like chlorine water and bleach have inherent odors; they don’ t remove smells but cause secondary pollution.

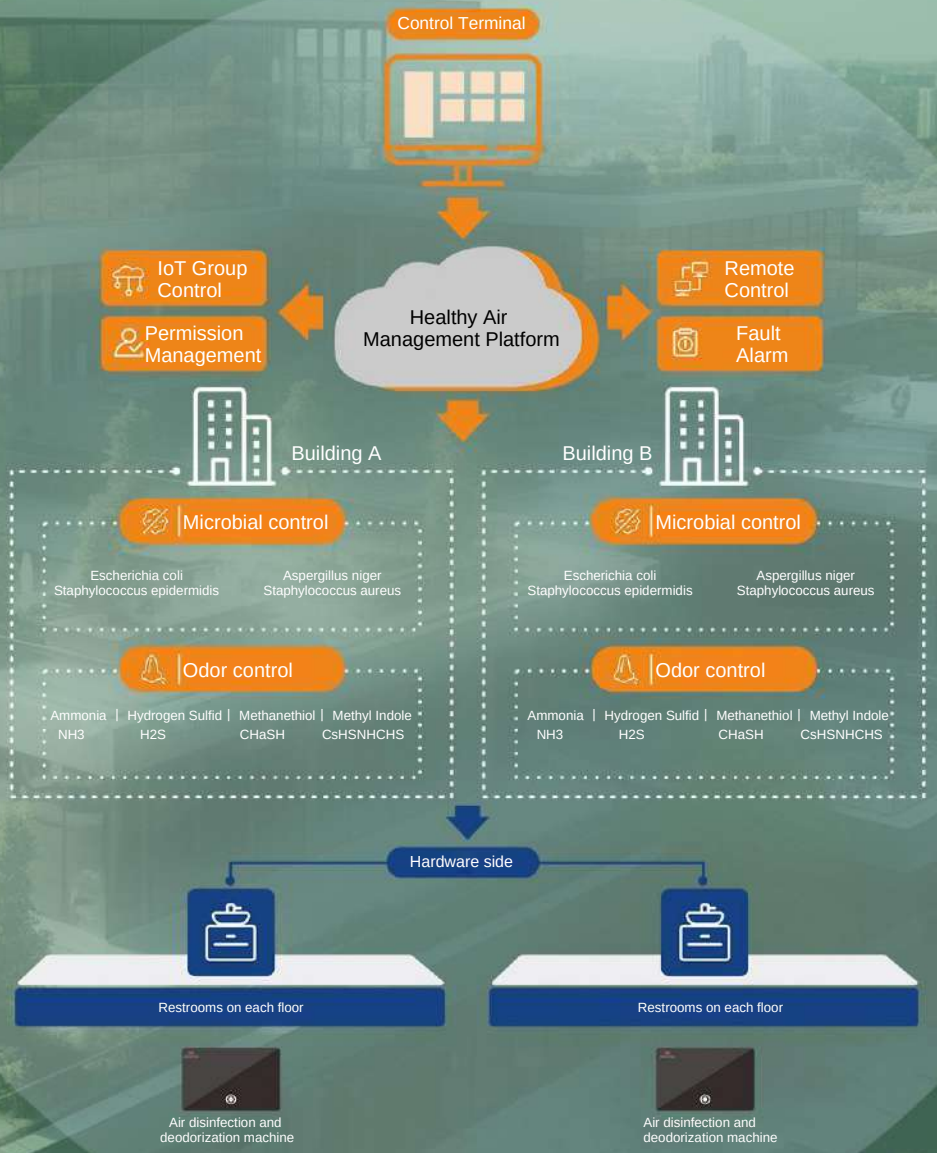
Common Deodorization Methods in Restrooms

Type	Principle	Advantages	Disadvantages
Masking Method	Spraying synthetic or natural fragrances to cover unpleasant smells.	Low investment, easy operat -ion, and fast effectiveness.	Odor molecules remain, causing secondary pollution and needing consumables.
Air Dilution	Using an exhaust fan to remove indoor air helps eliminate odors, or a blower can bring in fresh air to dilute and reduce indoor odor concentration.	Low investment, simple equipment, and low operating costs.	High power consumption, loud noise, and air pollution.
Solid Adsorption	Common adsorbent materials include activated carbon, carbonate compounds, zeolites, and inorganic halides.	Low investment and simple equipment.	Adsorption faces saturation issues and requires consumables.
Ozone Oxidation	Ozone, a strong oxidizing agent, reacts with odor molecules, causing them to undergo reduction reactions and effectively eliminating the odors.	Effectively decomposes odor molecules.	Affects people and removes odors slowly.
Microbial Method	High-concentration, highly active microbial strains are used to suppress the biochemical activity of odor-causing microorganisms at the source.	Simple method.	Long odor removal time.
Plant Extract Spraying	Certain natural plant extracts can be used to break down odor molecules and eliminate unpleasant smells.	Simple method.	Requires consumables, with relatively high operating costs.
Chemical Neutralization	Some substances in odor gases can undergo neutralization reactions with specific chemical solutions to eliminate the odors.	Simple and low-cost method.	Effective for certain odor molecule but causes secondary pollution.
Negative Ions	Most odors, bacteria, and smoke particles in the air carry a positive charge, so released negative ions can neutralize them, causing them to lose their charge and settle out of the air.	Compact equipment with noticeable results.	Pollutants settle and accumulate around the machine, causing dirt buildup.

Public Restroom Air Environment Solutions

GOTTOGPOWER not only supplies deodorizing equipment but also offers comprehensive restroom air environment solutions. While addressing odor removal and sterilization, it provides more efficient, energy-saving, and intelligent options.

Unified control framework system: hardware + software + platform.



Control platform

- Monitor device operating status in real time
- Adjust airflow volume
- One-click on/off for all devices
- Individual device power on/off
- Scheduled on/off
- Choose list view or large view as needed

Next-generation deodorization technology, leading the industry frontier.

Deodorization Products	Air Disinfection and Deodorization Machine	Exhaust fan	Air freshener	Ozone Generator
Core Principle	High-Frequency Resonance Plasma	Negative Pressure Ventilation	Masks Odors	Ozone Reacts With Ammonia
Noise	Low	Loud	Low	Low
Ozone Emission	Extremely minimal	None	None	Large Amount
Human Compatibility	✓	✓	✓	
Consumables Required	None	None	Air freshener	None
Deodorization Efficiency				

High-frequency Resonance Plasma Disinfection And Deodorization Technology

Plasma can break the chemical bonds of gas molecules, generating a large number of active free radicals such as OH and OH2, which chemically react with odor molecules. At the same time, it disrupts the living environment of bacteria in the air, deactivating them and achieving sterilization.

Authoritative Testing
By Third-party Organizations

90.9%
Ammonia removal rate

99.99%
E. coli elimination rate

99.99%
A. niger kill rate

99.2%
S. aureus kill rate

99.96%
S. epidermidis kill rate

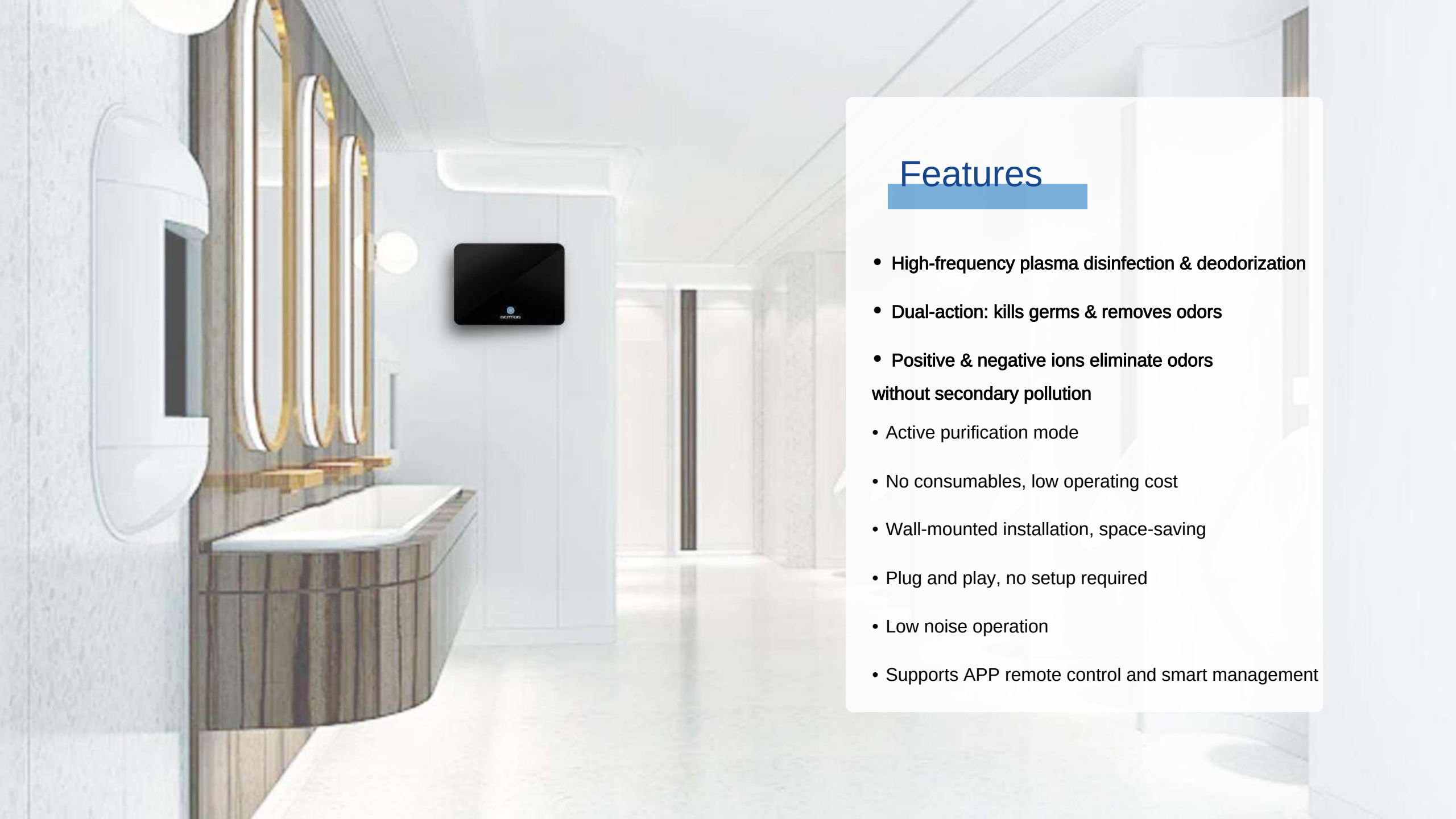
The data comes from third-party testing organizations: Zhongke Testing Technology Services (Guangzhou) Co., Ltd. and Guangdong Microbial Analysis and Testing Center.
Report numbers: JKK23090120B, 2019FM11612R01, 2019FM11612R02, 2019FM11612R04.

Air Disinfection And Deodorization Machine

Core Tech: High-frequency resonance plasma

Main Functions: Disinfection & deodorization

Use: Public restrooms



Features

- **High-frequency plasma disinfection & deodorization**
- **Dual-action: kills germs & removes odors**
- **Positive & negative ions eliminate odors without secondary pollution**
- Active purification mode
- No consumables, low operating cost
- Wall-mounted installation, space-saving
- Plug and play, no setup required
- Low noise operation
- Supports APP remote control and smart management

03

Partial Installation And Application Cases

Wall-mounted & easy to install; plug in and use with one button

Guangzhou South Railway Station

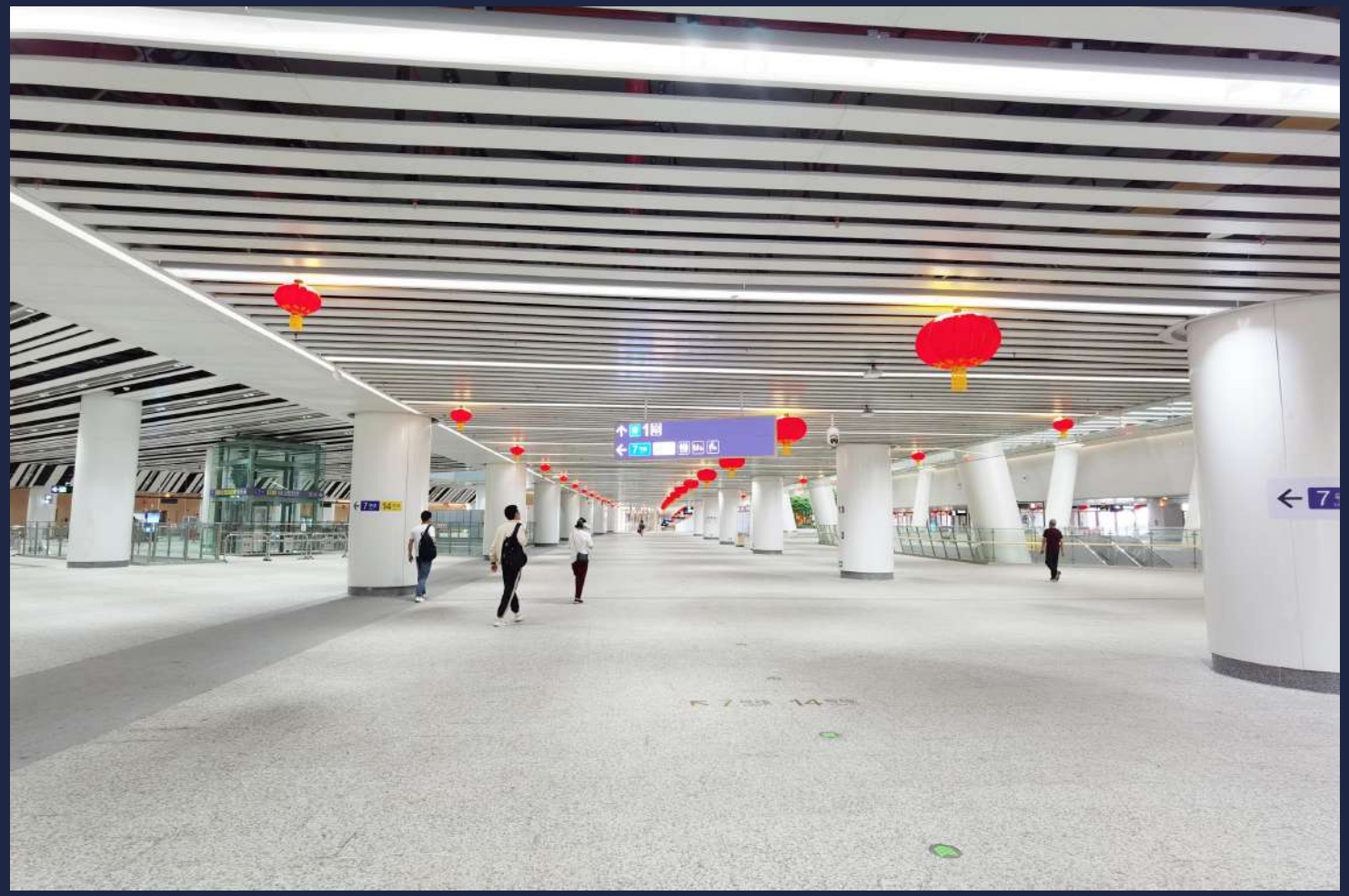
Shanghai Pudong Airport

China State Railway Group

Shaanxi Provincial Library

China Southern Airlines

Shenzhen Metro



Xiamen Metro

Tangdu Hospital, Fourth Military Medical University

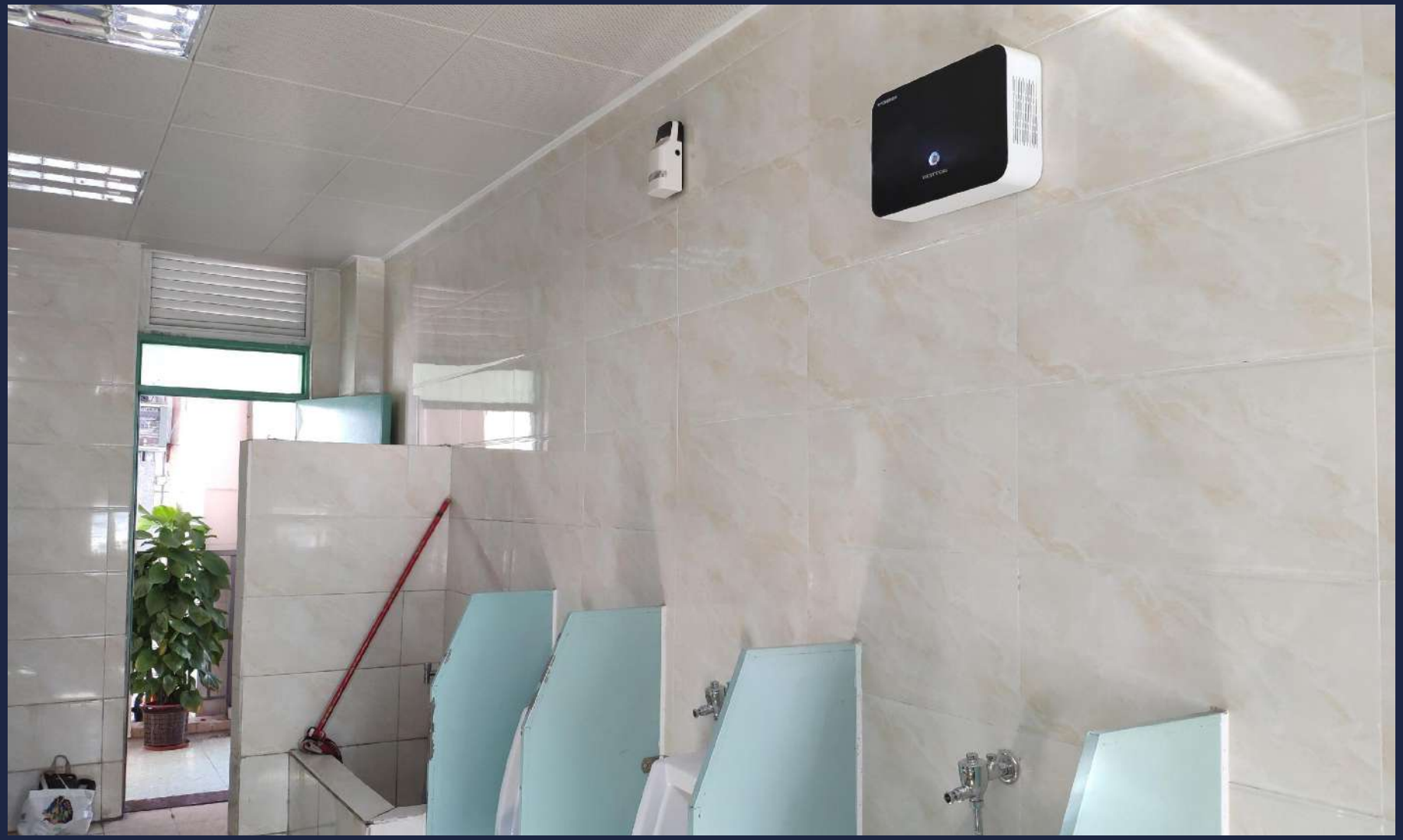
Tianshan Road Subdistrict, Changning District, Shanghai

Tsinghua Information Port

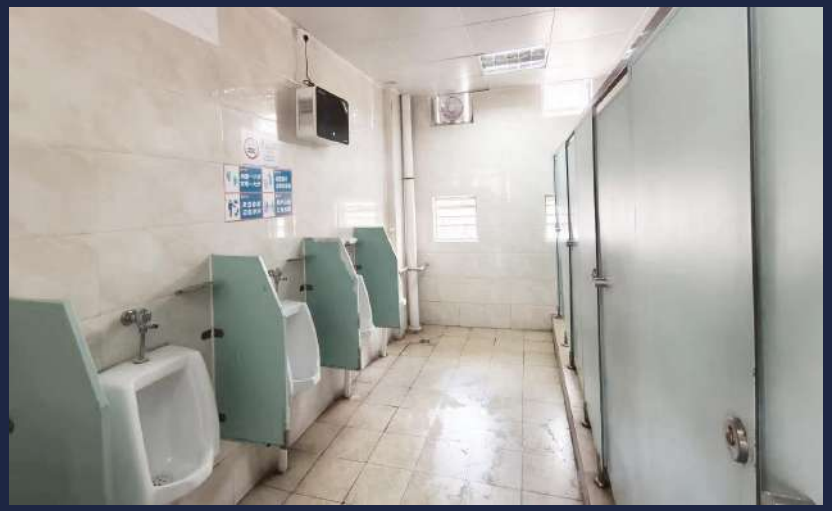
Tsinghua University Art Museum

Shenzhen Construction Engineering Bureau

A middle school in Shenzhen



An elementary school in Shenzhen



A kindergarten in Shenzhen


THANKS!
智控冷暖 洁净呼吸