The First Step to The Sky!

January 29, 2015

Company Introduction

AG specializes in manufacturing Passenger Boarding Bridge and has many project management experiences (supply, installation, test, operation, refurbishment and maintenance) in Korea project and oversea projects.

Years of Factory Registration	19 Years (1995, 11)
Major Facility	Factory / Office / Doarmitory / Restaurant
Major Equipment	JIG which is exclusive for Boarding Bridge, Cutting Machine, overhead crane etc
Plant Area	• Area of Plottage : 8,351㎡ • Area of Plant : 2,977㎡

Reference List

Major Projects

Country / Airport	No. Of units	Clients	Completed in
Korea/ Jeju International Airport	4 Units	KAC (Korea Airports Corporation)	2006
Korea/ Kimpo International Airport	7 Units	KAC (Korea Airports Corporation)	2006
Korea/ Incheon International Airport	51 Units	IIAC (Incheon International Airport Corporation)	2008
Korea/ Kimpo International Airport	3 Units	KAC (Korea Airports Corporation)	2008
Airbase-15 / Seoul airport	1 Unit	Airbase-15	2009
Korea/ Kimpo International Airport	2 Units	KAC (Korea Airports Corporation)	2010
Korea/ Incheon International Airport	2 Units	IIAC (Incheon International Airport Corporation)	2011
Turkey / UBS	1 Units	UBS (Ugur Bilgi Sistemleri)	2013
Colombia/ Bucaramanga airport and Cúcuta airport	6 Units	CONSORCIO ABINQUIP	2013
Korea/ Gimhae International Airport	3 Units	KAC (Korea Airports Corporation)	2013
Colombia/ Santa Marta airport	2 Units	CONSORCIO ABINQUIP	2014
Korea/ Cheongju International Airport	2 Units	KAC (Korea Airports Corporation)	2014

Reference List

Major Projects

Country / Airport	No. Of units	Clients	Completed in
Turkey / Diyarbakir Airport	6 Units	UBS (Ugur Bilgi Sistemleri)	2015 March
Iran / Rasht International Airport	2 Units	TMB(Tolid Malzoomat Bargh Co.)	2015
Iran / Mashhad International Airport	5 Units	TMB(Tolid Malzoomat Bargh Co.)	2015
Korea / Gimpo International Airport	11 Units	KAC (Korea Airports Corporation)	2015
Korea / Gimhae International Airport	10 Units	KAC (Korea Airports Corporation)	2015

Passenger Boarding Bridge

Gimhae International Airport

Seoul Airbase(Steel wall Tunnel and Ball screw Type)

Passenger Boarding Bridge

Incheon International Airort for F-Class Aircraft

Passenger Boarding Bridge

Reference for overseas project

AG's PBB in colombia

AG's PBB In Turkey

New Technology

1. Level-Adjustable Rotunda Column

2. Compact Roof-top Air Conditioners

3. None-Step Gangway

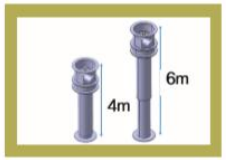
4. Outside Rain Drainage

5. Leveling Platform at Cabin

PBB Patents of KAC and AG

No.	Title of the Invention	Brief Description	Reference (Applied Airports)
1	HEIGHT ADJUSTABLE ROTUNDA TYPE BOARDING BRIDGE	Level adjustable rotunda column can controls the overall slope of tunnel to enhance the utility and safety of the PBB	Chungju Intl(2014, implemented)
2	COOLING AND HEATING SYSTEM AND COOLING AND HEATING CONTROL SYSTEM FOR BOARDING BRIDGE	Air conditioning can be provided throughout the entire tunnels of the PBB	Jeju Intl(2013), Gimhae Intl(2013), Gwangju(2014), Chungju Intl(2014, implementing), Ulsan(2014, implementing)
3	STEPLESS PASSAGE	Flat floor between internal and external tunnels of telescopic PBBs can provide smoother surface to ease moving passengers and baggage.	Gimhae Intl(2013), Chungju Intl(2014, implementing)
4	RAIN DRAIN FOR PBB	Rain drains at both sides of outer tunnel of the PBB can be concealed for safety and fine view.	Gimhae Intl(2013), Chungju Intl(2014, implementing),
5	PBB ADAPTOR FOR COMMUTER TURBO JETS	An adaptor can connect the conventional PBB and turbojets to enhance the PBB utilization.	-

New Technology

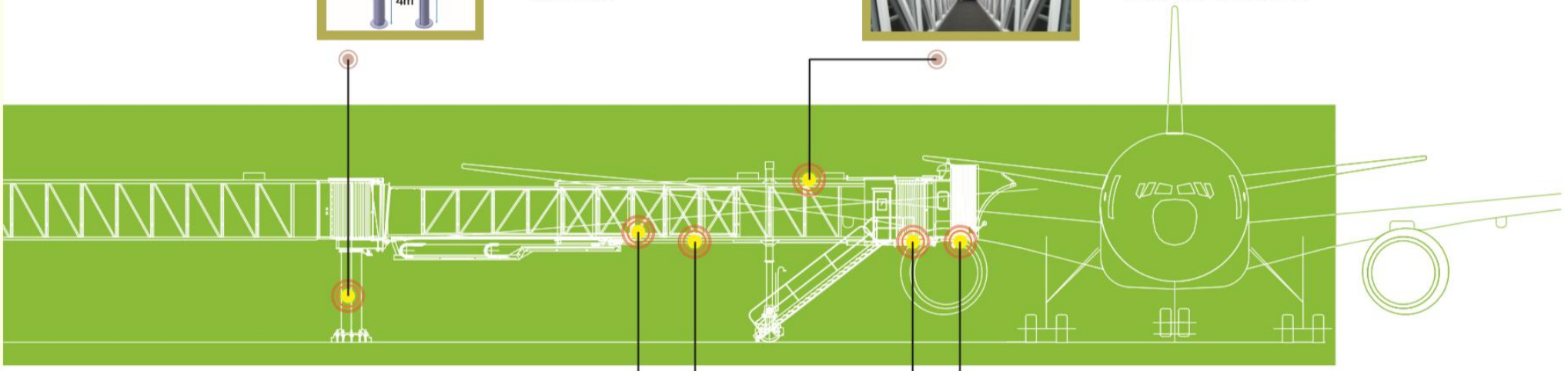


1 Moving Rotunda Column

PBB can park all of Airplane type using this device.

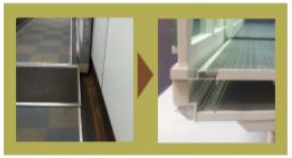
2 System Air-conditioner

This system can maintain the same heat and cool for inner parts of PBB.



3 None step Tunnel

A handicapped person can go through tunnels without any trouble.



4 Rain drain (outside)

Rain drain is located down tunnel. It can make the clean tunnel.

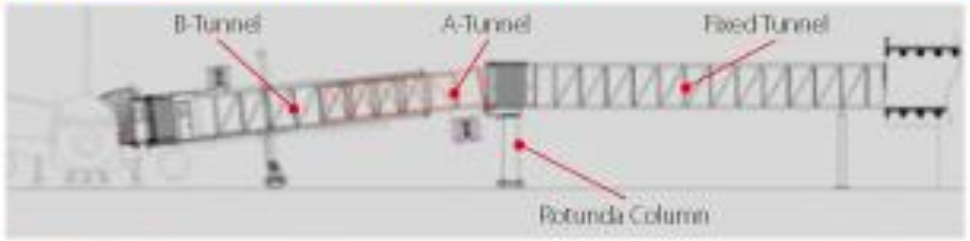
5 Window (open) Type Cabin

The wide view

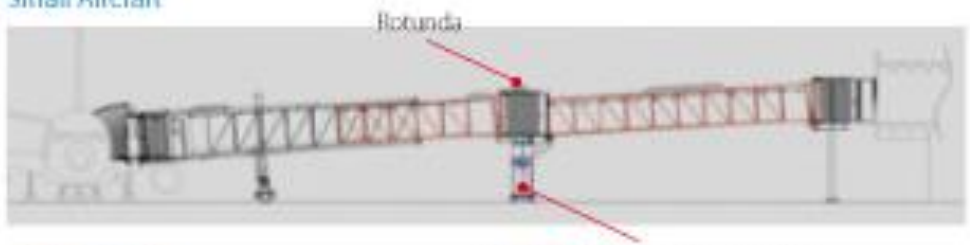
6 Slope device for a handicapped person

The careful concern for a handicapped person

Level-Adjustable Rotunda Column



Small Aircraft



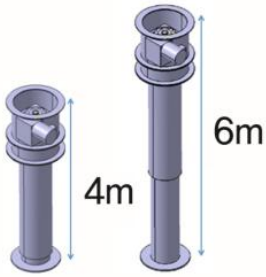
Large Aircraft

Background

- Fixed-level rotunda column
- Limit in aircraft contact depending on their size
- No contact service for small aircraft
- Inefficient utilization of airport contact spots

Key Notes

- Level-adjustable rotunda column
- Adjustable rotunda level by the aircraft size



Features

- Universal PBBs for small and ultra large aircraft.
- Increased utilization rate of PBBs
- Better service to passengers through less sloped tunnels

Possible Rotunda Levels Against Aircraft Range

Aircraft Service Range	Classification of Aircraft Door Sill Levels(D m)	Possible Rotunda Level Range(H m)
Low Aircraft	D ≤ 3.75 m	3.75 m ≤ H ≤ 4.0 m
Medium Aircraft	3.75 m ≤ D ≤ 4.5m	4.5 m ≤ H ≤ 5.0 m
High Aircraft	4.5 m ≤ D	4.5 m ≤ H ≤ 6.0 m

* Airport Development Reference Manual(2004, IATA)

New Technology

Stepless Passage

Background

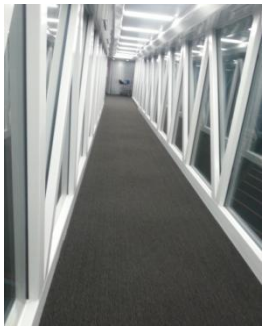
- Level difference between the internal and external tunnel floors
- Low mobility caused by the sloped plate at the telescopic connection

Key Notes

- Enhanced mobility at the telescopic connection by reducing level differences

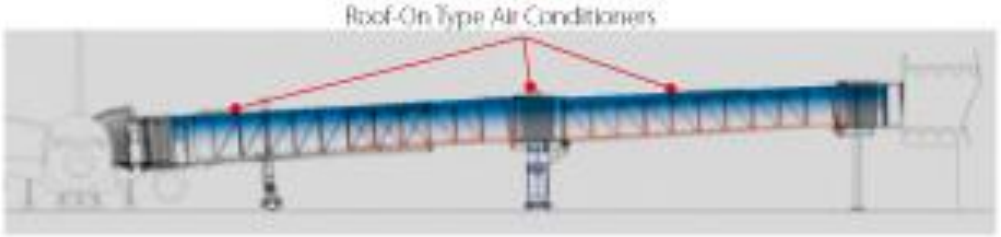
Features

- Removal of sloped plates between the internal and external tunnel floors
- Smoother surface for ease in moving passengers and baggage
- Better and safer measures for weak and disabled passengers



New Technology

Roof-On Type Air Conditioners



Background

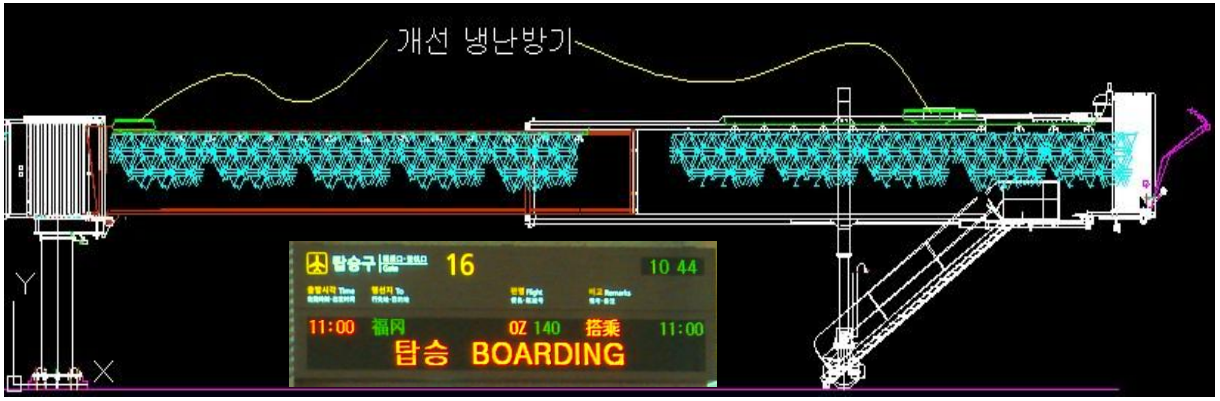
- Undistributed air conditioning in the PBB tunnels
- Manual on/off system
- No operation plans
- frequent failures

Key Notes

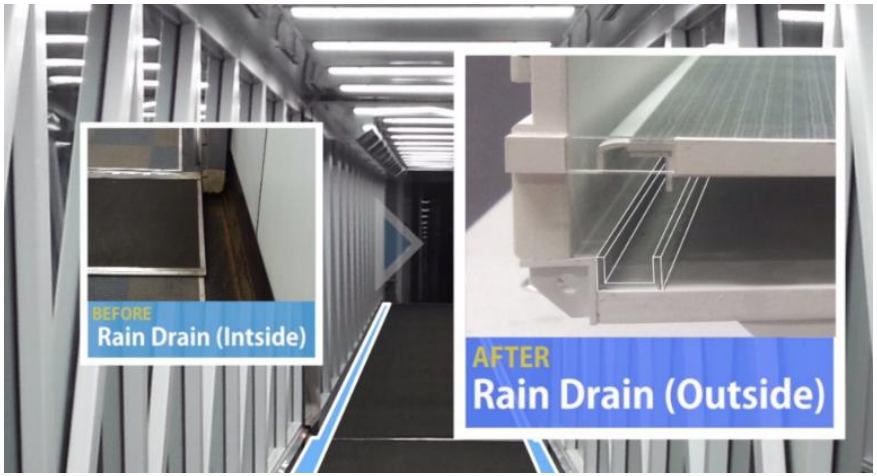
- Distributed air conditioning through duct system within fixed and movable tunnels
- Automatic operation through FIDS

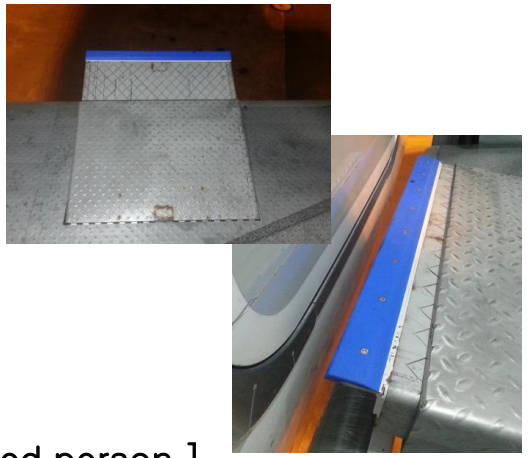
Features

- Distributed air conditioning throughout the PBB tunnels
- Efficient operation though automatic and energy-saving operations
- Reduced complaints by passengers and low-rate system failure



New Technology



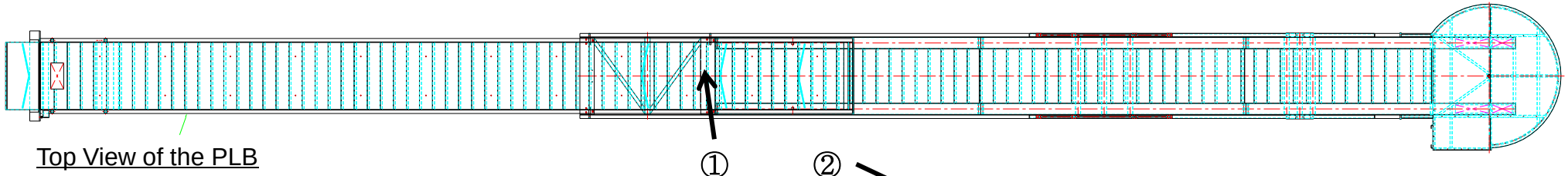


[Slop device for a handicapped person]

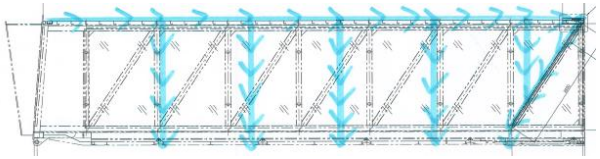
Drainage System of PLB

✈ Drainage Process

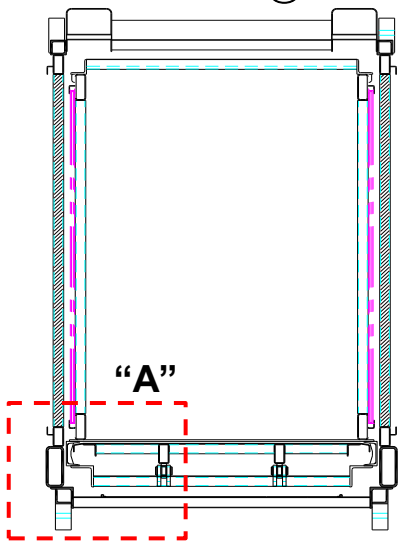
① Rain drop to the inner tunnel roof → ② Flow between the walls of tunnels → ③ Gutters on both sides of the outer tunnel



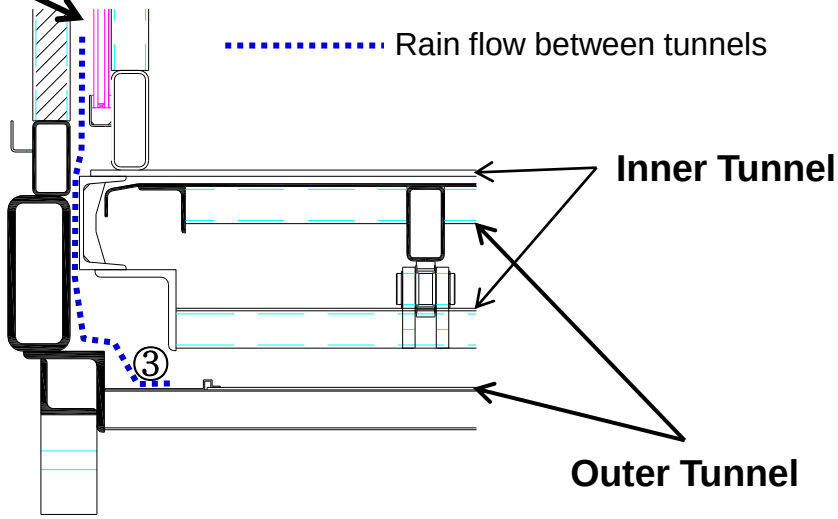
Top View of the PLB



Lateral View of the PLB



Sectional View



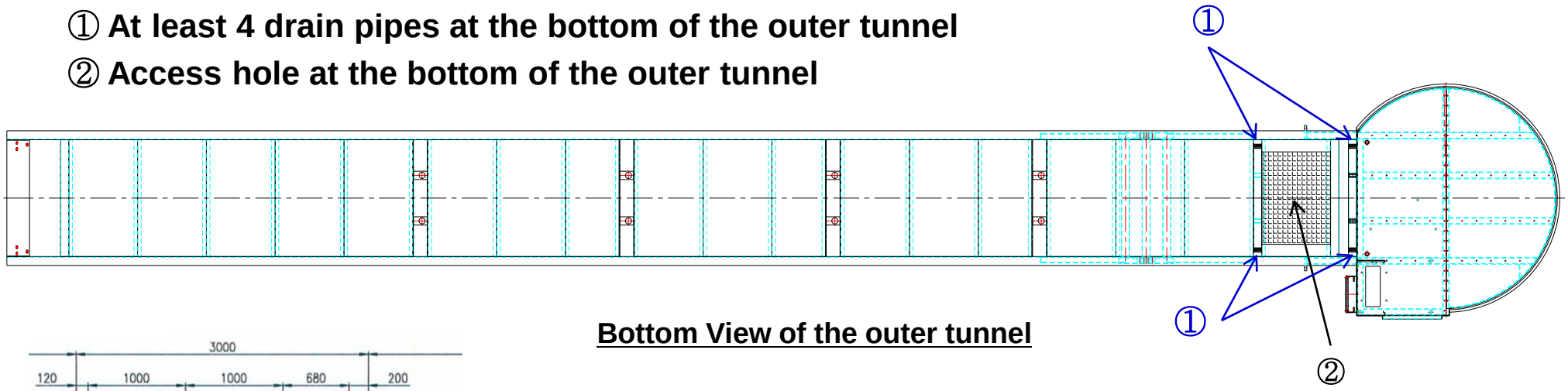
Detail "A"

Drainage System of PLB

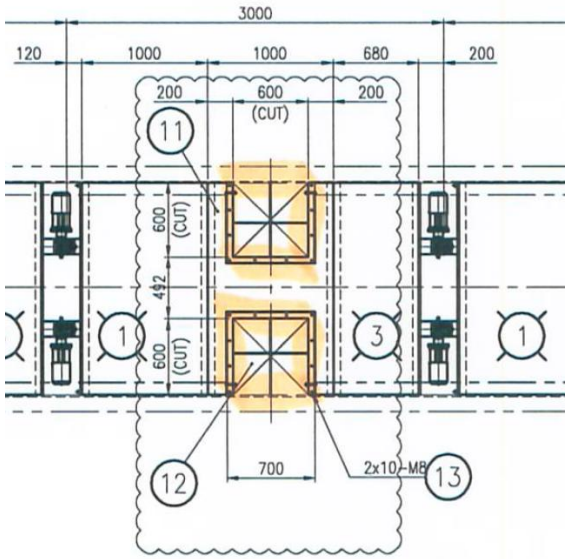
✈ Cleanout Drain

① At least 4 drain pipes at the bottom of the outer tunnel

② Access hole at the bottom of the outer tunnel



Bottom View of the outer tunnel



Note. Various modifications for the forms of the cleanout and access hole(s) are possible by the client's request or the climate condition of the site

Newly developed Safety Shoes

- The Safety Shoe recognizes person's foot and the aircraft door

➢ If a person steps on the safety shoe, the safety shoe does not activate.

➢ Only of the aircraft door touches the safety shoe, the safety shoe activates.

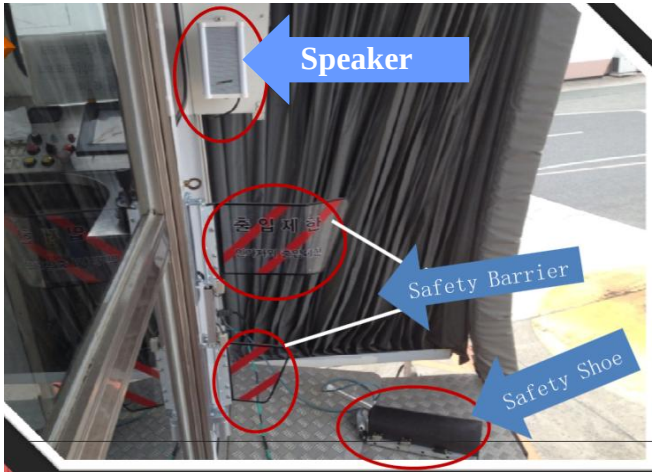
▣ Safety Shoe

① Foot Sensor

② Aircraft-Door Sensor

▣ Control Box

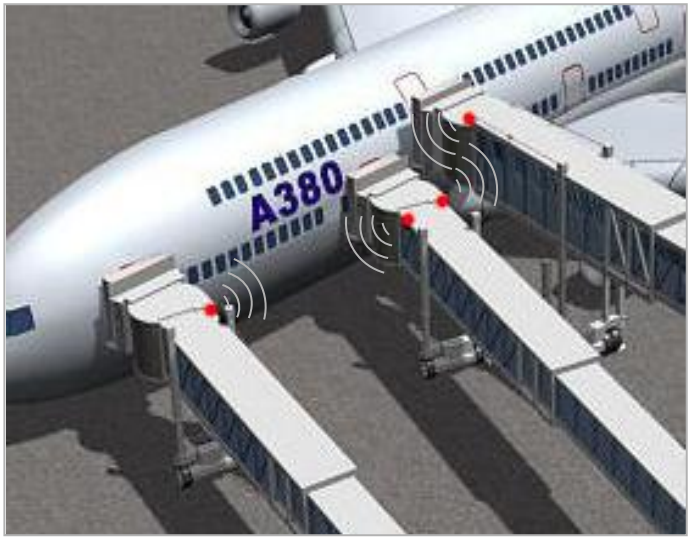
▣ Safety Barrier



New Technology

Sensors between the inner and outer tunnels

Anti-Collision Devices



Sample of schedule

PHRCHASER				REV : 0	DATE : January 06, 2015
PROJECT NO.		TITLE	PBB PROJECT		

NO	DESCRIPTION	ITEMS	DURATION	2015											2016				
				2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
		BIDDING CLOSED																	
		CONTRACT	5																
1	GENERAL	SPEC. REVIEW	10																
		P/ORDER	10																
		KICK OFF MEETING	5																
		BASIC DESIGN	25																
		REVIEW	5																
2	ENGINERING	DETAIL DESIGN	35																
		1ST APPROVAL	5																
		REVIEW	5																
		FINAL APPROVAL	5																
		SHOP DRAWING	25																
3	PRODUCTION	1st FABRICATION - 15UNITS	120																
		1st COMMISSIONING - 15UNITS	30																
		2nd FABRICATION - 15UNITS	120																
		2nd COMMISSIONING - 15UNITS	30																
4	PACKING & TRANSPORTATION	1st PACKING - 15UNITS	5																
		1st TRANSPORTATION - 15UNITS	25																
		2nd PACKING - 15UNITS	5																
		2nd TRANSPORTATION - 15UNITS	25																
5	SITE INSTALLATION	1st INSTALLATION - 15UNITS	60																
		2nd INSTALLATION - 15UNITS	60																
6	SITE COMMSSIONING	1st COMMISSIONING - 15UNITS	30																
		2nd COMMISSIONING - 15UNITS	30																
7	FINISHING & SITE TRAINING	FINAL FINISHING	30																
		SITE TRAINING	10																

Thank you for your attention