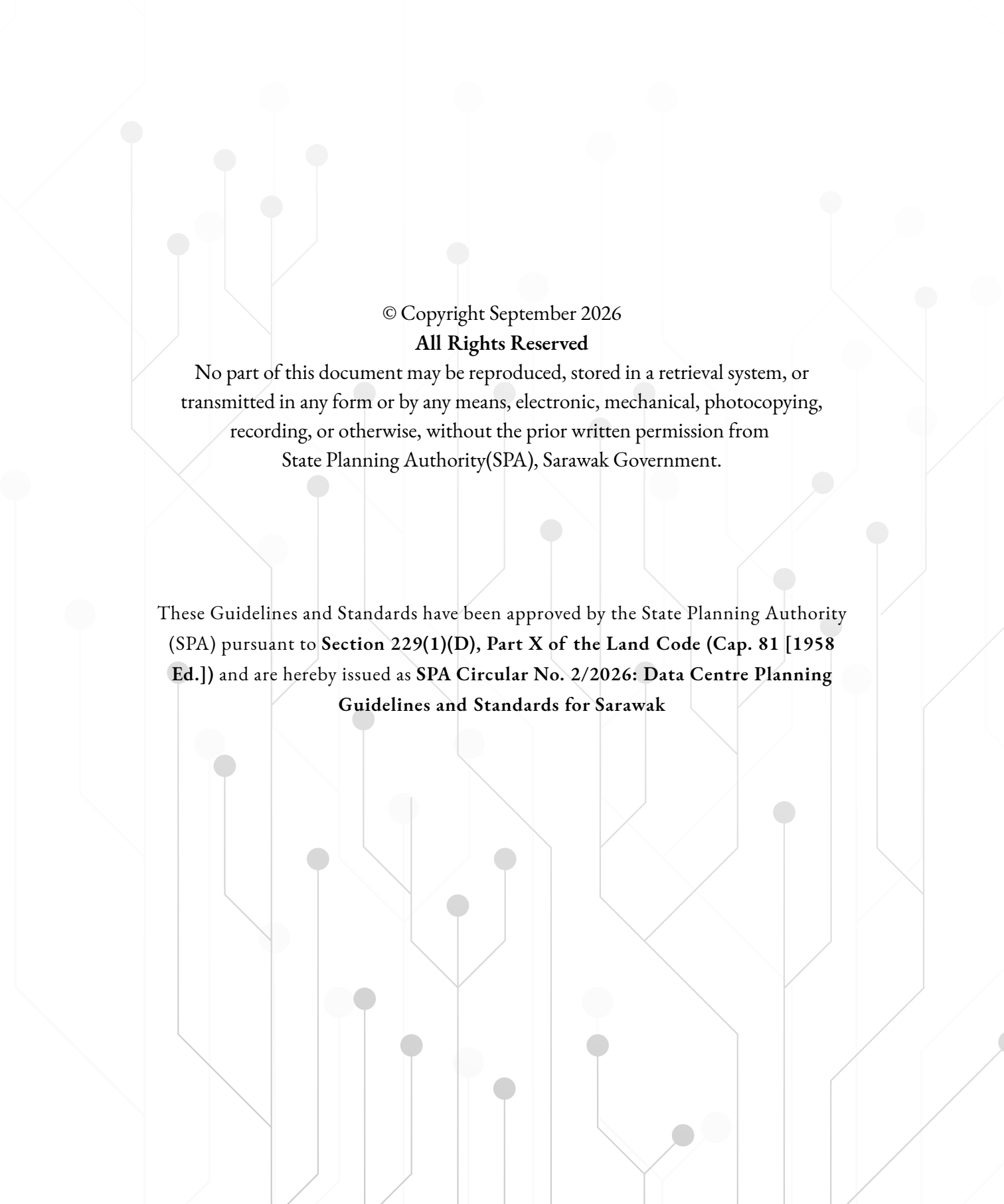


DATA CENTRE

PLANNING GUIDELINES &
STANDARDS FOR SARAWAK



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These Guidelines and Standards have been approved by the State Planning Authority (SPA) pursuant to **Section 229(1)(D), Part X of the Land Code (Cap. 81 [1958 Ed.])** and are hereby issued as **SPA Circular No. 2/2026: Data Centre Planning Guidelines and Standards for Sarawak**



Prepared by ;

Policy, Research and Legislation Section,
Urban and Country Planning Division

MINISTRY OF NATURAL RESOURCES AND URBAN DEVELOPMENT (MUDeNR)

3, 5, 7-9, 15 & 16th Floor, Wisma Sumber Alam, Jalan Stadium, Petra Jaya,
93050 Kuching, Sarawak

Telephone : 082-313811/082-313823

Fax : 082-313810

Web Site : <https://www.mudenr.sarawak.gov.my>

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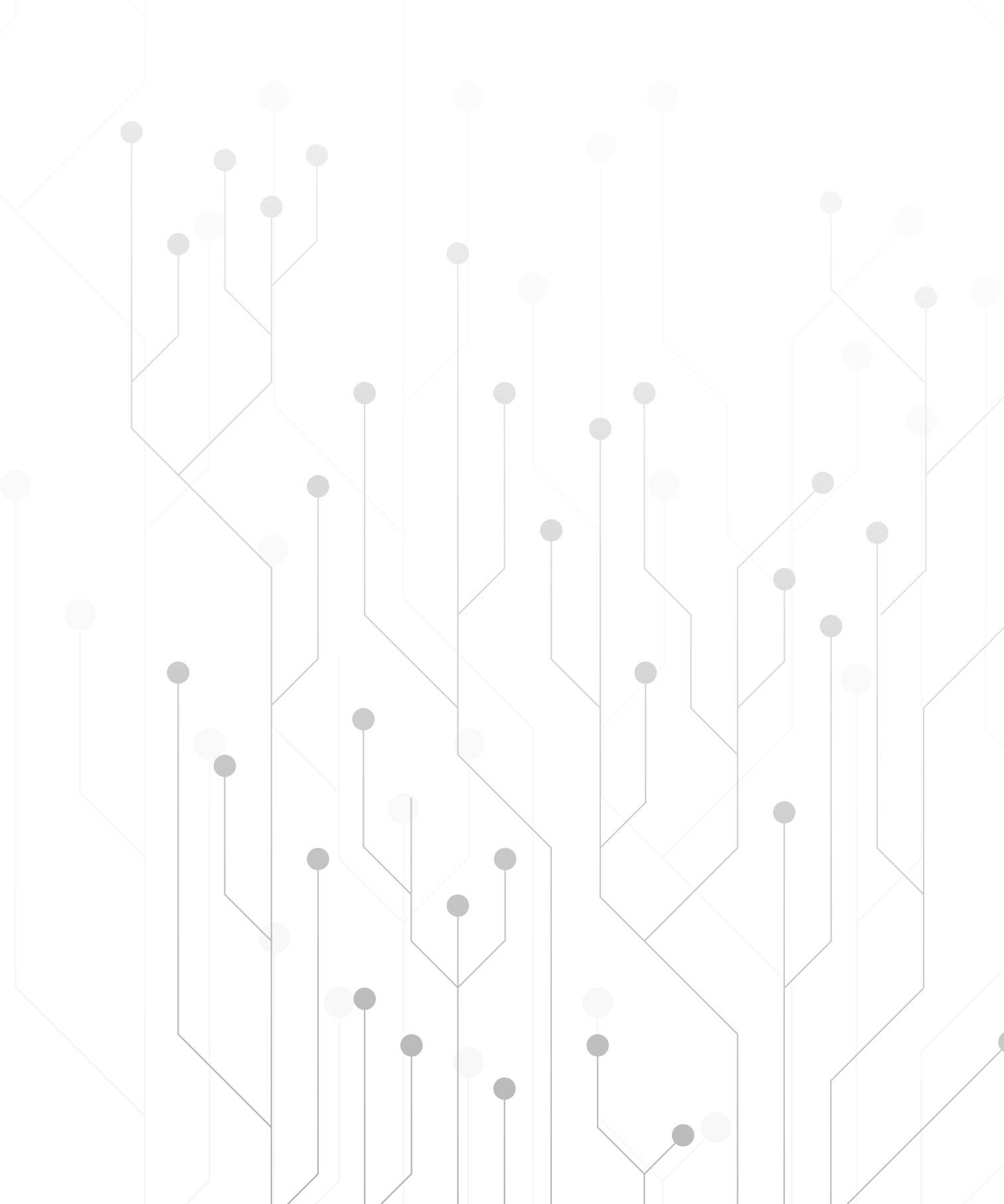
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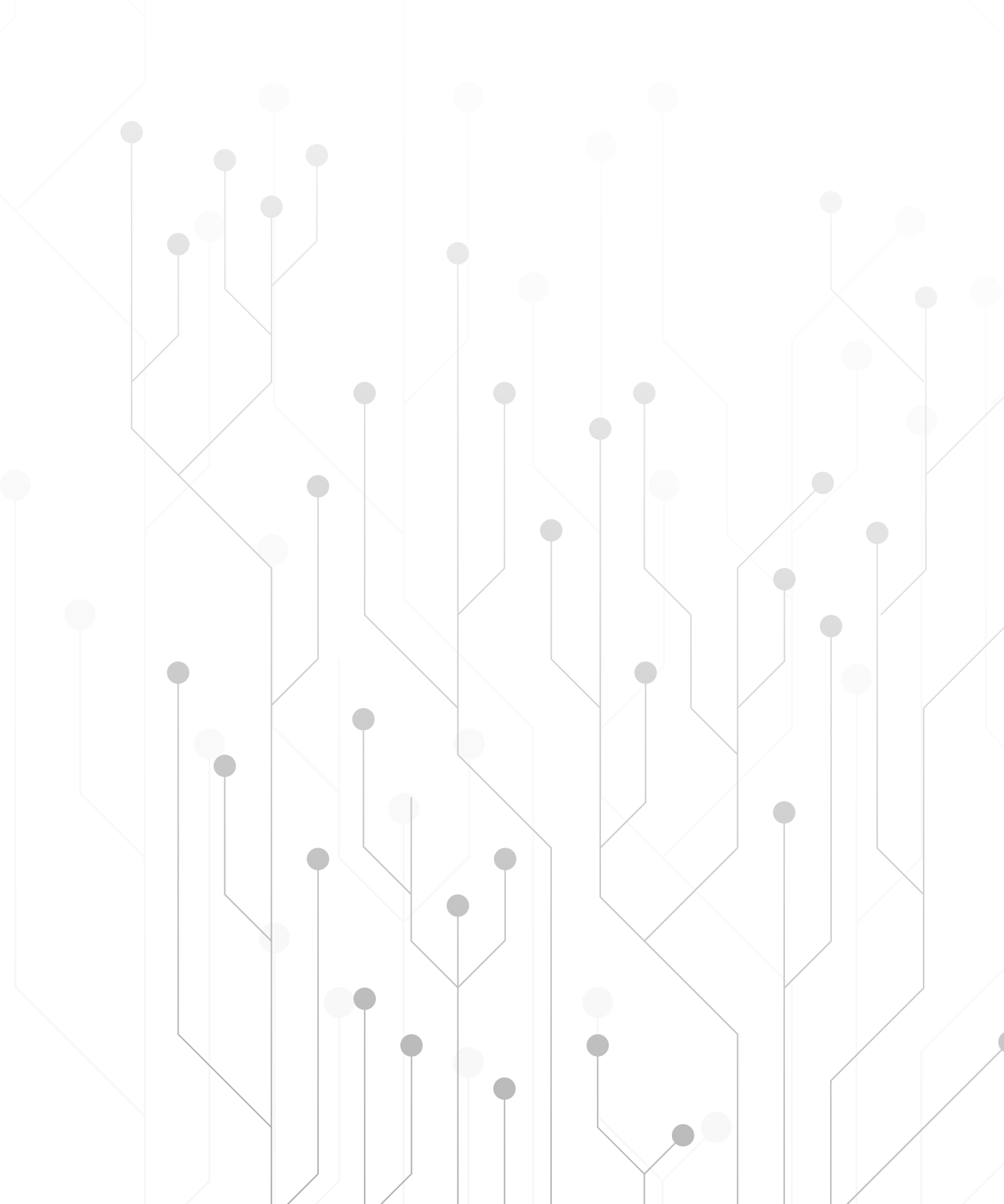
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1.0 INTRODUCTION







1.0 INTRODUCTION

The development of data centres has emerged as a critical component in supporting the rapid expansion of the digital economy, driven by advancements in Industrial Revolution 4.0 (IR4.0) technologies, including Artificial Intelligence (AI), cloud computing, big data analytics, the Internet of Things (IoT), and high-performance computing (HPC). As governments and industries increasingly rely on digital infrastructure, data centres have become essential assets for enabling digital transformation, supporting economic competitiveness, and ensuring secure and reliable digital services.

In Sarawak, the strategic development of data centres is aligned with the State Government's aspiration to position Sarawak as a leading regional digital economy and innovation hub through the provision of resilient, sustainable, and investment-ready digital infrastructure.

Data centres play a strategic role as enabling infrastructure for digital services, supporting government digitalisation initiatives, smart city development, and private sector innovation. The increasing demand for data processing, storage, and connectivity has positioned data centres as a key investment sector capable of attracting both domestic and international investors.

In the context of Sarawak, the State Government has emphasised digital economy growth through initiatives led by the Sarawak Digital Economy Blueprint 2030 supported by strong institutional frameworks. The development of data centres must therefore be guided by a comprehensive planning guideline and standard that ensures efficient land use, environmental sustainability, infrastructure readiness, and regulatory compliance.

1.1 Purpose

This guideline is prepared to serve as a **comprehensive reference for the State Planning Authority (SPA), Local Authorities, State Agencies, Technical Departments, as well as industry players and stakeholders** involved in the planning, assessment, and monitoring of data centre developments in Sarawak. It aims to ensure that all proposed data centre developments are systematically planned, efficiently implemented, and aligned with Sarawak's digital transformation agenda, while complying with relevant legal and planning requirements.

These Guidelines establish the **minimum planning requirements for data centre development** in Sarawak. Depending on the nature, scale, location, and operational characteristics of a proposal, the State Planning Authority (SPA) may require additional technical studies or impose further planning conditions where necessary to safeguard public interest, planning integrity, and sustainable development.

1.2 Objectives

The objectives of this guideline are as follows:

- To provide clear guidance on planning requirements and development standards for data centre development in Sarawak.
- To assist the State Planning Authority (SPA) and Local Authorities in evaluating planning applications related to data centres.
- To ensure that data centre developments are aligned with **PCDS 2030, Sarawak Digital Economy Blueprint 2030** and other state policies.
- To promote sustainable, resilient, and energy-efficient data centre developments.
- To facilitate investment by providing clear and transparent planning requirements.





1.3 Importance and Need For Data Centre Development In Sarawak

The development of data centres in Sarawak is increasingly critical in meeting the rising demand for digital infrastructure driven by rapid technological advancement and the expansion of the digital economy. Globally and within Malaysia, the growth of hyperscale and enterprise data centres reflects the increasing reliance on cloud computing, big data, and digital platforms. Sarawak is strategically well-positioned to capitalise on this trend, supported by its abundant and reliable renewable energy resources, particularly hydropower, which enables the development of green and low-carbon data centres in line with the Environmental Sustainability pillar of PCDS 2030. In addition, Sarawak's strategic location within ASEAN enhances its potential to function as a regional data hub for Borneo and neighbouring regions, further strengthened by ongoing investments in digital infrastructure, fibre connectivity, and smart city initiatives.

Beyond its strategic advantages, data centre development offers significant economic benefits to the state, including the creation of high-skilled employment opportunities, attraction of foreign direct investment (FDI), and stimulation of supporting industries such as telecommunications, construction, energy, and digital services. These developments contribute directly to the state's Gross Domestic Product (GDP) and support Sarawak's transition towards a knowledge-based and innovation-driven economy. Therefore, the planned and well-regulated development of data centres is essential to ensure balanced growth, optimise infrastructure utilisation, and uphold environmental sustainability in line with Sarawak's long-term development agenda.

1.4 General Characteristics of Data Centres

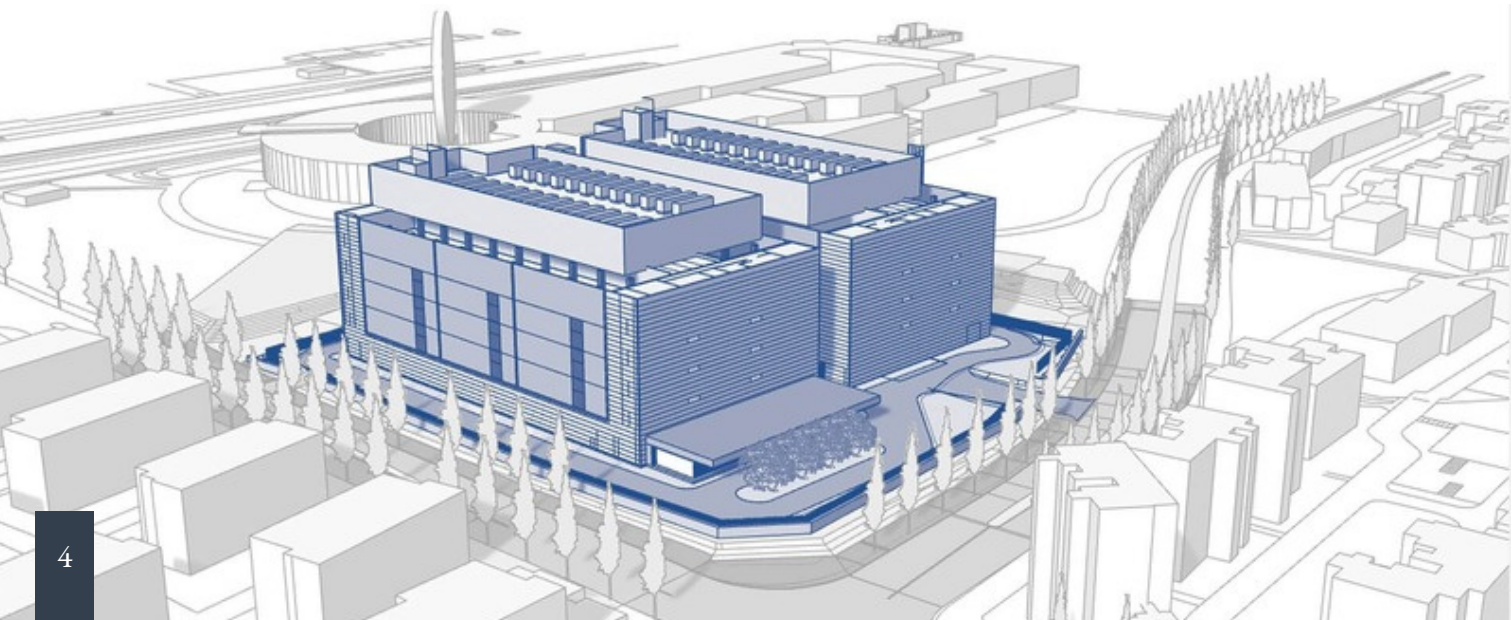
Data centres generally comprise five (5) key components which are essential to ensure efficient, secure, and continuous operations. These components shall be considered in the planning, design, and evaluation of data centre developments in Sarawak.

1.4.1 Security

Data centres shall be designed with comprehensive security measures to safeguard against both physical and cyber threats, including unauthorised access, theft, fire incidents, and cyberattacks. **Access to data centre facilities shall be strictly restricted to authorised personnel only, supported by multi-layered security systems.** Such measures shall include, but are not limited to, biometric authentication systems, access control systems, surveillance cameras (CCTV), and real-time monitoring systems. Security planning shall comply with relevant national standards and best practices to ensure the protection of critical digital infrastructure.

1.4.2 Infrastructure

Data centre infrastructure comprises **multiple integrated systems, including servers, storage systems, networking systems, power supply systems, and cooling systems.** These components are essential to support high-performance computing and continuous data processing operations. **Data centres require substantial and reliable power supply to operate efficiently.** As such, developments shall incorporate redundancy measures such as backup generators, Uninterruptible Power Supply (UPS), and dedicated power systems. In addition, **efficient cooling systems are critical to prevent overheating of IT equipment** therefore, dedicated cooling solutions such as precision cooling or advanced cooling technologies shall be provided to ensure operational stability.



1.4.3 Services

Data centres provide a wide range of digital services, including **data storage, data management, backup, and recovery services**. These services support various applications such as email systems, high-volume e-commerce transactions, enterprise systems, and online platforms. In line with the advancement of IR4.0 technologies, **data centres also support emerging digital applications including big data analytics, machine learning, artificial intelligence (AI), and other data-driven services**. As such, data centres are critical infrastructure in supporting digital transformation initiatives in Sarawak.

1.4.4 Cloud Storage and Exchange

Cloud storage and exchange refer to **digital storage platforms that enable users to store, manage, and access data remotely through virtual servers hosted within data centres**. These systems facilitate efficient data sharing, scalability, and real-time accessibility. The implementation of cloud-based systems enhances operational efficiency and provides secure, flexible, and scalable data management solutions. **Data centre developments shall therefore be designed to support cloud infrastructure, ensuring high availability, redundancy, and data security.**



1.4.5 Management

Effective management of data centres requires specialised expertise, technical knowledge, and adherence to best operational practices to ensure efficiency, reliability, and security. Proper management structures shall be established to oversee daily operations, maintenance, and performance monitoring of data centre facilities. In the context of data centre development, three (3) common management models are recognised:-

i. Operating Company (OpCo)

An entity responsible for managing and operating the data centre facility. The Operating Company may lease the facility from the building owner and is responsible for day-to-day operations, including securing tenants and ensuring service delivery.

ii. Property Company (PropCo)

An entity that develops, owns, and leases the data centre facility to an Operating Company. The Property Company is generally not involved in the daily operations of the data centre.

iii. Integrated Model (OpCo & PropCo)

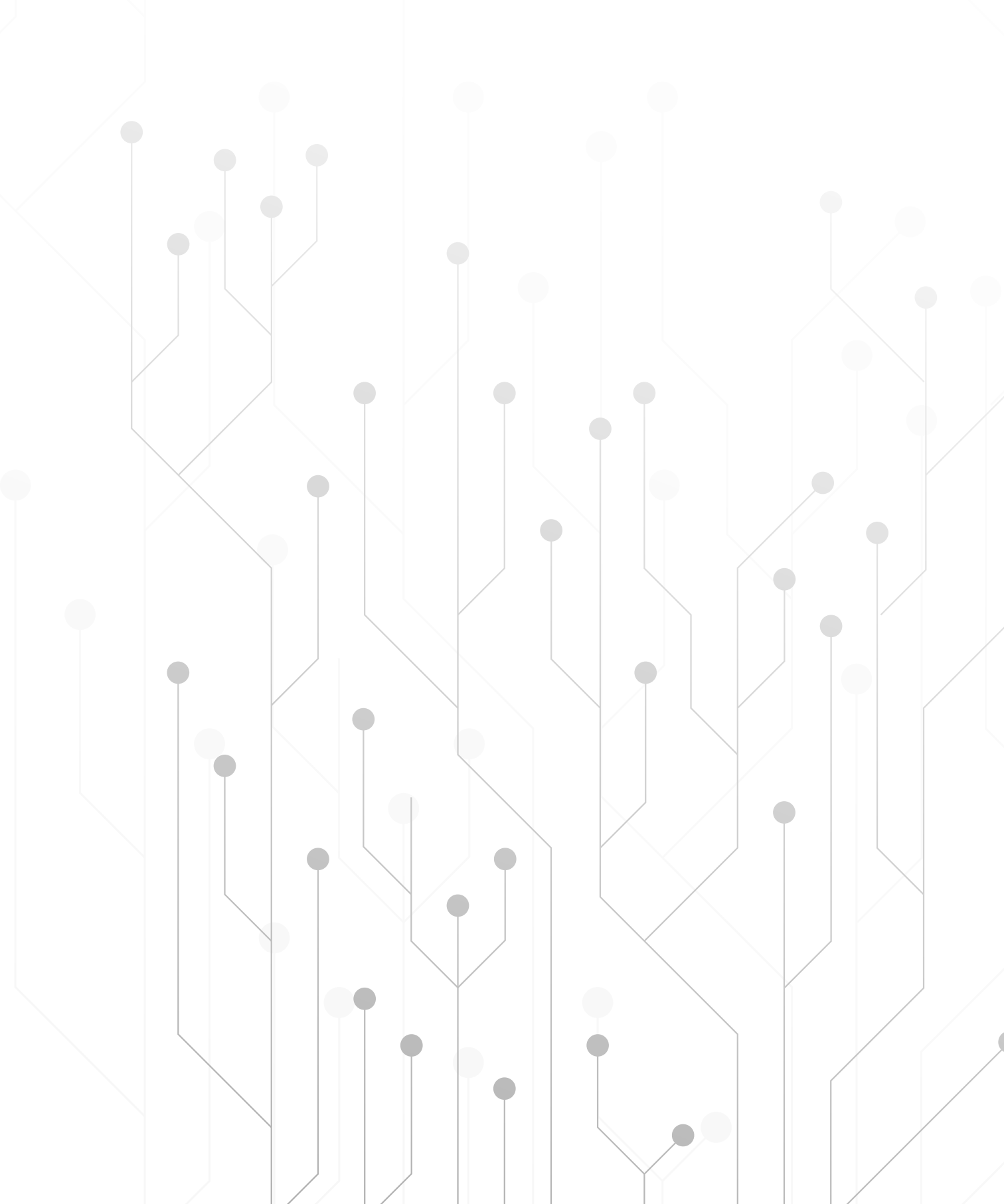
An entity that both develops and operates the data centre facility. Under this model, the same company assumes responsibility for ownership, management, and operational functions of the data centre.





2.0 INTERPRETATION





2.0 INTERPRETATION

This section provides a detailed explanation on the definitions, concepts, and key components of the data centre industry, to ensure a common understanding among planning authorities, technical agencies, and industry stakeholders in Sarawak.

2.1 Definition of Data Centre

A data centre refers to a building or physical facility used to house computer systems, servers, storage systems, and associated components such as telecommunications and networking equipment for the purpose of storing, processing, managing, and disseminating data. This definition is aligned with internationally recognised standards and national regulatory references, namely:

ANSI/TIA-942 (Telecommunications Infrastructure Standard for Data Centers)

- defines a data centre as a **building or portion of a building whose primary function is to house a computer room and its support areas.**

Malaysian Communications and Multimedia Commission (MCMC), Malaysia

- Recognises **data centres as critical digital infrastructure that supports communications networks, cloud computing, data processing, and the overall digital economy ecosystem in Malaysia.**

In the context of Sarawak, **a data centre shall be regarded as critical infrastructure that supports the state's digital economy, government digital services, and private sector operations.** Accordingly, all data centre developments shall be subject to planning control under the Sarawak Land Code (Cap. 81) and shall comply with the Development Control Standards (DCS), as well as relevant guidelines issued by the State Planning Authority (SPA).

Therefore, for planning purposes, a development with an **installed electrical capacity of 1.0 MVA / 0.85 MW or above (or equivalent IT load capacity)** and if its computer room whitespace and its directly supporting mechanical, electrical, and cooling plant areas collectively **exceed 50% of the building's total Gross Floor Area (GFA)** dedicated to Data Centre operations shall be regarded as a Data Centre under these Guidelines.

2.2 Data Centre Ecosystem

The concept of a data centre ecosystem is illustrated in the diagram below, which demonstrates the flow of data through interconnected digital infrastructure. The ecosystem consists of three (3) main stages:

Data Transmission

- Data generated by users is transmitted through telecommunication infrastructure such as mobile networks, fibre optics, and communication towers.

Data Processing

- The transmitted data is delivered to the data centre where it is stored, aggregated, processed, and managed.

Data Reception

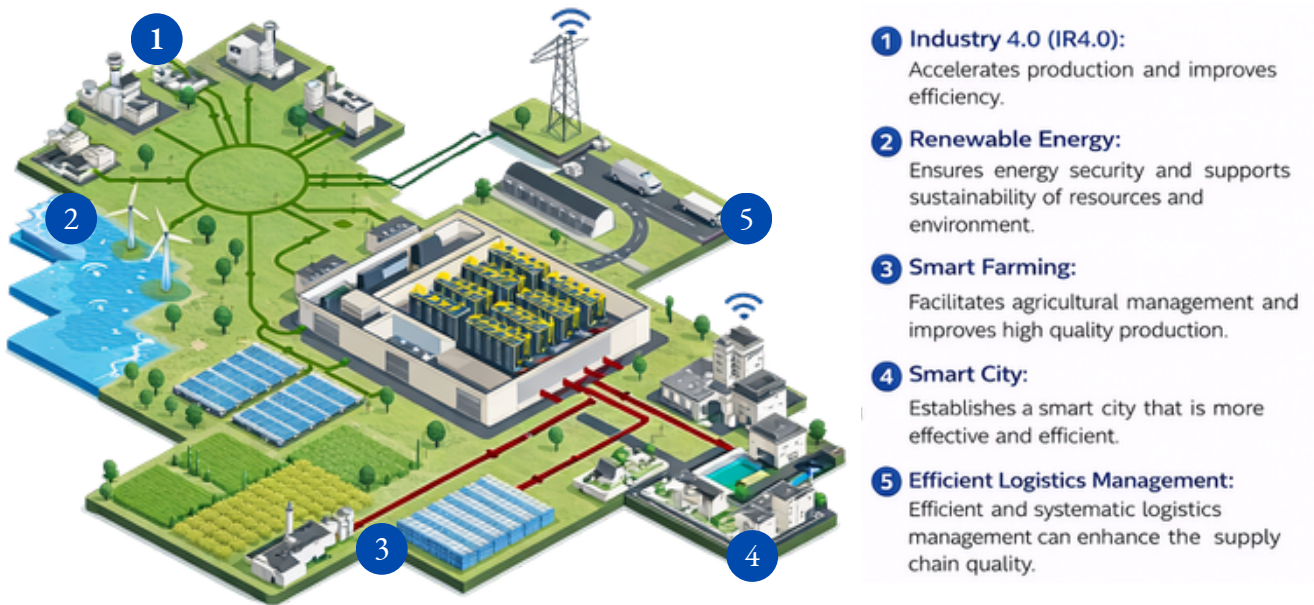
- Processed data is then transmitted back to users or systems, enabling access to digital services and applications.



User A in Country A - Telco Networks : Sends data and information from an individual device to the main data center
Telco Networks - Main Data Center : Data and information is sent to the main data center to be stored, processed, and distribute
Main Data Center - User in Country B : Data that has been processed is sent to User B

Figure 1 : Data Centre Ecosystem

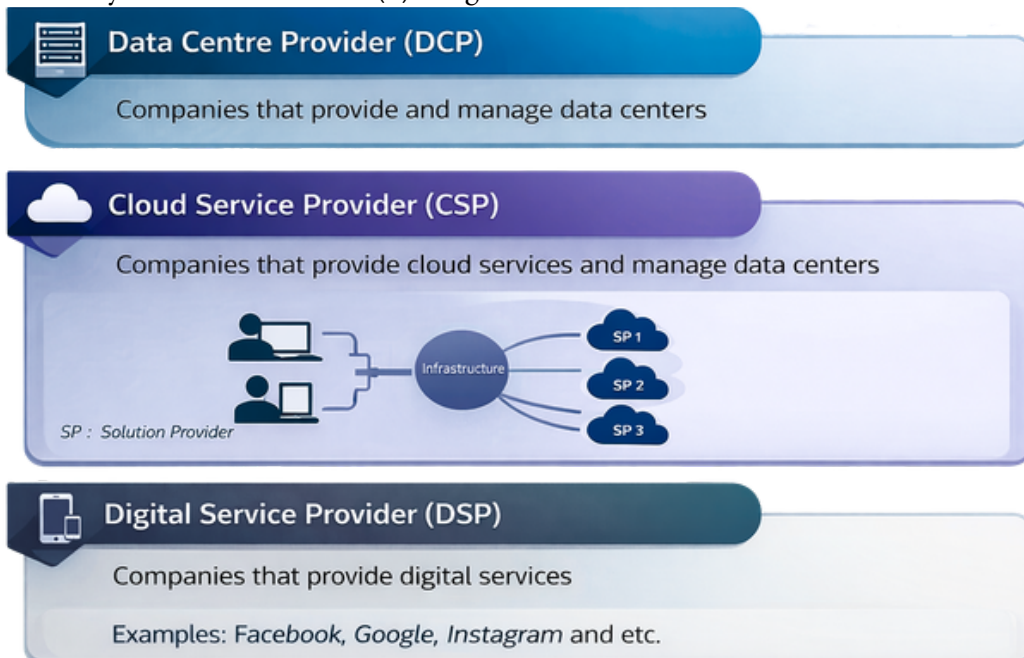
Figure 2 : The Role of Data Centres in Urban Areas



Source : <https://www.datacenterdynamics.com>

2.3 Data Centre Industry Player

The data centre industry is divided into three (3) categories:-



2.4 Types Of Data Centres

Data centres are generally classified into three (3) primary types based on their operational function and business model, namely Enterprise, Colocation and Hyperscale. For the purpose of these Guidelines, only Colocation and Hyperscale Data Centres shall be considered for development in Sarawak, subject to the strategic locations and applicable planning and development requirements determined by the State Government. These classifications are intended to guide land use suitability, infrastructure provision and development control for data centre developments in Sarawak.

2.4.1 Enterprise Data Centre (Dedicated / In-House)

An Enterprise Data Centre is a facility developed and operated by an organisation for its own internal use, either on-premise or off-premise. It is fully managed by the organisation and supports internal operations such as data storage, enterprise systems, and business applications. In Sarawak, this type is generally smaller in scale and strictly for own internal use within the institutional and industrial developments, subject to compliance with Development Control Standards (DCS Sarawak).



2.4.1 Colocation Data Centre

A Colocation Data Centre is a **shared facility that provides space, infrastructure, and services such as power, cooling, connectivity, and security for multiple tenants to house their IT equipment.** Services are typically offered in the form of racks, cages, or suites. In Sarawak, colocation facilities are encouraged in industrial zones, digital hubs, and strategic growth areas with adequate infrastructure, supporting business digitalisation and regional competitiveness.



2.4.2 Hyperscale Data Centre

A Hyperscale Data Centre is a **large-scale facility designed to support high-volume data processing, storage, and cloud computing, typically operated by global technology companies. It requires significant land, high and reliable power supply, advanced cooling systems, and strong network connectivity.** In Sarawak, hyperscale developments are considered strategic investments and should be located in areas with access to renewable energy, major infrastructure, and sufficient buffer zones, contributing to economic growth and digital development in line with PCDS 2030.



2.5 Data Center Classification

The Data Centre Tier classification adopted under these Guidelines is based on the **ANSI/TIA-942 Telecommunications Infrastructure Standard for Data Centres**, which classifies data centre facilities according to the level of infrastructure redundancy, reliability, resilience and operational availability. The Tier classification provides a consistent technical reference for assessing the infrastructure requirements and resilience of data centre developments in Sarawak. The following table outlines the key characteristics of each data center tier:

Table 1 : Data Centre Tier of Classification

Tier	Classification	Infrastructure Characteristics	Downtime / Uptime
Tier I	BASIC SITE INFRASTRUCTURE	• Single-capacity components for all data centre systems (non-redundant) • Single path for power and cooling systems (no backup path) • Non-redundant components (N) for electrical supply and cooling systems • Basic infrastructure with limited fault tolerance	Downtime: 28.8 hours/year Uptime: >99.671% Availability: Excellent
Tier II	REDUNDANT COMPONENT SITE INFRASTRUCTURE	• Single path for power and cooling systems • Redundant components (N+1) for critical systems • Equipped with Uninterruptible Power Supply (UPS) and backup generator • Raised floor system for cable management and cooling distribution • Improved reliability compared to Tier I	Downtime: 22 hours/year Uptime: >99.741% Availability: Excellent

Tier	Classification	Infrastructure Characteristics	Downtime / Uptime
Tier III	CONCURRENTLY MAINTAINABLE SITE INFRASTRUCTURE	- Fully redundant (N+1) for all critical systems - Multiple independent power and cooling distribution paths - Equipped with multiple power sources, UPS systems, and backup generators - Raised floor system for efficient cooling and infrastructure management - Allows maintenance without shutting down operations	Downtime: 1.6 hours/year Uptime: >99.982% Availability: Very High
Tier IV	FAULT-TOLERANT SITE INFRASTRUCTURE	- Fault-tolerant infrastructure with full redundancy (2N or 2N+1) - Independent and physically separated power and cooling systems - Continuous operation even in the event of component failure - Highest level of reliability and availability - Advanced infrastructure supporting mission-critical operations	Downtime: 0.4 hours/year Uptime: >99.995% Availability: Highest Availability

Notes:-

- Downtime:** The period during which a data center experiences disruption or is not operational.
- Uptime:** The period during which a data center operates optimally without interruption.
- N:** The minimum required capacity for power and cooling needed for a data center to operate.
- N+1:** The required capacity plus one additional (backup) component to ensure redundancy and reliability.

2.6 Components Within A Data Centre Building

A data centre comprises multiple integrated components that function collectively to ensure reliable, secure, and efficient operations. In the context of Sarawak, these components shall be planned in accordance with development control standards, infrastructure readiness, and resilience requirements aligned with PCDS 2030 and the State's digital economy agenda. There are **ten (10) primary components** in a data centre building, as outlined below:

1. Computing Infrastructure Requirements

This includes all core computing equipment such as servers, storage systems, racks, and associated hardware required to support data processing and digital services. These systems form the backbone of data centre operations.

2. Network Infrastructure

This comprises networking equipment such as routers, switches, modems, and structured cabling systems. It enables connectivity between servers, storage systems, and end users, ensuring seamless data transmission within and outside the data centre.

3. Uninterruptible Power Supply (UPS)

The Uninterruptible Power Supply (UPS) system provides immediate backup power to critical equipment in the event of electrical supply disruption. It ensures continuity of operations during short-term outages before secondary backup systems are activated.

4. Cooling / Chiller System

This system maintains optimal temperature and humidity levels within the data centre environment. It includes cooling units, chillers, and Computer Room Air Conditioning (CRAC) or Computer Room Air Handling (CRAH) systems to prevent overheating and ensure equipment longevity.

5. Power Distribution Unit (PDU)

The Power Distribution Unit (PDU) is responsible for distributing electrical power to servers and other equipment within the data centre. It ensures stable and controlled power delivery across all systems.

6. Emergency Power Generator (EPG)

The Emergency Power Generator (EPG), typically powered by diesel or alternative fuels, serves as a secondary backup power source. It ensures continuous operations during prolonged power outages.

7. Security Requirements

Data centres must incorporate comprehensive physical and digital security systems, including:

- Closed-Circuit Television (CCTV)
- Biometric access control systems
- Mantrap entry systems
- Fire detection and suppression systems
- Security control rooms and guard posts

These measures are essential to safeguard critical infrastructure and sensitive data.

8. Meet-Me Room (MMR)

The Meet-Me Room (MMR) is a dedicated space where telecommunications providers interconnect. It houses fibre optic cables and network connections, facilitating data exchange between multiple service providers and users.

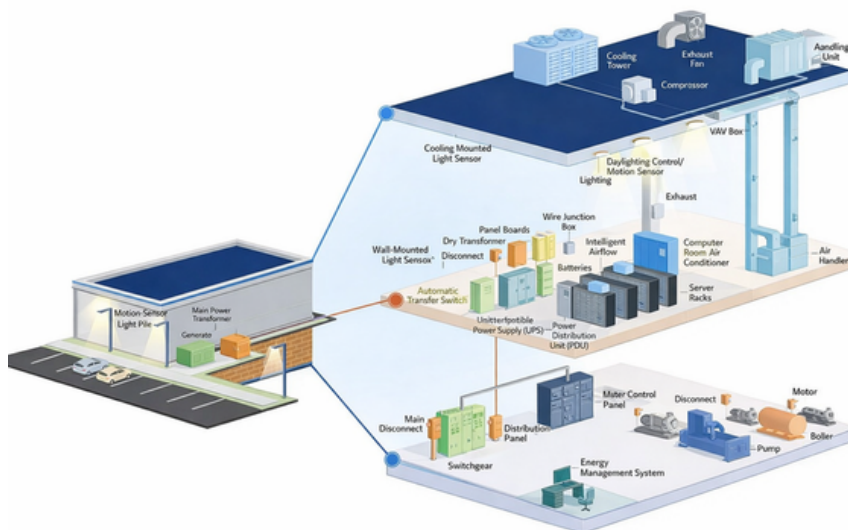
9. Main Distribution Frame (MDF) Room

The MDF Room serves as the central hub for network cabling within the facility. It connects internal network infrastructure to external telecommunications systems and routes connections to the Meet-Me Room (MMR) for further distribution.

10. Telecommunications Room (Telco Room)

The Telecommunications Room accommodates all service providers operating within the data centre. It provides space for telecom equipment and supports connectivity services required by tenants and users.

Figure 3 : Example Illustration of Components Inside a Data Centre

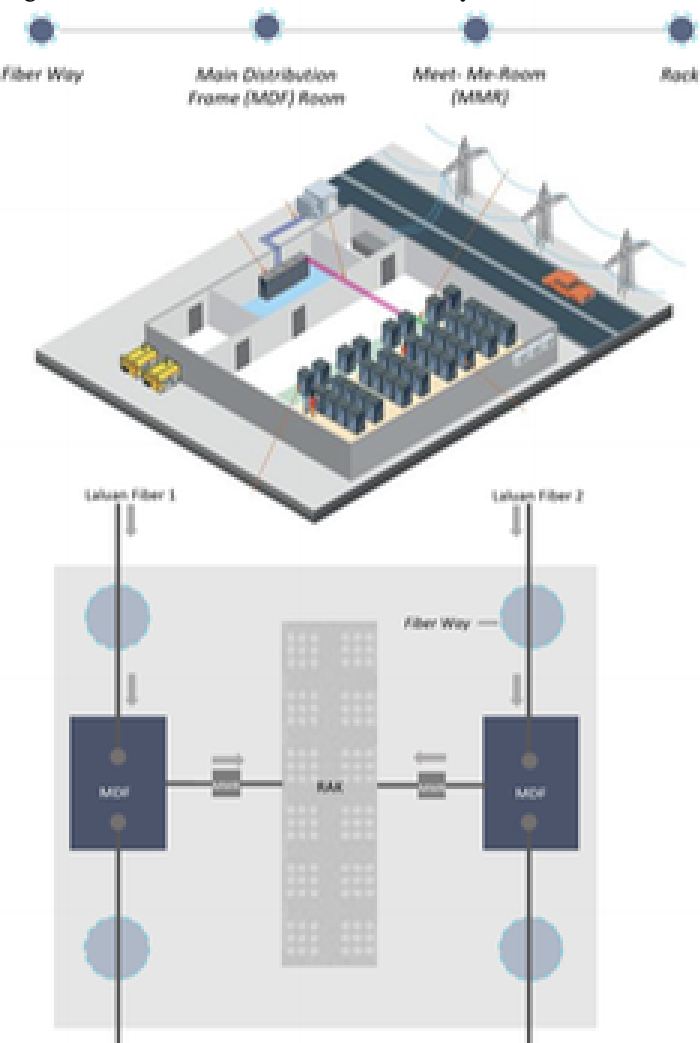


Source: Extract from Planning Guidelines for Data Centre Development, Johor

2.7 Data Centre Fiber Routing Design

A well-designed data centre layout is essential for ensuring efficient and high-performance IT operations, especially in Sarawak where environmental conditions and reliable connectivity are key considerations. **Proper fiber routing and cable management help create an organized and reliable environment by improving airflow, reducing overheating in a tropical climate, and minimizing disruptions.** The design should include redundant fiber routes for resilience, integration with existing telecommunication networks, and protective measures such as elevated trays or secure ducting to address humidity and potential flooding. It should also allow for future expansion and comply with standards such as TIA-942 and Sarawak Development Control Standards (DCS), in line with the State’s digital economy goals under PCDS 2030.

Figure 4 : Illustration of Fiber Pathways in a Data Centre



Source: Extract from Planning Guidelines for Data Centre Development, Johor

2.8 Data Centre Development Scale

The development scale of a Data Centre shall be determined primarily based on its installed electrical capacity dedicated to Data Centre operations. The installed electrical capacity provides a direct indication of the scale of the proposed facility and its potential demand on electricity supply and supporting infrastructure. The following table outlines the scale of the development of Data Centre:

Table 2 : Development Scale of Data Centre

Criteria	Small Data Centre	Medium Data Centre	Large Data Centre
Installed Electrical Capacity (MW)	1 – <5	5 – <20	≥20
Estimated Number of Racks	714 – 2,857	2,857 – 14,286	>14,286
Estimated Number of Servers	500 – 2,000	2,001 – 10,000	10,001 – 100,000
Floor Area (sq ft)	5,000 – 20,000	20,001 – 100,000	>100,000

Source: Extract from Planning Guidelines for Data Centre Development, Johor

Notes:
1 MW = 1,000 kW

Estimated Calculation:

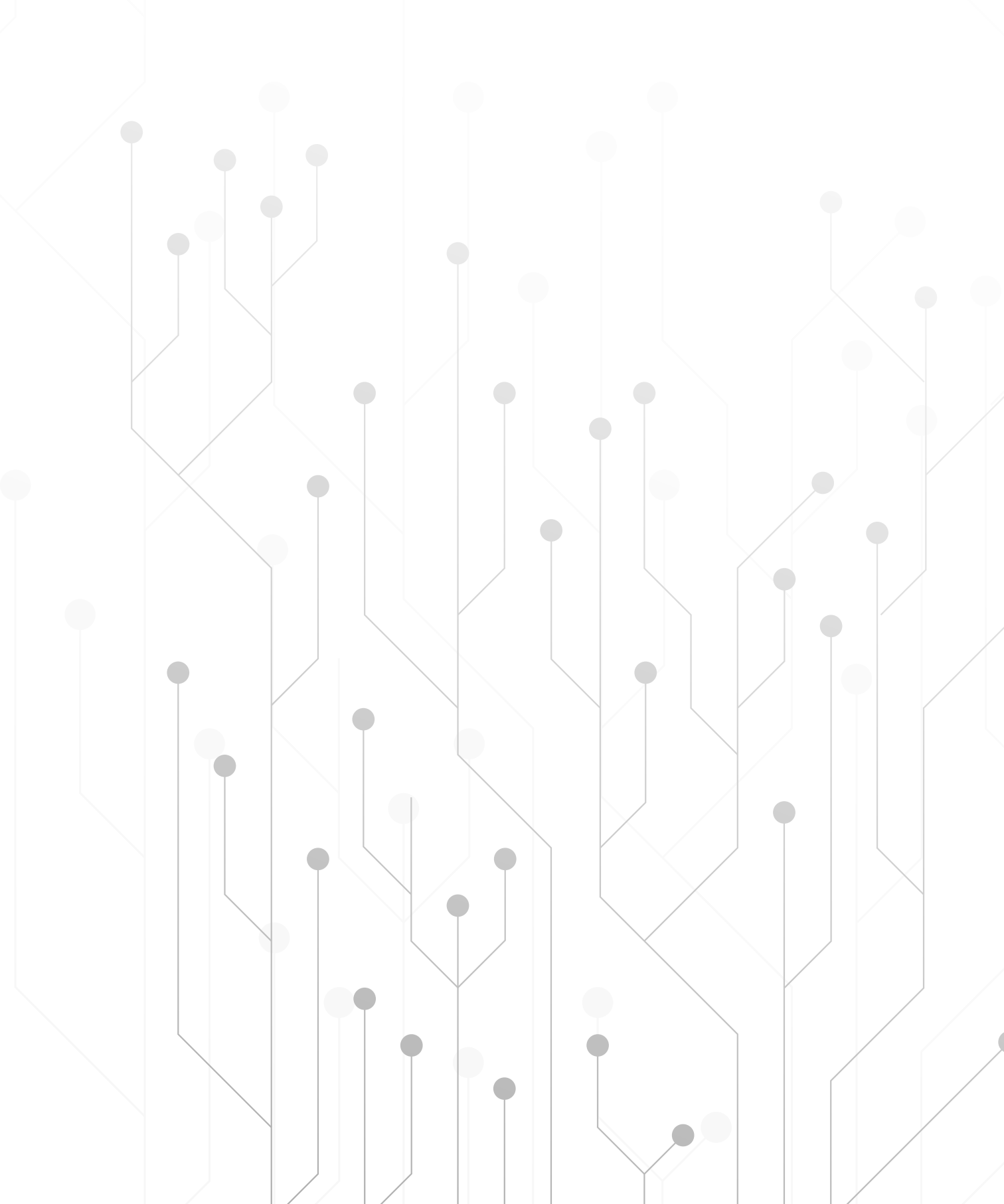
- Standard Rack Size: 24 inches × 42 inches × 73.6 inches
- Source: <https://blog.enconnex.com>

Formula:
Total Rack Footprint Area (Length × Width) / Gross Floor Area

Reference Range:

- 14,286
- 10,001 – 100,000
- 21 – 100

**3.0 GENERAL GUIDELINES &
STANDARDS**



3.0 GENERAL GUIDELINES AND STANDARDS

The planning and development of data centres in Sarawak shall be carried out in a coordinated, secure, and sustainable manner, in accordance with the **Part X of the Land Code (Cap. 81)**, relating to development planning and control standards under the State Planning Authority (SPA). The development of data centres must support the Post COVID-19 Development Strategy (PCDS) 2030, particularly in advancing Sarawak's digital economy, strengthening infrastructure resilience, and promoting low-carbon and resource-efficient development.

3.1 Data Centre Location

Site selection must **prioritise safety, resilience, and environmental compliance** within the Sarawak context:

1. Sites to be **located outside flood-prone areas**, particularly riverine and low-lying zones common in Sarawak, and may be supported by flood risk assessment where required;
2. Sites must have **adequate legal access and/or safe and convenience physical access to the existing road network** to facilitate construction, operation, maintenance, and emergency response;
3. Preference must be given to **sites located in close proximity to existing electricity transmission infrastructure, water supply networks, fibre optic infrastructure, and other major utility services** to minimise infrastructure expansion requirements and optimise development efficiency;
4. Sites **shall not be permitted within Environmentally Sensitive Areas**, including water catchment areas, forest reserves, steep terrain, and protected ecological zones, subject to Natural Resources Environmental Board (NREB), Sarawak River Board (SRB), Forest Department Sarawak (FDS) or any other relevant agencies requirements;
5. Sites on **peat soil must be avoided** unless supported by detailed geotechnical assessment and mitigation measures due to ground instability risks and/or subject to Drainage and Irrigation Department (DID) requirement;
6. Sites must be **located away from hazardous or high-risk industrial activities** (e.g. petrochemical plants, gas facilities);
7. Sites should **avoid locations immediately adjacent to major highways** where operational access, future road widening, or traffic safety may be adversely affected;
8. Sites must **avoid locations within or adjacent to strategic national security facilities or other restricted areas** unless supported by the relevant authority ; and
9. If the sites fall within aerodome, the development must **comply with the height control and aviation safety requirements** stipulated by the Civil Aviation Authority of Malaysia (CAAM) and should **avoid locations within aircraft approach and departure flight paths** where development may adversely affect aviation safety.

3.2 Electricity Supply Requirements

Electricity supply requirement shall be aligned with Sarawak's energy infrastructure and regulatory framework:

- To optimise infrastructure cost and efficiency, site selection should consider proximity to existing available electricity infrastructure such as transmission lines, substations, or Main Intake Substations;
- All developments shall adopt appropriate resource efficiency measures, including Power Usage Effectiveness (PUE) measured in accordance with ISO/IEC 30134-2, Carbon Usage Effectiveness (CUE), and other recognised industry performance indicators, where applicable, to support sustainable and efficient data centre operations;
- Energy-efficient cooling systems shall be promoted to reduce energy consumption and improve overall operational efficiency;
- Redundancy systems including backup generators or alternative energy systems shall be provided to ensure uninterrupted operations;
- The use of renewable energy, particularly Sarawak's hydropower, as well as solar integration, is strongly encouraged in line with the State's green energy agenda;
- All electrical infrastructure requirements shall comply with Electricity Ordinance (Chapter 50) and subject to technical review and confirmation by Sarawak Energy Berhad (SEB).

3.3 Water Supply Requirements

Water supply requirement shall reflect Sarawak's regulatory and operational context:

- Data centres shall provide sufficient water storage capacity to support at least 24 hours of operation, depending on cooling system requirements;
- Storage design shall be based on operational demand and system configuration;
- The adoption of water-efficient cooling technologies (e.g. air-cooled systems, eco-chillers, hybrid cooling) and Rainwater Harvesting Systems (SPAH) is encouraged;
- Data centres shall adopt Water Usage Effectiveness (WUE) principles and other appropriate resource efficiency measures to minimise water consumption and environmental impact; and
- All water supply requirements shall comply with The Water Supply Regulations, 1995 and must be referred to the relevant water supply authority, including Sarawak Water Sdn Bhd or Jabatan Bekalan Air Luar Bandar (JBALB) for technical review and confirmation.

3.4 Telecommunication and Digital Infrastructure Requirements

In line with Sarawak's digital transformation agenda:

- Infrastructure shall support redundant high-speed fiber connectivity with a **minimum speed of 300 Mbps**;
- Data centre operators are permitted to utilize existing dark fiber infrastructure owned and operated by licensed Network Facilities Providers (NFPs) or Network Service Providers (NSPs), subject to the Communications and Multimedia Act 1998 (CMA);
- At least **two (2) independent telecommunication service providers** shall be provided to ensure redundancy and service reliability;
- Integration with Sarawak's digital ecosystem, including state platforms and smart infrastructure initiatives, is encouraged; and
- Where an operator intends to deploy or lay new fiber pathways, connect to external fiber routes, or establish dedicated fiber routes outside its premises boundary (including land, riverine, or sea routes within Sarawak's Exclusive Economic Zone), prior **written approval must be obtained from the Sarawak Multimedia Authority (SMA)**.
- All telecommunication and digital infrastructure requirements shall comply with Ordinance 2017 (Cap 73) and subject to technical review and confirmation by Sarawak Multimedia Authority (SMA).

3.5 Environmental Requirements

Data Centre developments shall **comply with the Natural Resources and Environment (Prescribed Activities) Order, 1994**, and other relevant environmental laws, regulations and requirements imposed by the relevant authorities, where applicable.

- The proposed development shall comply with all relevant environmental laws, regulations, guidelines and standards as imposed under Natural Resources and Environment Board (NREB);
- Appropriate measures shall be incorporated to minimise potential impacts on natural resources and the surrounding environment;
- The principles of Water Sensitive Urban Design (WSUD) shall be incorporated, where appropriate, to promote sustainable stormwater management and efficient use of water resources;
- Green roof solutions are encouraged, where appropriate, to reduce heat gain, improve building performance and support sustainable stormwater management; and
- Stormwater management proposals must comply with the Sarawak Urban Stormwater Management (SUSToM) Manual and subject to review and approval by the Department of Irrigation and Drainage (DID).

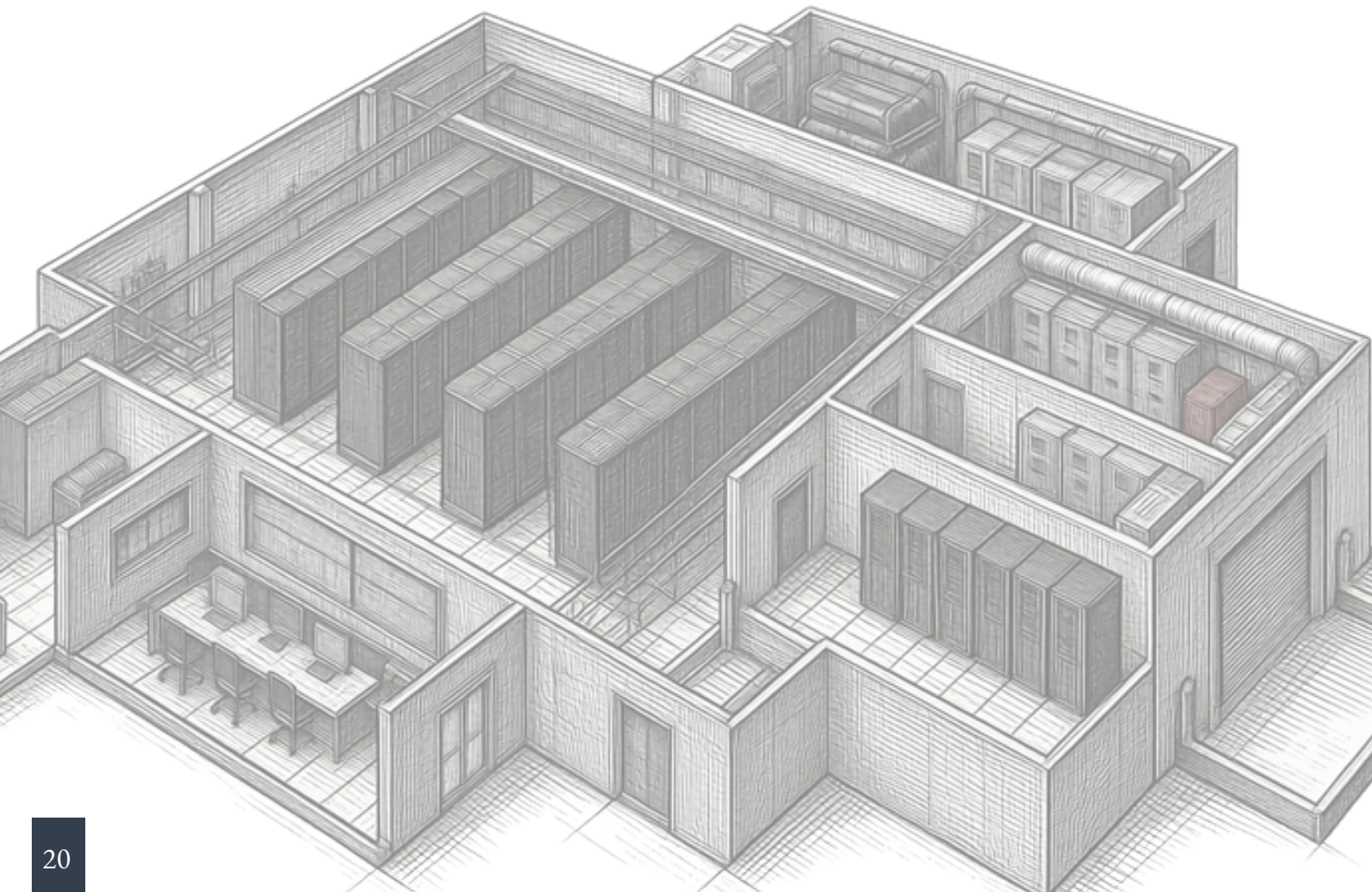
3.5 Permitted Planning Zones

Planning applications must be in accordance with permitted planning zones for development plans in Sarawak:

- Data centres shall be **located within industrial** as designated in approved Development Plans (State Physical Plan, Divisional Structure Plan, Local Plan or Special Area Plan) under Section 227, Part X of Land Code; and
- All developments **shall be subject to approval by the State Planning Authority (SPA)** with conditions as may be determine by the Authority.

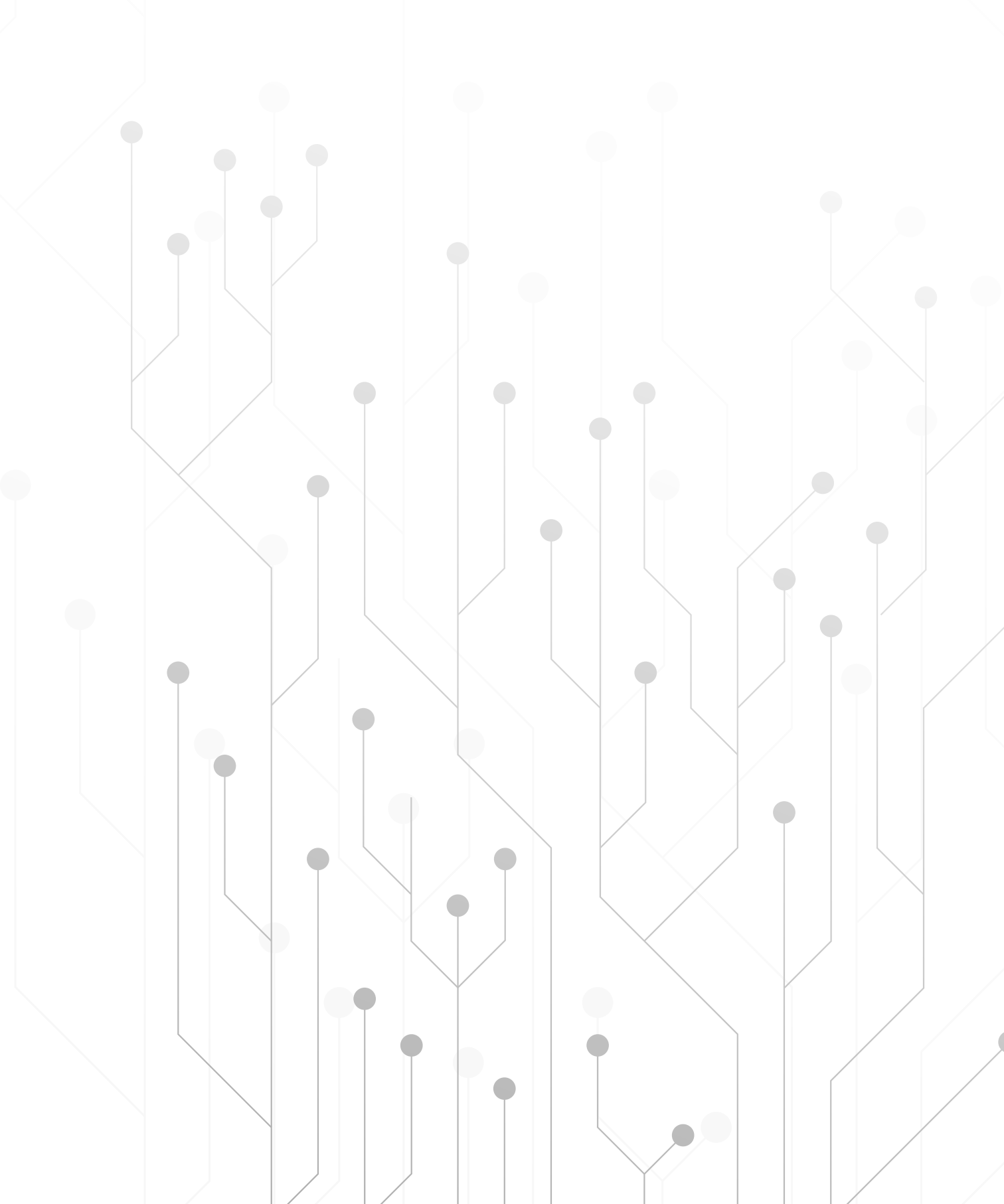
3.6 Land Use Category

- Data centres shall generally be categorised under **Industrial**, with **special title condition as Special Infrastructure (Data Centre)**.



The background features a light gray circuit board pattern with various lines, dots, and rectangular shapes. In the center, there is a stylized bridge graphic consisting of a horizontal line with a semi-circular arch on top. The arch is supported by two vertical lines, one on each side. The left support has a small rectangular detail, and the right support has a small circle detail. The text is centered between two horizontal lines, with the bridge graphic positioned above the top line and below the bottom line.

4.0 SPECIFIC PLANNING GUIDELINES & STANDARDS



4.0 SPECIFIC PLANNING GUIDELINES & STANDARDS

4.1 Data Centre In Industrial Zone

Data centres in industrial zone are generally more suitable due to better availability of land, infrastructure capacity, and tolerance for operational impacts such as noise and heavy vehicle movement. In Sarawak, such developments are strategically encouraged within designated industrial zones to support large-scale, energy-intensive operations while aligning with planning requirements and PCDS 2030 objectives.

Table 2 : Specific Guidelines & Standards For Data Centre In Industrial Zones

Planning Component	Planning Guidelines and Standards
Site Requirement	- Land Use Zoning : Heavy Industrial - Land Use Classification : Industrial / Special Infrastructure (Data Centre) - Must be free-standing building
Building Height	- Recommended : Height must not exceed 27.0 metres (or up to 4–6 storeys) or based on technical needs or operational demand and system configuration - All building designs must comply with the Buildings Ordinance 1994 (SBO) and Fire and Safety requirements
Site Coverage (Building Footprint)	Maximum 60% Site Coverage
Building Setbacks	- Front : Minimum 12m - Side : Minimum 6m-12m - Rear : Minimum 12m - Adjacent to road : Minimum 9m - Building-to-building distance : Minimum 12m
Road Reserves and Access	Access Road : Minimum 25m
Parking Requirement	1CP per 200m² Data Centre Gross Floor area 1CP per 50m² of GFA for office 1MP per 600m² **Notes: subject to minimum 1CP & 1LP per premise For other ancillaries/supporting facilities, to follow the DCS
Buffer Zone	- Minimum 30m-50m buffer from site boundary to adjacent development or minimum 50m to Environmentally Sensitive Areas (if any) - May incorporate landscaping, internal roads and open space

Figure 5 : Setback Sketch for a Data Centre Building in a Industrial Zones

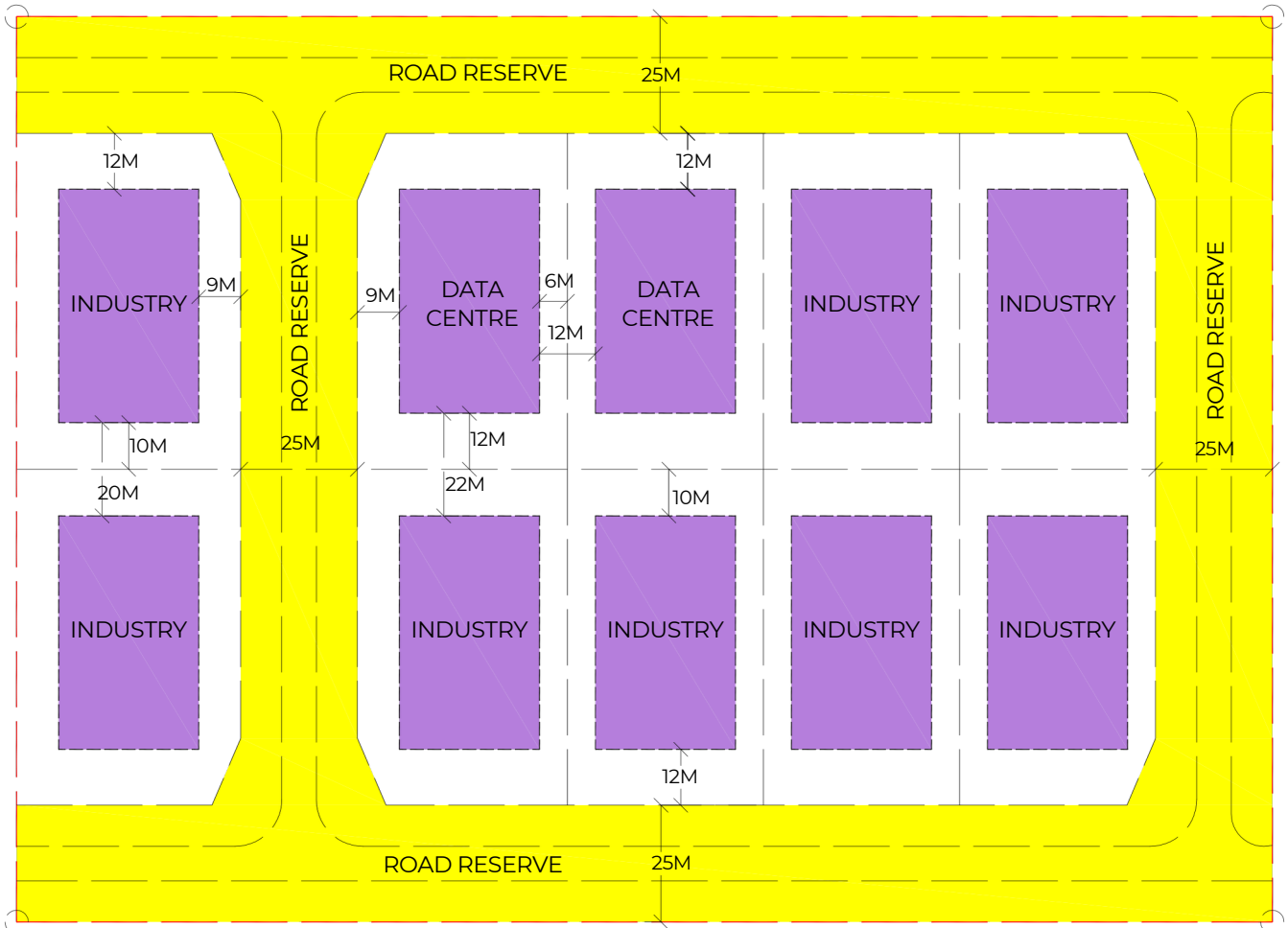


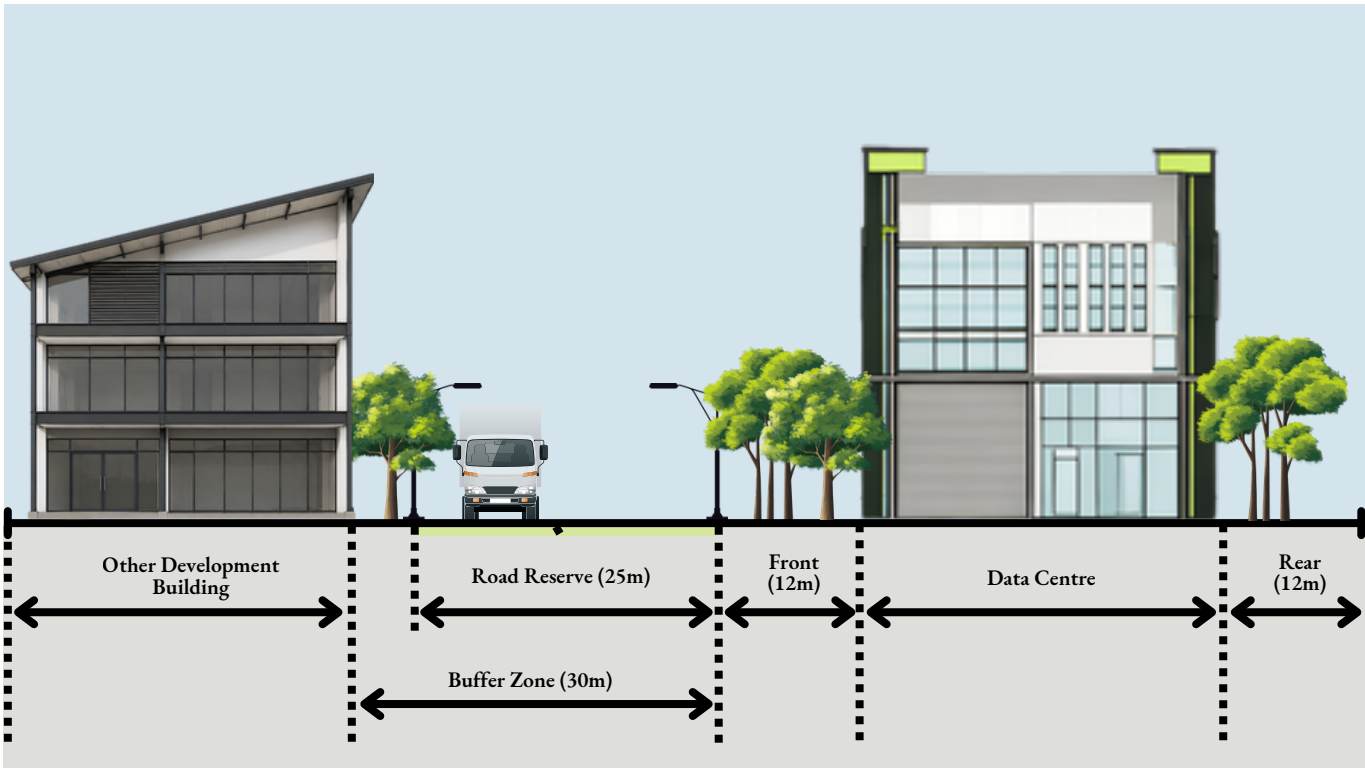
Figure 6 : Example of 3D Perspective for a Data Centre Building in a Industrial Zones



Figure 7 : Illustration For Data Centre In Industrial Zones



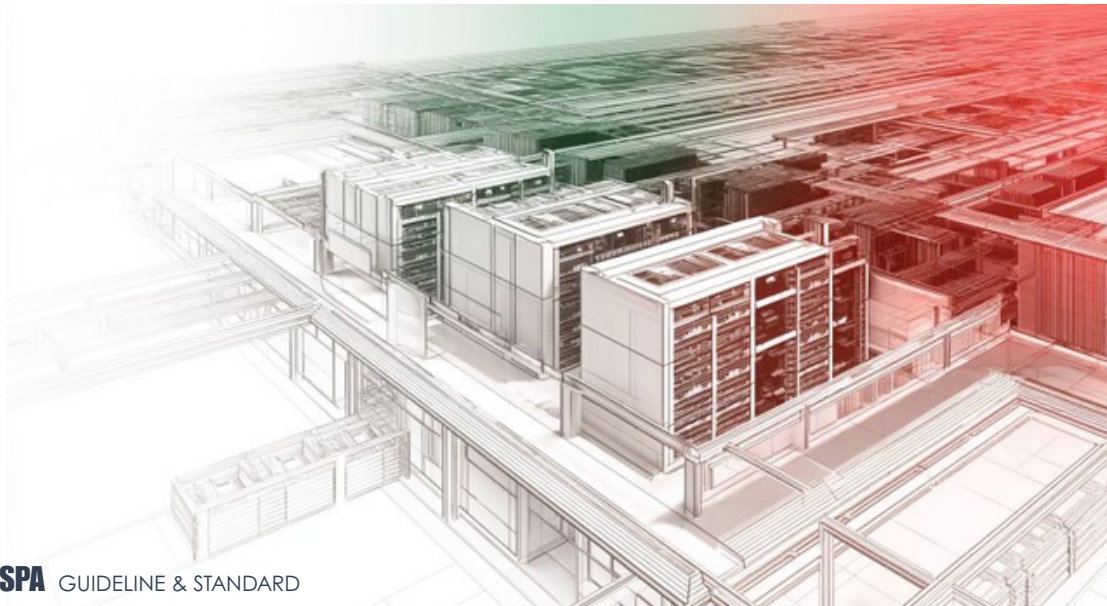
Figure 8 : Illustration of Buffer Zone for Data Centre Development



4.2 Data Centre In Existing or Vacant Industrial Building

The utilisation of existing or vacant industrial buildings for data centre development is encouraged in Sarawak as part of a sustainable and cost-efficient approach to optimise land use and support urban regeneration. Such developments shall be carefully assessed to ensure that the building is structurally sound, suitable for adaptive reuse, and capable of accommodating the technical and operational requirements of a data centre, while minimising impact on surrounding areas. In this regard, the development of data centres within existing or abandoned buildings shall comply with the following requirements:

1. **The building must undergo technical assessment, safe and structurally sound condition** which certified by a Professional Engineer with Practising Certificate (PEPC) to ensure it can accommodate specialized requirements such as equipment loading, cooling systems, and power infrastructure;
2. **The proposed development must form part of urban regeneration or redevelopment initiatives**, particularly within identified industrial areas;
3. **Buildings with potential for adaptive reuse are encouraged**, subject to suitability in terms of space, layout, floor loading capacity, and infrastructure readiness;
4. **Adequate supporting infrastructure must be provided**, including access roads, utility capacity (power and water), telecommunications connectivity, and appropriate buffer zones;
5. The site **must be located within designated industrial zones** as stipulated in the Development Plan (State Physical Plan, Divisional Structure Plan, Local Plan or Special Area Plan) and approved by the State Planning Authority (SPA); and
6. To obtain confirmation from all relevant agencies and **compliance with all relevant regulations and standards** is required, including the Land Code (Cap. 81), Electricity Ordinance (Chapter 50), Water Ordinance, 1994, Natural Resources and Environment requirements (NREB), and Fire and Rescue Department (BOMBA).



4.3 Implementation Mechanism

The implementation of data centre development shall involve two separate application mechanisms, depending on the nature of the proposed development and the land status.

4.4.1 Process and Procedure for Development Application for Variation of Title Conditions, Subdivision of Land and Siting

For data centre developments proposed by private companies on land that requires planning approval, the applicant shall submit the relevant application to the State Planning Authority (SPA) through the eSPA system and must be processed in accordance with the relevant planning requirements, policies, technical agency requirements and the provisions of the Part X of the Land Code (Cap. 81) and other applicable laws and regulations.

This shall include, but is not limited to, applications involving:

- Planning permission or development approval;
- Alteration of land use or conditions;
- Subdivision;
- Reclassification;
- Other planning-related matters or applications requiring consideration and approval by the SPA.

The detailed process and workflow for the Application for AVTC and Siting Application for Data Centre Development are shown in Appendix 1 and 2 respectively.

4.4.2 Process and Procedure of Application for Alienation of the Industrial Land

Where the proposed data centre development involves the alienation of Industrial Land, the application shall be made through the relevant land application process administered by the appropriate government agencies such as Ministry of Ministry of International Trade, Industry and Investment Sarawak (MINTRED).

The application shall be processed and considered in accordance with the established procedures for the alienation of industrial land for data centre development, including the necessary technical reviews, inter-agency coordination and consideration by the relevant approving authorities.

The detailed process and workflow for the Application for Alienation of Industrial Land for Data Centre Development are shown in Appendix 3.

4.4.3 Technical Agencies

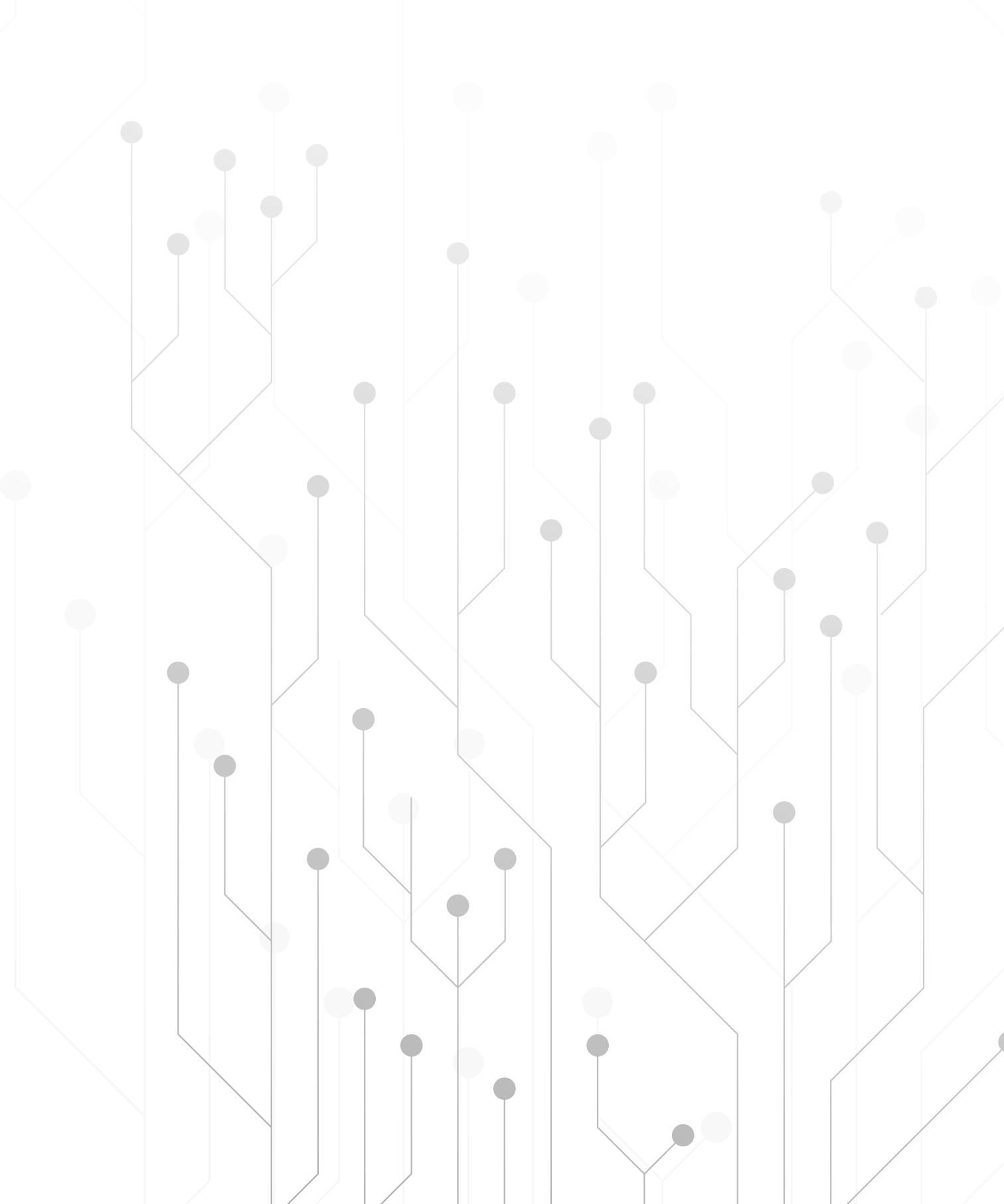
However, prior to submission of the relevant application the applicant is required to obtain technical comments and confirmation from the following agencies:

- **Sarawak Energy Berhad (SEB)** on power supply availability, load capacity, and connection requirements;
- **Sarawak Water Sdn Bhd or Jabatan Bekalan Air Luar Bandar (JBALB)** on water supply capacity, connection, and distribution systems;
- **Sarawak Multimedia Authority** on telecommunication infrastructure;
- **Natural Resources and Environment Board (NREB)** on environmental compliance, including EIA requirements where applicable; and
- **The Fire and Rescue Department (BOMBA)** on fire safety compliance, emergency access, and firefighting provisions.
- Where applicable, the development shall comply with the requirements of relevant agencies, including the **Sarawak Rivers Board (SRB)**, **Sarawak Forestry Corporation (SFC)** and **Forest Department Sarawak (FDS)**.

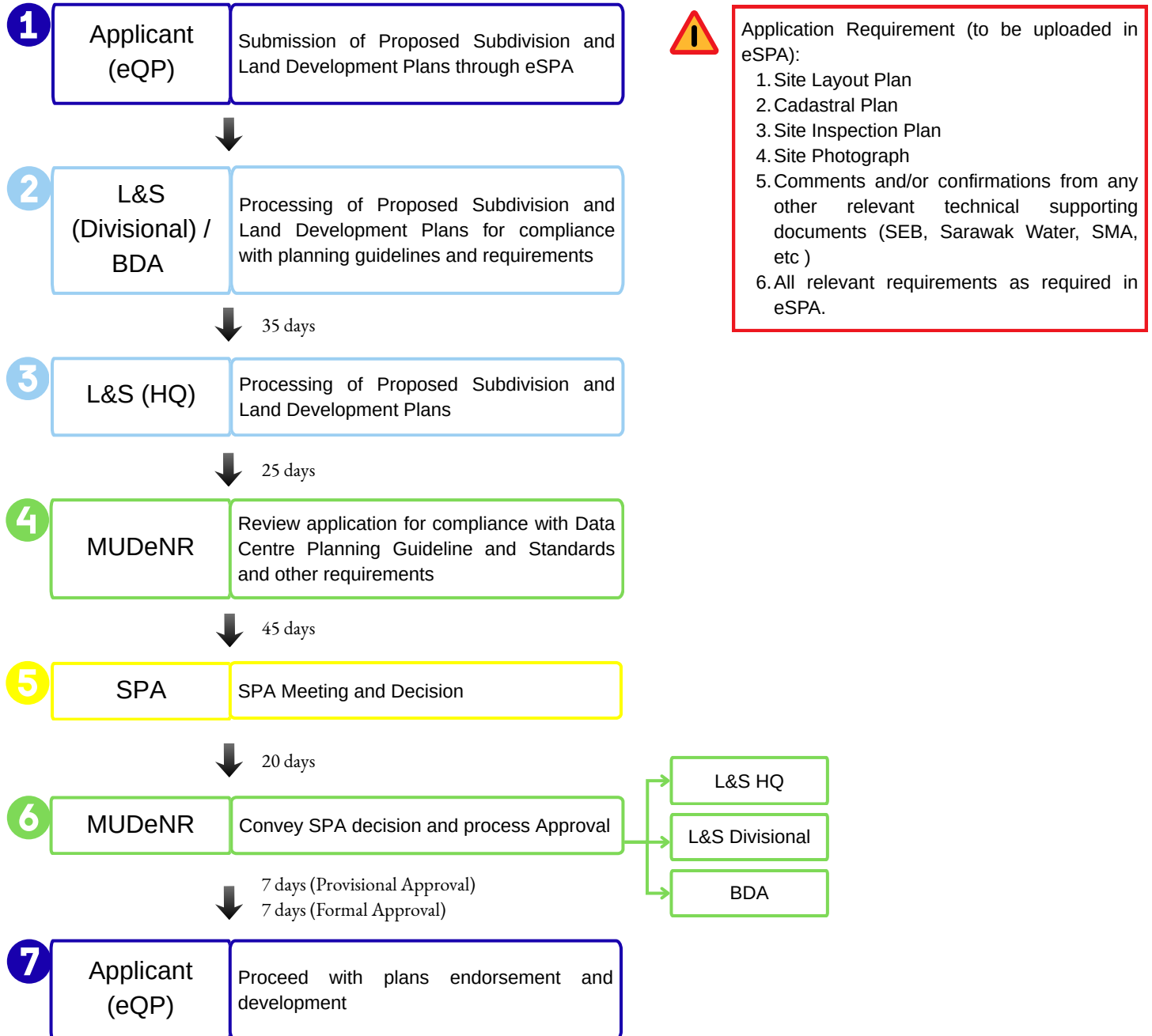
4.4 Conclusion

These guidelines and standards provide a comprehensive framework to support the orderly, efficient, and sustainable development of data centres in Sarawak. By addressing planning, technical, environmental, and operational requirements, they aim to ensure that data centre developments are compatible with their surrounding context while meeting the needs of modern digital infrastructure.

In line with the aspirations of PCDS 2030, these guidelines also promote the adoption of energy-efficient, resilient, and environmentally responsible practices, while strengthening governance through the role of the State Planning Authority (SPA). Collectively, they are intended to facilitate high-quality investments, enhance coordination among agencies, and position Sarawak as a competitive hub for data centre development.

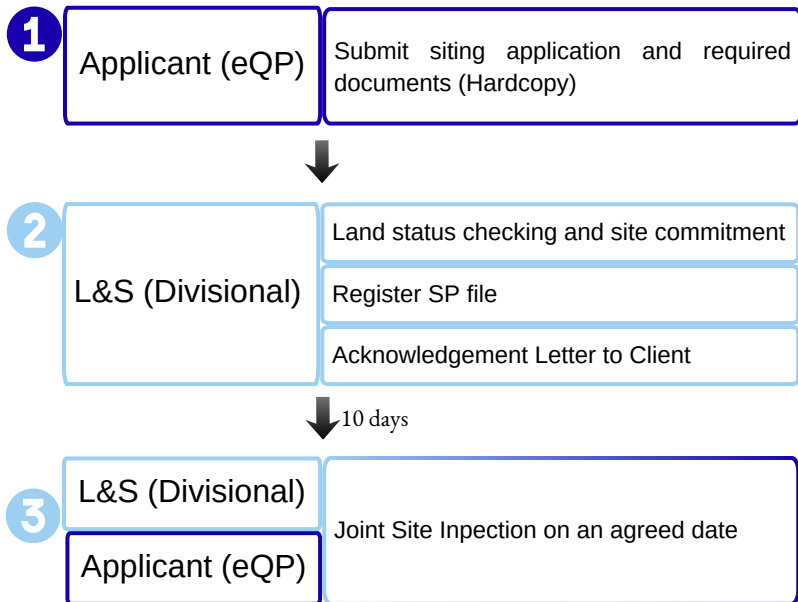


PLANNING PROCESS AND PROCEDURE FOR APPLICATION OF VARIATION OF TITLE CONDITION AND SUB-DIVISION FOR DATA CENTRE DEVELOPMENT



PLANNING PROCESS AND PROCEDURE FOR SITING APPLICATION FOR DATA CENTRE DEVELOPMENT (GOVERNMENT INITIATIVES)

Pre-Consultation

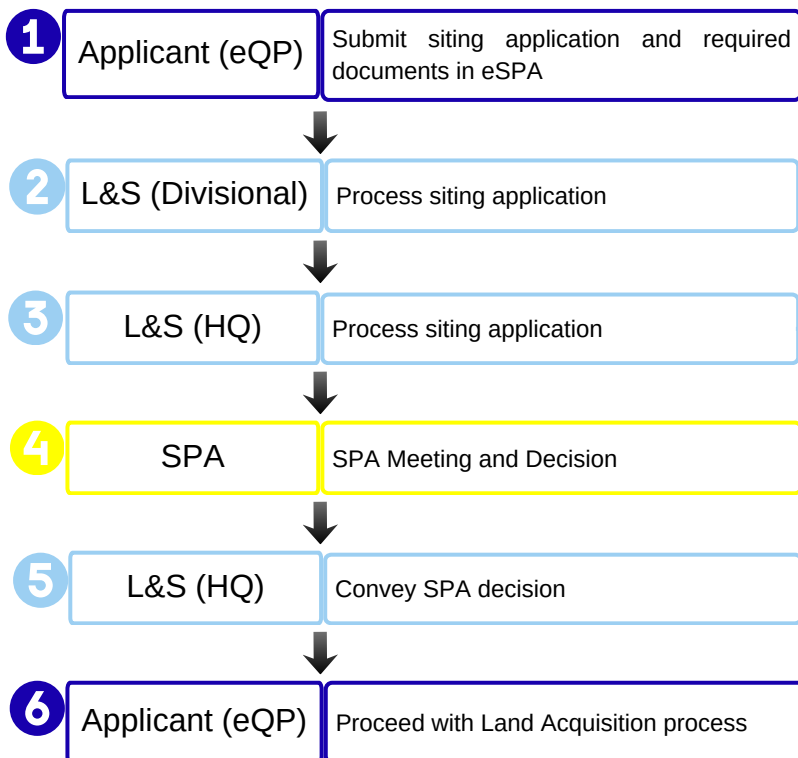


Application Requirement (to be uploaded in eSPA):

1. Application Letter
2. Siting Form
3. Site Plan
4. Comments or confirmations from any other relevant technical supporting documents (SEB, Sarawak Water, SMA, etc)

- Advice to submit in eSPA
- Provide SP File Reference to be key-in in eSPA
- Additional Information (if required)

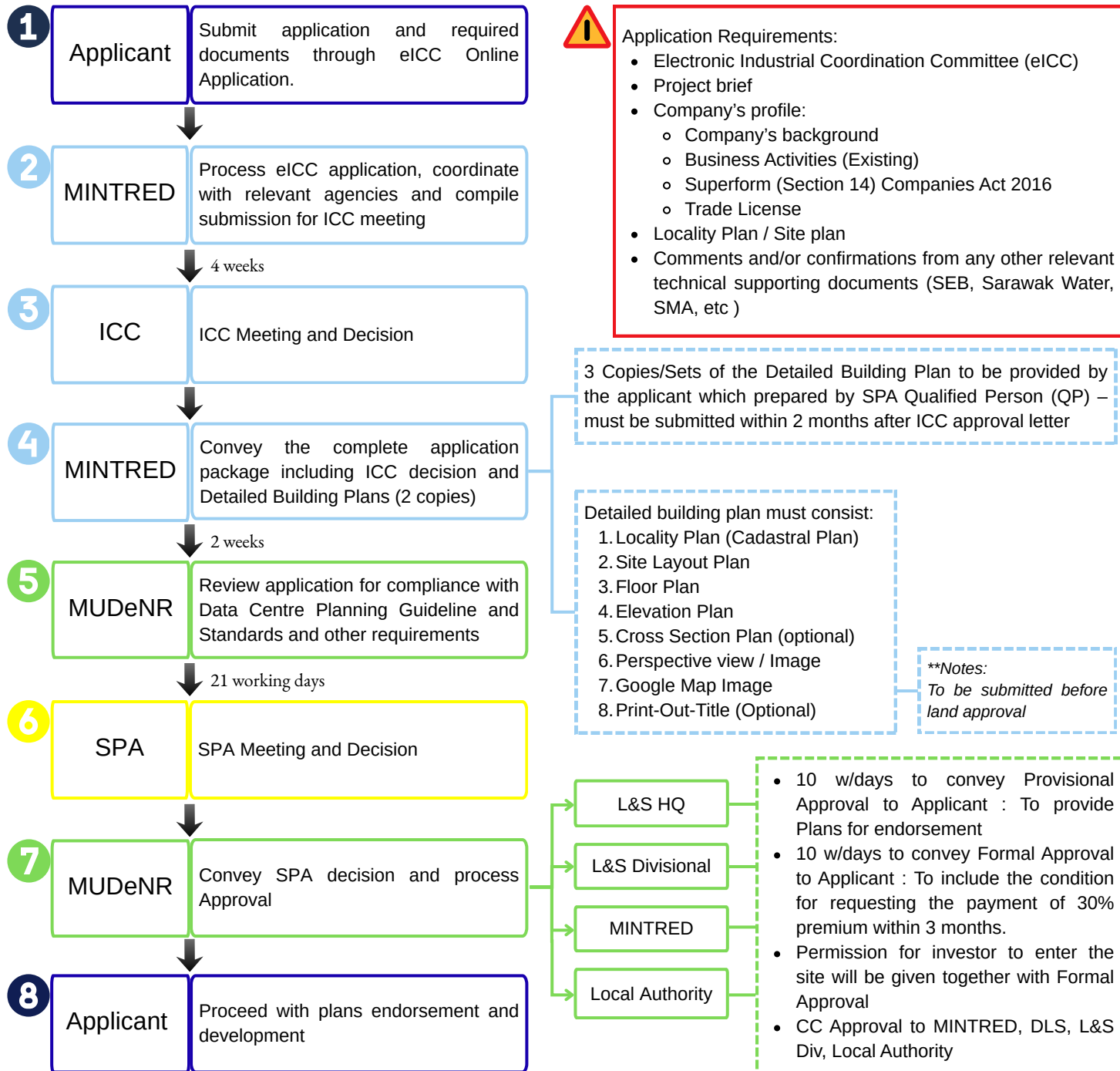
Online Submisison



- To key in the same SP file reference as given by L&S
- Fill in Site Inspection Date
- Attached the Site Acceptance Form

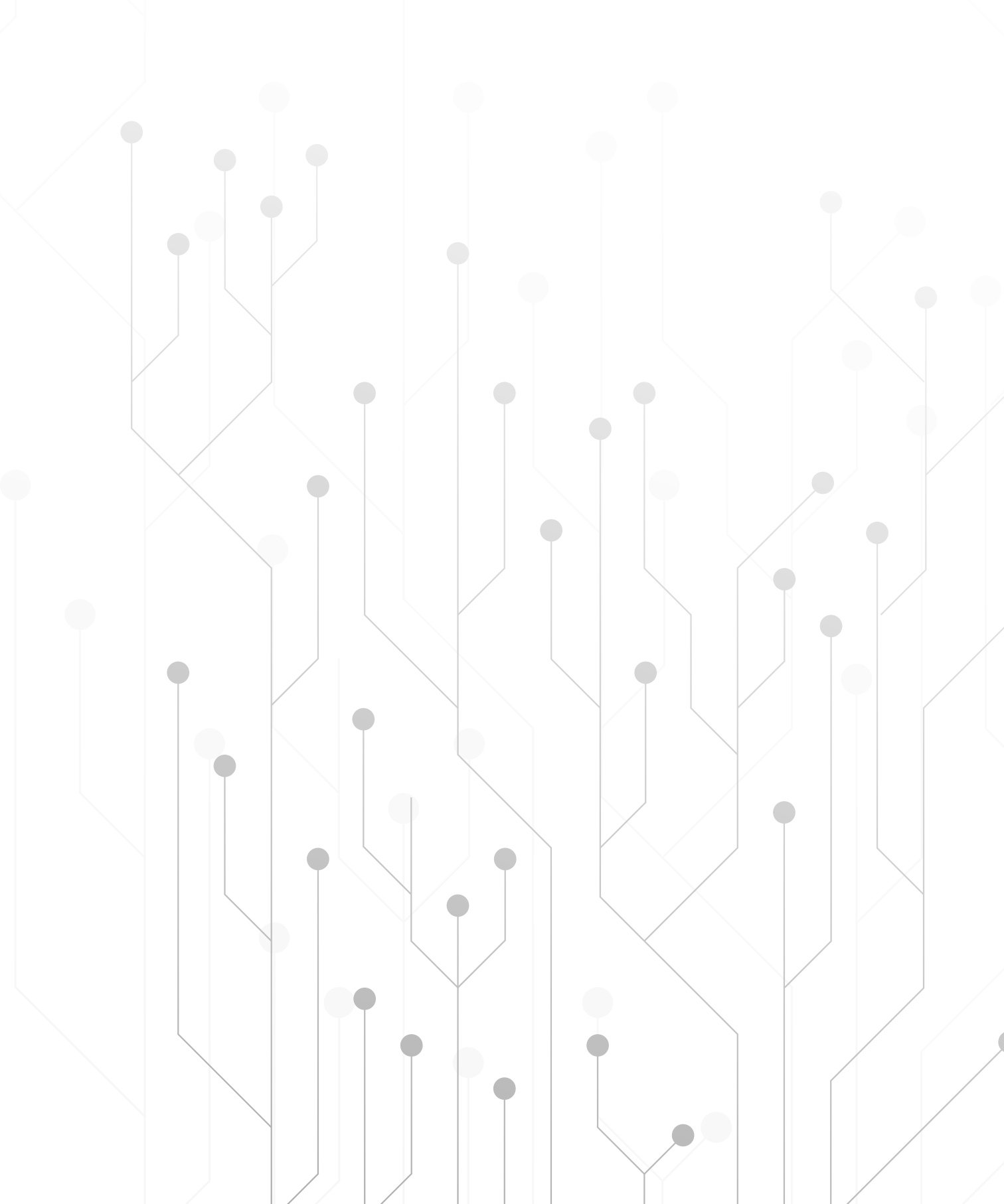
- L&S (HQ) may raise queries or request additional information from the Applicant, where necessary (e.g. insufficient or missing justification).

PROCESS AND PROCEDURE OF APPLICATION FOR ALIENATION OF INDUSTRIAL LAND FOR DATA CENTRE DEVELOPMENT



Notes:

To comply with **SPA Circular 6/2018**





Prepared by ;

Policy, Research and Legislation Section,
Urban and Country Planning Division

MINISTRY OF NATURAL RESOURCES AND URBAN DEVELOPMENT (MUDeNR)

3, 5, 7-9, 15 & 16th Floor, Wisma Sumber Alam, Jalan Stadium, Petra Jaya,
93050 Kuching, Sarawak

