

A New Golden Age of Air Travel

Envisioning the Future

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ARUP



Mobility and lifestyle hub for business, leisure and connectivity

Monitoring drone for predictive maintenance and improved security

Virtual shopping wall that offers convenience and ease

Ticketless and security technology eliminates gate-lines in stations

Intelligent robots to repair and maintain infrastructure

Energy flooring that generates electricity from footfall

Driverless pods powered by clean energy

Automatic gauge change for cross-border travel

Automatic freight trains distribute freight and goods on the go

Alternative power sources from hydrogen, nuclear, air propulsion or magnetic levitation

Electronic tagging of cargo for reliable tracking and reduced delays

Intelligent robots unload and sort cargo

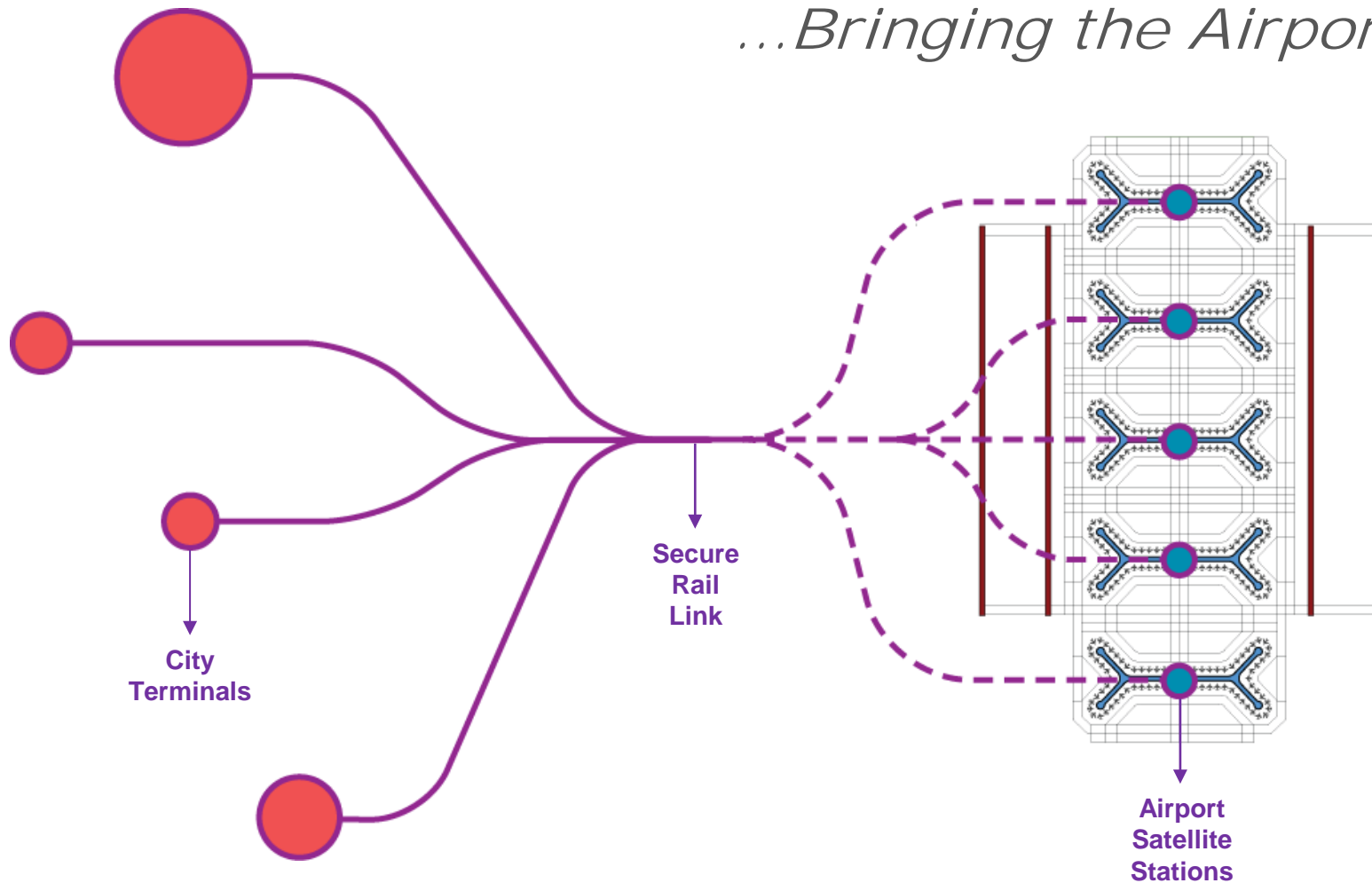
Flexible interiors that cater for different passenger needs

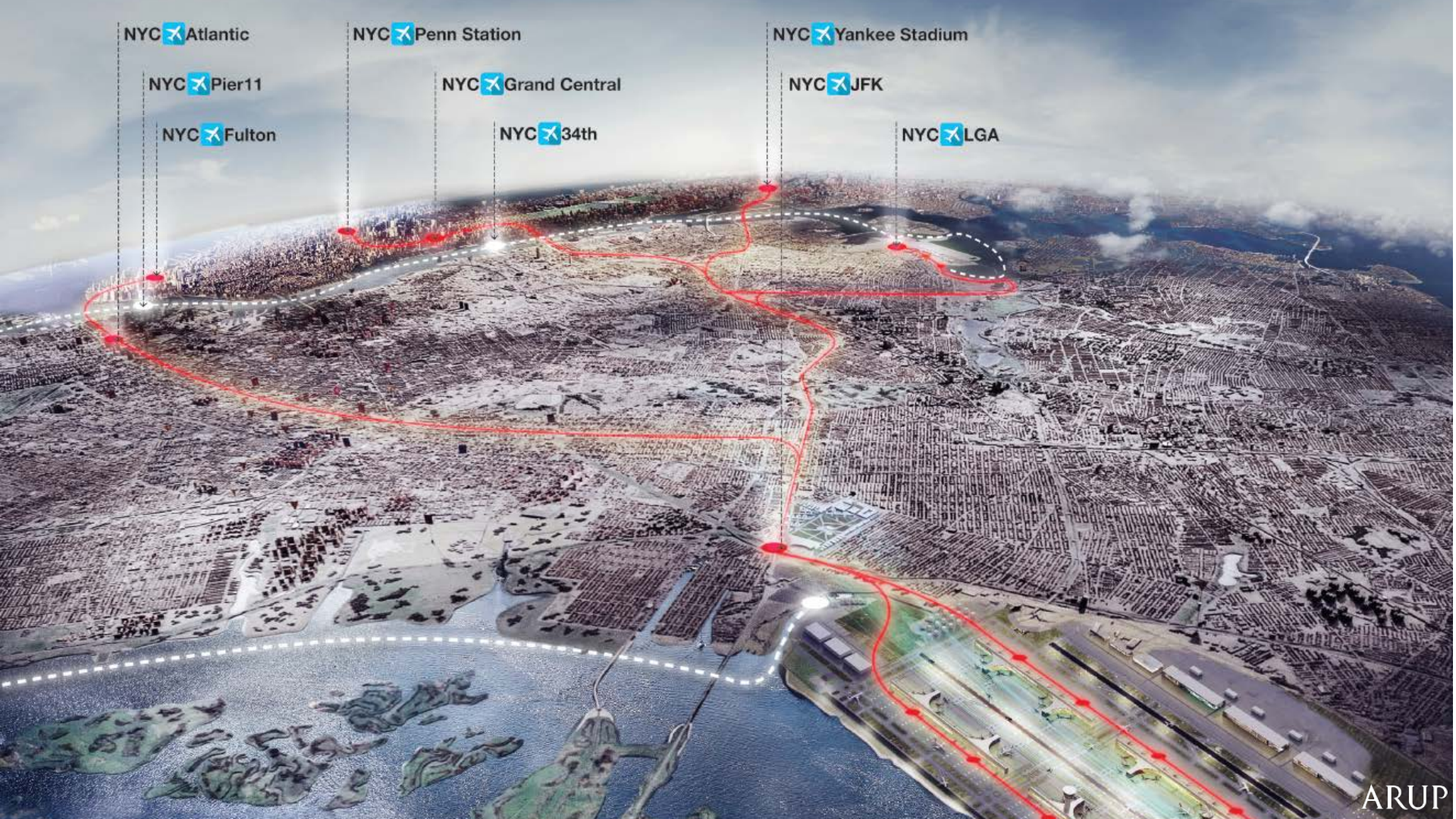
Real-time passenger information for seamless journey planning

Smart window glazing dims automatically to control heat and glare

Automated passenger trains optimise running time and reliability

...Bringing the Airport to You





NYC ✈ Atlantic

NYC ✈ Penn Station

NYC ✈ Yankee Stadium

NYC ✈ Pier11

NYC ✈ Grand Central

NYC ✈ JFK

NYC ✈ Fulton

NYC ✈ 34th

NYC ✈ LGA

1. NYC@JFK

A new 50 million annual passenger Terminal integrated with the Airport City for optimum passenger experience. Also commercial development opportunities for hotels, conference centers and a wide variety of passenger & neighborhood amenities

2. JFK Airfield Pop-Up

Pop-Up facilities provide flexible space for unparalleled resilience

3. Long Term Parking

Conveniently located for traveler access with a quick connections to NYC@JFK via PRT

4. Ferry Access

High speed ferry service from NYC@St. George. Direct connection between Air Express Ferry and Air Express Train

5. Personal Rapid Transit (PRT)

Automated vehicles transport individuals or small groups between NYC@JFK and long term parking

6. Aircraft Maintenance

260-acres for aircraft maintenance facilities—upgraded for future airline fleets

7. Air Express Train

Delivers passengers to their concourse—all gates are just a short walk away

8. Fuel Farm

Existing infrastructure is obsolete and will be replaced by a new state of the art facility planned for future growth

9. Runway 13L-31R Extension

3,300ft extension to the west to improve capacity

10. Cargo Redevelopment

320-acre cargo redevelopment doubles current capacity, with automated high-volume processing

11. New Gates

220-new gates on four concourses—designed for flexible and efficient airside operations and to accommodate future aircraft

12. New Runway

New 10,000ft runway within the existing site boundary, providing 60% increase in peak hour capacity

13. Saarinen Building

This historic building will be celebrated and integrated with a new airside hotel

14. Support Facilities

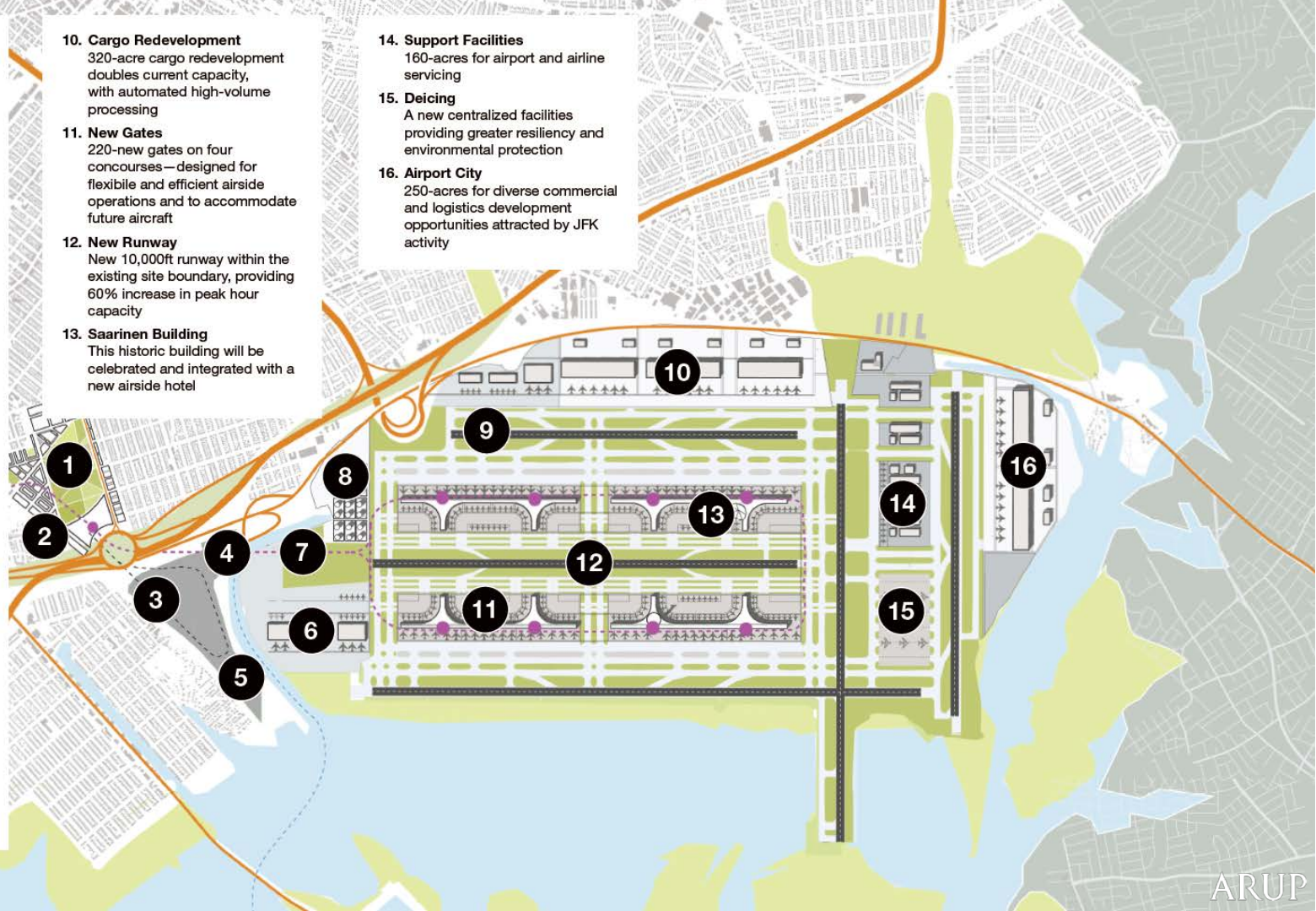
160-acres for airport and airline servicing

15. Deicing

A new centralized facilities providing greater resiliency and environmental protection

16. Airport City

250-acres for diverse commercial and logistics development opportunities attracted by JFK activity



TODAY



60 minutes



15 minutes



15 minutes



15 minutes

Today:
home to gate
1hr 45min

VISION 2050



20 minutes



5 minutes



5 minutes



15 minutes



5 minutes

Imagine
home to gate
50min

The Passenger Terminal of the Future



The future passenger terminal is catered to be adapted to that technological advantage and capital investment level custom

The Checked Bag Reimagined



Passenger baggage handling, whether checked or carried on, is an essential aspect of the air travel experience. Current baggage processes are inefficient and inconvenient for the passenger, airport and airline. Regulatory constraints, long established practices and outdated infrastructure have hindered innovation and delivered a dehumanized experience.

Eliminating the Passenger Screening Checkpoint



Consistent Breakout Gate form in the society, on this pursuit, on challenging

Role of Technology and Big Data



Historically, the aviation industry has adopted electronic data processing in a piecemeal manner, driven by individual entity considerations (e.g. airline online booking and e-ticketing, or retail operator transaction data), and such data is heavily siloed. Many industries have collaborated to move beyond this fragmented approach, notably banking and payment services (e.g. "Apple Pay"), and so the question of how the aviation industry can have a more collaborative data environment is timely.



Copenhagen—a world leader in airport access with 60% of passengers traveling to the airport by rail, metro, bus, bicycle, or on foot.

Heathrow—a global leader in personal rapid transit, having carried more than 1 million passengers to date. Passengers use the on demand, non-stop, congestion free service to connect between the Business Car Park and T5.

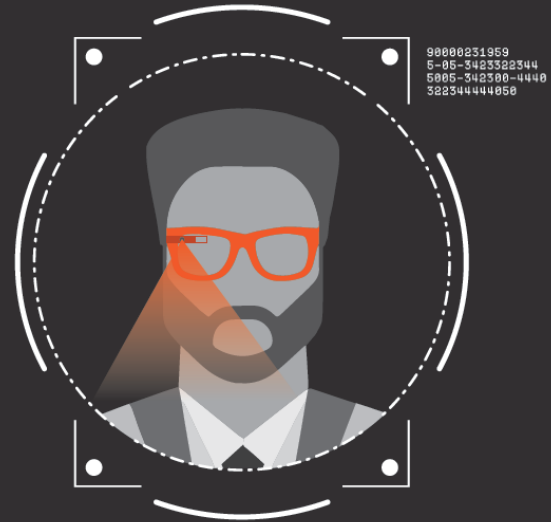
Singapore Changi—a global leader which have successfully developed an identity and brand that resonates with passengers and influences travel decisions.

Zurich & Geneva—world leaders in distributed baggage handling. Passengers can check and claim their baggage at more than 50 Swiss railway stations. Bags can be checked up to 24 hours in advance of departure.

Hong Kong—a world leader in downtown check-in and bag drop, 14% of passengers check-in at Hong Kong Station and take the 24 minute ride on the Airport Express.

Eurostar—a secure high-speed rail service connecting London with Paris and Brussels. Boarding procedures are similar to those used at airports. Check-in, security screening, customs and immigration inspections occur at the outbound station.

Auckland—a world leader in self service check-in and bag drop. Air New Zealand developed a proprietary solution to reduce bag drop time to just seconds. Self service usage went from less than 35% to more than 85%.





Concessions

Retail, Duty Free,
Food & beverage



Airlines

Check in, Boarding,
Loyalty program,
inflight sales/retail



Airports

Passenger Tracking,
Bag and RFDS,
Security, Loyalty



Government

Immigration,
ATC - flight status

DATA USERS



Surface Access Providers

Entry & exit



Customer

Personal identity token,
Bag tracking
Consumer transactions



Hotel

Check in/out tracking,
Valet services,
Transport services



Social

Facebook, Google,
Instagram



FUTURE AIRPORT EXPERIENCE

- | | | | | |
|-------------------------------------|---|---|--|--|
| 1 AIRLINE CHECK IN THROUGH WEARABLE | 4 ROBOT ATTENDANT | 7 PERSONAL VIRTUAL GUIDE | 10 PRE-BOOKED OVERHEAD BAG SPACE | 13 PERSONAL WAYFINDING FOR SPECIFIC NEEDS PASSENGERS |
| 2 BAG DROP USING PERMANENT TAGS | 5 TOUCHLESS SECURITY SCREENING ZONE | 8 VIRTUAL RETAIL WALL | 11 ON-AIRCRAFT CUSTOMS AND IMMIGRATION CLEARANCE | 14 TRANSFER PASSENGER SCREENING |
| 3 RAPID URBAN TRANSIT GROUND ACCESS | 6 ALARM FOR SECONDARY SCREENING | 9 "PINK NOISE" CANCELLING IN LOUNGE AREAS | 12 REAL TIME BAG TRACKING | 15 PRE-ORDER DRIVERLESS CAR |
| | 7 REAL TIME BIOMETRIC CONGESTION TRACKING | 11 INDIVIDUAL BOARDING ANNOUNCEMENT | | |

Graphic illustration by Innovation Arts