Sustainable Office Transformation for Future of Work

NTT Data Asia Pacific

15 Jan 2024

Summary

The NTT Data Singapore Office Integration Project, led by **NTT DATA Asia Pacific**, marks a significant shift towards a **cloud-first**, efficient workspace, we achieved a **42% cost reduction** through data center migration to Azure cloud and efficient IT asset management, integrating over **880 employees** into 3 locations. At Aperia Office, a modernized workplace, we also enhanced meeting spaces, health monitoring, and sustainability, leading to a **92%** workplace satisfaction rating.

This transition has led to a **30% reduction** in energy consumption, saving **1,000,000 KWh** per year.

Complementing our **Zero-to-Landfill** policy, we've ensured secure and responsible IT asset disposal, highlighting our commitment to sustainability.

The project also fosters a diverse and inclusive work environment, while enhancing cybersecurity with **zero-trust security and centralized IT operations.**

In Oct 2023, we were awarded *"The Asian Experience Awards 2023 Singapore Digital Experience of the Year"* and *"Technology and Singapore Employee Experience of the Year"* for our initiative of using a cloud-based strategy and providing our people with a much more innovative workplace amidst the problems encountered during the pandemic.

Overall, this initiative serves as a comprehensive model for future-proofing workplaces in terms of technology, sustainability, diversity, and security

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Background

NTT DATA Singapore's Aperia office transformation was part of a wider office integration project in APAC that involved a 3-year master plan and strategy of our Singapore-based employees from 10 offices (sites) and 6 business entities (NTT Cloud Comms, NTT Singapore, NTT APAC, NTT Group, GDC, SCoE, Emerio (ACDC), and integrated into 3 (Aperia, Ubi and Serangoon Data Center).

Technology history:

- Previous technology model was largely based on on-prem. Lots of physical servers and routers onsite.

- Network points and on-prem CUCM IPPBX with IP hard phones was used to support 80% of the workforce that is on fixed desk mode.

Challenges:

- Due to COVID and the lockdowns from 2020 to 2022, the only option was for employees to work from home, the project team took the opportunity to align and execute the final phase of the master integration strategy to design and transform the offices with a modern, alluring and relevant feel to the new expectations and workstyle of what a post pandemic office should be.

- Effectively integrate more than 880 employees to the Aperia office and a back office in Ubi without risk of overcapacity and negative impact to employee experience. This is also made possible with a new way of work policy introduced in late 2021.

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#1

The Plan, Policy and Design:

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The Plan, Policy and Design:

Global policy for our new operating model

1 City 1 Office
Office Footprint Goals

70% reduction in office sites
49% reduction in office space
sites

60% office / 40% off-site hybrid workstyle
sq feet

53% rental & operating cost reduction
annual rent & operating costs

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From 10 offices (sites) and 6 business entities:
*   NTT Cloud Comms,
*   NTT Singapore,
*   NTT APAC,
*   NTT Group,
*   GDC, SCoE,
*   Emerio (ACDC)

Integrated into 3:
*   Aperia,
*   Ubi
*   Serangoon Data Center

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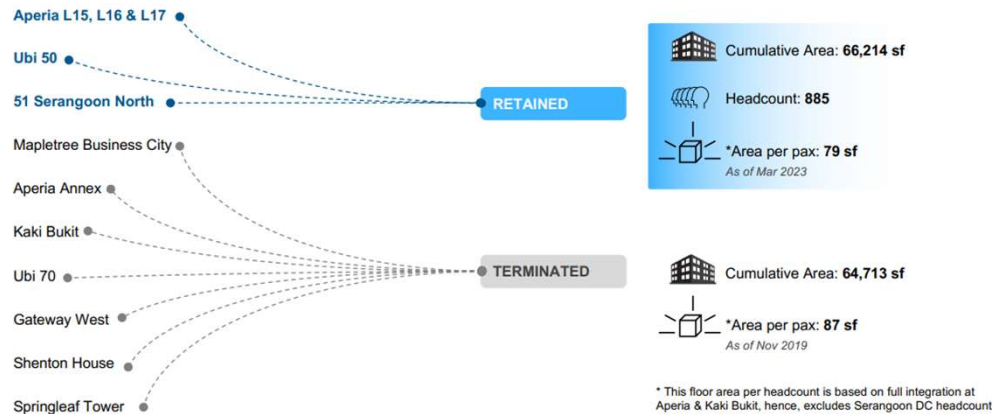# Guiding Principles for Formulating the New Workplace

PURPOSE	CULTURE	OPERATIONS	COLLABORATION	TECHNOLOGY	ENVIRONMENT
Team-focused	Inclusive and welcoming for newcomers	Paperless operations	Increase collaboration settings	Smart office showcasing NTT technology i.e. monitoring utilisation and facilities bookings etc.	Engaging and fun yet professional and corporate
Connected Future (Leading by example as a tech firm)	Creating excitement for the new workplace culture	Multi-functional spaces	Enable serendipitous engagements	Technology that enhances user experience and increases efficiencies and productivity	An optimal balance of buzz and quiet
Enhanced employee experience	Workplace as a branding asset to attract talents	Inculcate a hybrid and agile workplace model	Discussion areas	Cloud migration to net zero Azure and AWS	Maintain High Sustainability Standards i.e. renew green mark certification for Aperia
50% colleague engaged in conservation and regeneration by 2025	One million staff hours for sustainability-related volunteering by 2025	Mitigate digital fatigue from remote working	Assimilation of in-office and remote working through collaboration technology	Green data centre co-location services	Net zero emissions across our operations by 2030
Incorporate circular design to eliminate waste and carbon emissions by 2026		Reduce carbon footprints in our operations (energy saving guidelines, e-waste management programme, global travel policy)		IoT for Sustainability – New Business Venture & Innovation (NV&I)+ NTT Inc Smart World	Drive to 100% renewable energy in Data Centers by 2030
				Network Modernisation - reduction of hardware consumption	Drive to 100% renewable energy in offices and facilities by 2035

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Singapore Office Integration Plan

The new consolidated portfolio

Streamlined Portfolio

7 site reduction, 49% of area reduction

Aperia L15, L16 & L17
Ubi 50
51 Serangoon North
Mapletree Business City
Aperia Annex
Kaki Bukit
Ubi 70
Gateway West
Shenton House
Springleaf Tower

RETAINED

- Cumulative Area: 66,214 sf
- Headcount: 885
- *Area per pax: 79 sf
  As of Mar 2023

TERMINATED

- Cumulative Area: 64,713 sf
- *Area per pax: 87 sf
  As of Nov 2019

* This floor area per headcount is based on full integration at
Aperia & Kaki Bukit, hence, excludes Serangoon DC headcount
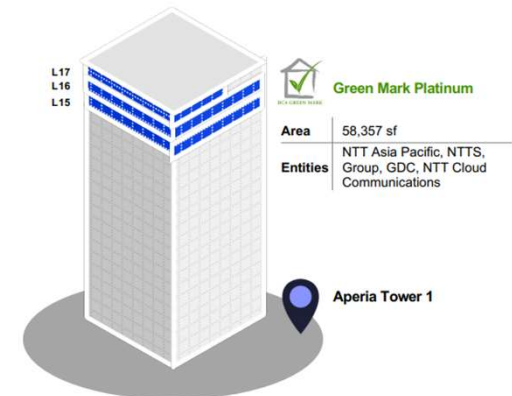
Newly Reprogrammed and Renovated Sites

- Headcount: 830
- Work Desks (assigned and agile): 881
  Catered for additional 6% growth in HC

Green Mark Certification

Area	7,858 sf
Entities	NTTS Services (Ubi)

L3
L2
L1

Ubi 50

Green Mark Platinum

L17
L16
L15

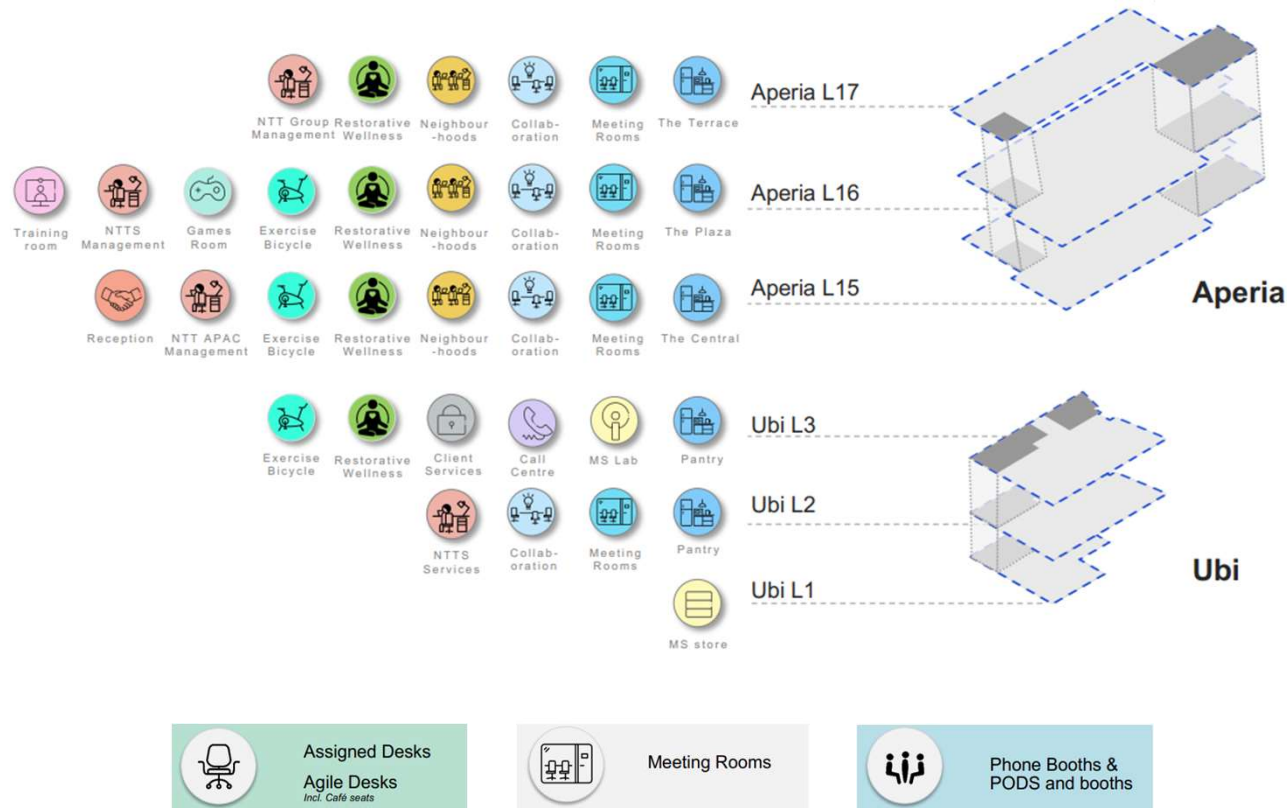| Area	58,357 sf
Entities	NTT Asia Pacific, NTTS, Group, GDC, NTT Cloud Communications

Aperia Tower 1

The New Space Arrangement

Setting a new standard for our future-proof workplace, addressing different needs and new collaborative work style. The same model can be applied to all new workplaces with different sizes for the respective zones.

Support
Amenities such as wellness rooms, IT facilities, storage, lockers, utility area etc.

Common Agile
Workstations shared between all entities

Assigned Neighbourhoods
Clusters of individual workstations for various BUs and entities

Meeting Rooms
Internal meeting rooms with different sizes

Building Facilities
Lift lobbies and other building services

Social
Alternative work points to support open collaboration and employee interactions

Visitor Area
Front-of-house meeting rooms, reception, holding area

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High level space allocation

**Instituted a new 60:40 ratio of work from office vs work from home.**

The team redesigned the office space based on the mix of roles and functions and their needs for a dedicated office space. For i.e., Finance/HR and IT whose nature is more administrative and onsite-based would require a good percentage of fixed desks compared to client-facing roles where agile seating arrangements would suffice.

Change management:

A dramatic shift to a more agile-centric design. Ratio of agile seating to fixed desk is now 85:15 compared to 20:80 prior to the transformation.

New demarcations of office space to cater for:

- **Team collaboration:** Collaborative tables with large monitors. Meeting rooms with digital whiteboard functionality. Improved room booking experience.

- **Agile workspace:** Both low and high tables with monitors that you can easily dock and connect.

- **Booths/pods:** that allow one the privacy to conduct important or confidential calls without the need to book a big meeting room.

- **Meeting resources:** Improved utilisation of meetings rooms via a more intuitive room booking system. Enhanced video meeting experience with new features that includes user-count that supports the automated detection of vacant rooms. Simplifying the video meeting experience with integration to Microsoft teams room.

- **Staff wellness:** introduction of work-exercise bicycles, a games and karaoke room and enhanced wellness rooms for user to take a break in the course of their work.
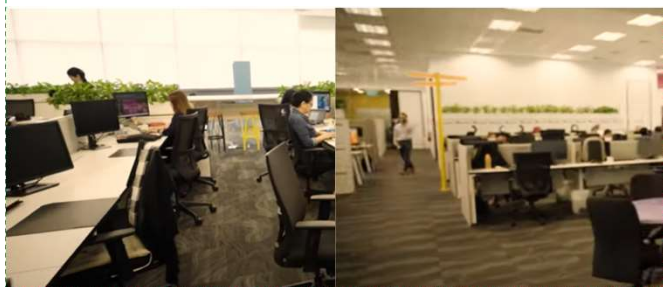
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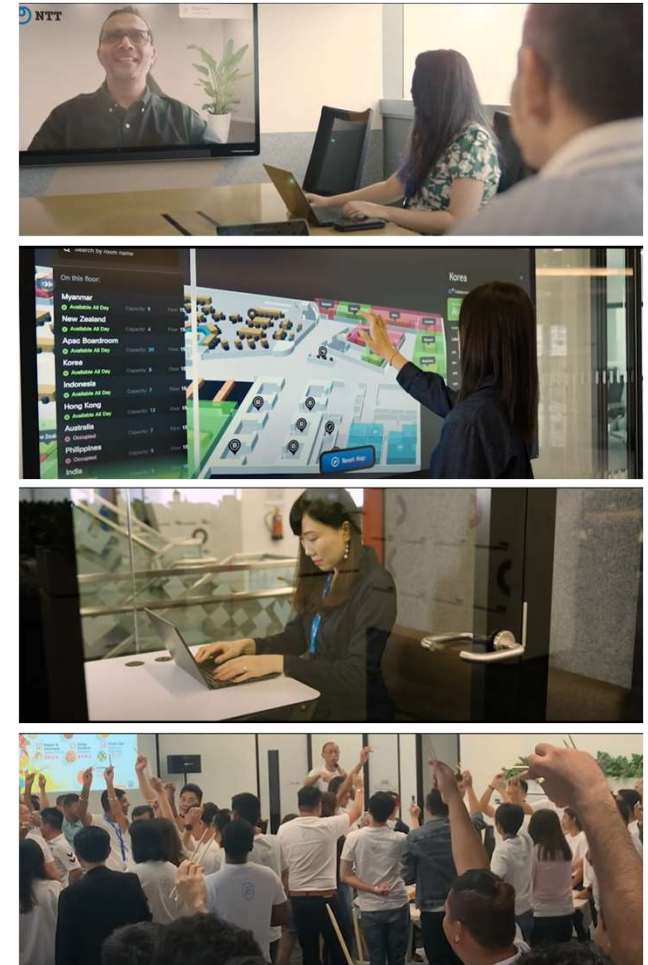
Sustainability Outcomes

Furniture Reuse & Recycle

Reused Recycled Relocated & Modified

65% of the office furniture were reused, recycled, relocated and modified where necessary instead of procuring new furniture.


Energy Saving

Only green mark approved lightings and air-conditioning with motion detecting sensors are selected for all meeting rooms and pocket auxiliary spaces for those who work late and when building central aircon shuts off at 6pm daily.

- Office lightings are also programmed to switch off by 7pm daily and one can operate the hourly function if they are still in the office. This is designed in zones to further save on electricity.

- Duplex printing as default in all printers, **50%** savings.

- Default printing in draft mode, **30%** savings on printing cartridges

The location of **auxiliary air conditioning** is marked **purple** in the layouts below. This can be switched on after office hours and is operational on an hourly basis.
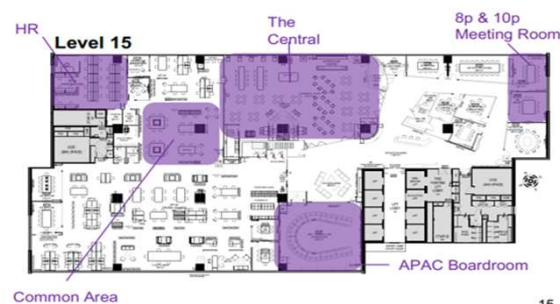
Employee Health & Well-being

Implemented staff wellness programs in the office after people return from the pandemic to improve employee morale and well-being.

- Clean Desk policy in the office after people return to work post-pandemic offers several benefits, including maintaining a hygienic and desirable condition of the office. This policy not only enhances the security of files and belongings but also contributes to an improved user experience in the workplace.

- Introduction of work-exercise bicycles, a games and karaoke room and enhanced wellness rooms for user to take a break in the course of their work.

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#2
Digital Workplace Plan

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Digital Workplace Plan: focus on productivity, UX and Optimization

A digital workplace plan based on 5 key pillars with a focus on improving and optimising user experience and driving productivity is central to the technology aspects of the Aperia office transformation.
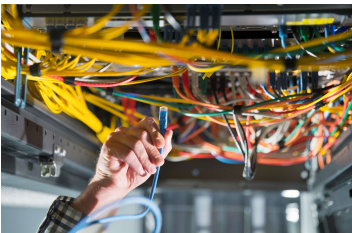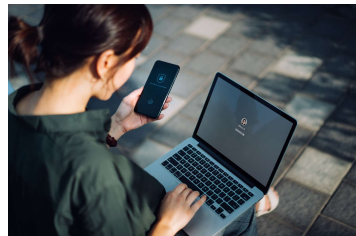

1 Intelligent Network
Strong backend network and seamless access with monitoring
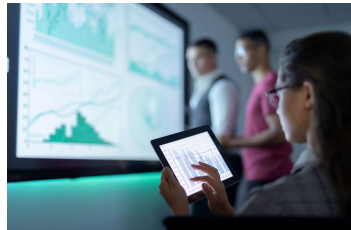
2 Bandwidth Premium
Dedicated internet bandwidth with end-to-end QoS

3 Data Analysis IoT & Optimization
Continue improve of the workplace

4 Voice & VDO Collaboration
Hybrid collaboration from office, homes and public places

5 Connect Workspace
Coworking space and collaboration tools for internal and external employees

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① Intelligent Network
Strong backend network and seamless access with monitoring

Network is backbone for the Digital workplace solutions for the consistent performance and proactive monitoring.

We have planned with simplified infrastructure and centrally managed cloud platform with automation.

This is based on the **Cisco Merkai** with new **WiFi6e** capabilities that helps to improve the network performance in the workplace.

- Migrated on-prem applications to the **Azure cloud**.
- Deployed **Meraki cloud solution.**
- Monitor AP, bandwidth utilisation and QoS.
- **Cisco ISE** for security. Device security. **JAMS** for endpoint management.
- **SPLUNK**: for network management URI. Network traffic monitoring

② Bandwidth Premium
Dedicated internet bandwidth with end-to-end QoS

Premium dedicated internet bandwidth with end-to-end Qos.

For Digital workplace solutions, it is important to have centralized solution which is based on **SaaS model** with intention to reduce the on-prem footprint and faster adoption in the countries with minimum infrastructure.

The Bandwidth plays the key role on the SaaS model, and it must be dedicated and premium internet bandwidth with **high SLA.** We are leveraging our **own NTT Internet circuits in all available locations.**

Using our **own SD-WAN platform**. Currently Cisco based but moving to **Silverpeak**.

③ Data Analysis IoT & Optimization
Continue improve of the workplace

It's the continuous improvement of the life cycle in the workplace with Analysis of the utilization, consumption, performance, and feedback. One of the biggest challenges in the MNC company is the central visibility of all the office workplaces. The solutions that we are putting together with our vendors is to provide the **good central reporting for the optimization and sustainability.** This is also continuous learning cycles for us on how to keep on improve the workplace for our employees.

Continue improvement of the workplace. Data to capture such as:
- Occupancy
- Air quality, temp, humidity.
- Network performance: Internet and hotspot availability (part of continued optimisation)

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4

Voice & VDO Collaboration
Hybrid collaboration from office, homes and public places

Hybrid collaboration experience from office, home and public places. As the **covid-19 pandemic** changed the working environment and we have noticed the focus needed on the hybrid collaboration. We have decided to move away from **traditional PSTN** to **MS Teams PSTN** which works well for employee to use it from anywhere and any devices.

Video collaboration plays key roles in the hybrid collaboration especially for remote team meetings, workshop, partner events and customer meetings. The solution is implemented with Cisco and other technologies based on the**Microsoft Teams Room (MTR)** meeting room size and requirements. It helps to connects seamlessly with Teams, Cisco, Google and Zoom meetings used by the various customers and partners.

- Microsoft PSTN. Teams adoption. Removed all network points.
- Singapore office **had 1000 DID**. Now **reduced to 200 DID**.
- **Decommissioned 5 ISDN** lines from 6.
- Video rooms using Cisco for their high-end cameras and endpoints but connecting to MS Teams
- MS teams is the defacto collaboration and meetings tool deployed across the workforce.

5

Connect Workspace
Coworking space and collaboration tools for internal and external employees

We have focused on the **"Smart office"** with integrated technology to connect with various workspace for the seamless access and provide the information incl. Wayfinding, Booking, Occupancy & Environmental monitoring. **Cisco Spaces** is the solution that helps on this area. It's also added value to Sustainability on the reporting and further optimization of the office spaces with automation and IoT devices.

We also focused on the collaboration tool for the employee which is very much required to use the workplace in most effective way includes hot desk, meeting room booking & VMS. This may vary for the organization with their business models, working culture and prioritization. It also important to consider the employee feedback when putting the solution in the workplaces to understand the pain points and address those gaps.

- **MAPIQ** for workspace management. Time resource management.
- **Konica cloud printing**. Connect to the closest connected printer regardless of which country you are in.
- **Digital signage** for welcoming new hires, announcing work anniversaries, etc. (**Appspace**)
- **Visitor management system**: (**ProxyClick**)
- **Meeting room booking system**: (**Nexlabs**)

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Sustainability Outcomes

Energy saving through Cloud Modernization

Singapore Data Centre decommission and migration to Azure
- Multi-phase project to decommission multiple racks in the Singapore data centre.
- Consisted of a Physical to virtual on-prem migration and virtual workload migration to Azure
- Power reduction achieved via the virtualization and migration to cloud
- Power energy savings achieved of **1,000,000 Khw/Year**
- Power cost savings achieved of **$300k USD/Year**

IT Asset Disposition (ITAD)

IT asset disposal management ensured compliance risk free and avoid data breaches, regulatory non-compliance, and reputational damage. Data Security safeguarding sensitive data throughout the IT asset lifecycle, including at disposal. We managed via an outsourced partner the asset inventory, data sanitization, and overseeing the ITAD process.

Optimize Space Utilization and CO_2 footprint

Cisco hardware can act as sensors for occupancy, air quality, temperature, humidity and more. The data and insights companies gain from Cisco Spaces, can help identify and optimize energy inefficiencies and make informed decisions to reduce real estate carbon footprint too. Meraki smart cameras – to reduce truck rolls, meaning less reasons for IT/engineers to travel to site etc.
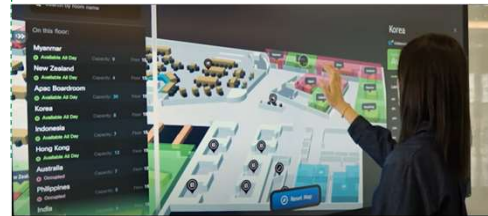
Health and Safety measures

After COVID-19 pandemic, the employees are more concern about their health when working from office and it is important to keep the workplaces clean with information shared like air quality, temperature, humidity and occupancy levels of the working environments.

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The Singapore Office Integration Project serves as a visionary model for addressing several critical issues in the future.

The transition to a cloud-first approach and intelligent network integration demonstrates a more agile and cost-efficient workspace strategy, which can be vital for companies aiming to adapt to rapidly evolving work environments.

The emphasis on sustainability, including reusing furniture and practicing Facilities Management (FM) sustainability, sets an example for environmentally responsible corporate practices. This can inspire other organizations to prioritize sustainability, reducing their ecological footprint.

The commitment to diversity and inclusion in office design promotes a more inclusive and equitable work culture, a key aspiration for companies striving for social responsibility and equal opportunities.

Incorporating zero-trust security and centralized IT operations showcases advanced cybersecurity practices, essential in an era of increasing digital threats and remote work.

This initiative demonstrates a holistic approach to future-proofing workplaces, addressing technology, sustainability, diversity, and security concerns – a valuable blueprint for organizations navigating the challenges of the future.

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Reference

[NTT DATA Inc. bags the Digital Experience and Employee Experience of the Year awards | Asian Business Review](#)

[NTT's intelligent workplace gets thumbs-up from employees | NTT (global.ntt)](#)

[Why app rationalization matters in the multicloud era (global.ntt)](#)

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