



PROJECT SHOWCASE

HOSPITAL UMUM SARAWAK, KUCHING

ENERGY EFFICIENT HVAC / ACMV SYSTEM

CADANGAN PENGGANTIAN SISTEM PENYAMAN UDARA BERPUSAT TERMASUK AHU DAN PERALATAN PERALATAN LAIN BERKAITAN UNTUK BANGUNAN PESAKIT LUAR HOSPITAL UMUM SARAWAK



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CERT. NO. : AR 5622

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FOREWORDS & APPRECIATIONS



MANAGING DIRECTOR JANA TANMIA RESOURCES SDN BHD

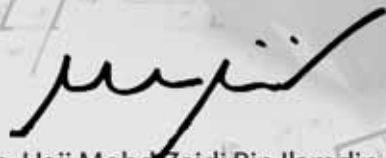
It is a great opportunity for Jana Tanmia Resources Sdn Bhd to be given a chance to participate in this project as a Specialist Contractor in Mechanical & Electrical ie specifically HVAC system . We are thankful to GOD the Almighty for this opportunity.

We would like to thank everyone in Ministry of Health Malaysia, for all cooperation given to us in order to complete this project in the right specification and within a very tight schedule. Without a good teamwork we will never able to complete this critical project as required by the user and MOH.

People who fundamentally helping and assisting us are the Engineering Department of Ministry of Health; Head by Dato' Chin Goo Chai, Tn. Hj. Jalal Bongkik and Mr. Yahya Saad, other than them, the Director of Hospital Umum Sarawak; Dr. Chin Zin Hing. We are really grateful because the users are fully satisfied and wishing the best for the system to be used according to design spec without any disruption of services. We need to thank all of you for your support too.

We are fully determined to ensure the full success of the project and we will be providing our support for the user and MOH during the period of defect and liability in repairing any defects. The system has included global monitoring of the Chiller Plant Room System and hope this can be the first of its kind to be used in all HVAC project in MOH especially in minimising the energy usage in the chiller plant room.

Again I would like to thank everyone with the hope that we could coordinate such a great project again in the future.



Tn. Haji Mohd Zaidi Bin Ilamdin *K.M.N*
REEM, MIPM, GBIF, CEM, CEA, CPMV, CAAM

Managing Director Jana Tanmia Resources Sdn Bhd

CONTENT



1. LOCATION PLAN



2. TOOLS, MACHINERIES & MATERIAL ON SITE



3. PRELIMINARIES WORK & MOBIZATION

4. DISMANTLING PROCESS

5. INSTALLATION PROCESS



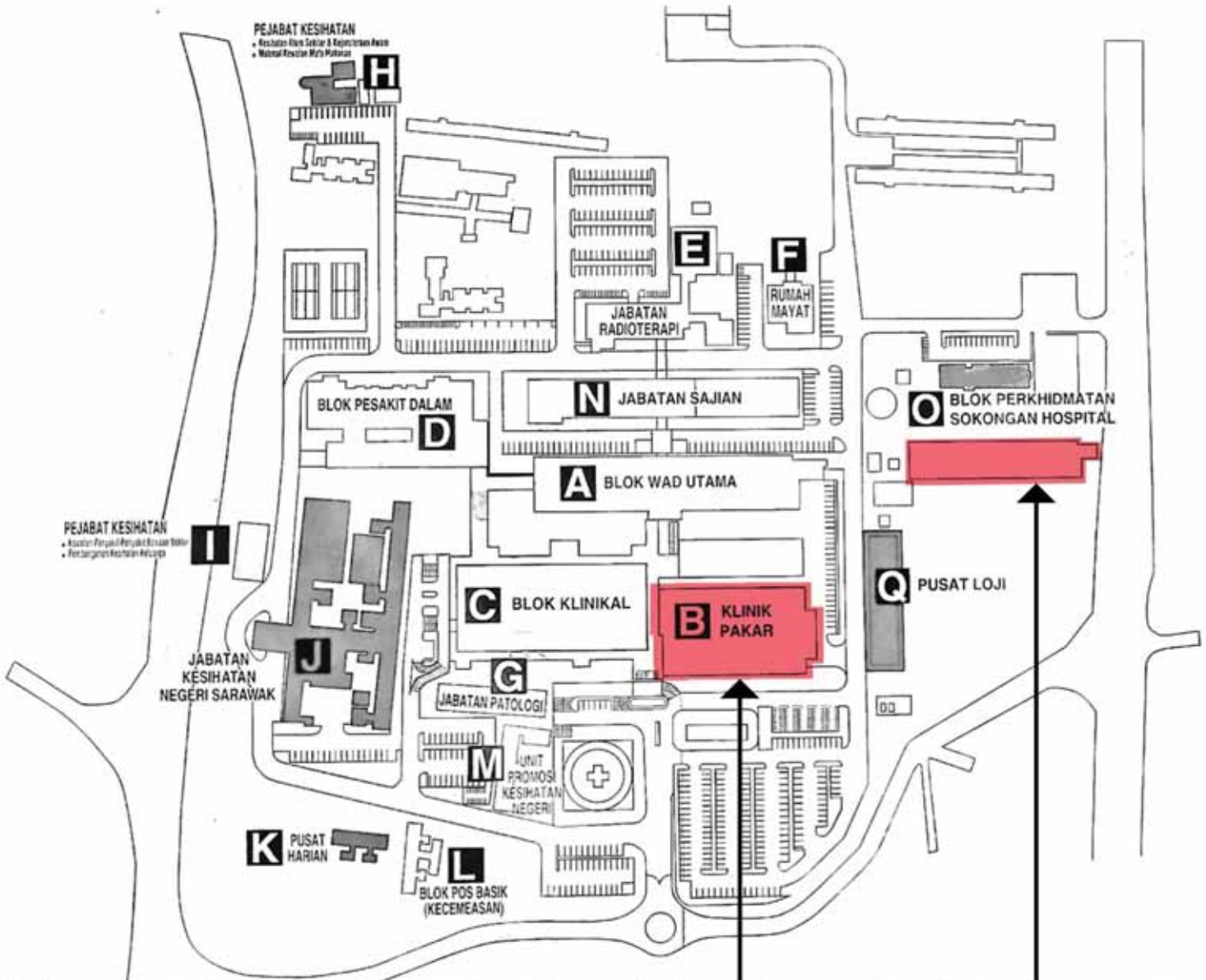
6. TESTING & COMMISSIONING

7. SITE CLEARANCE

8. COMPLETED PROJECT

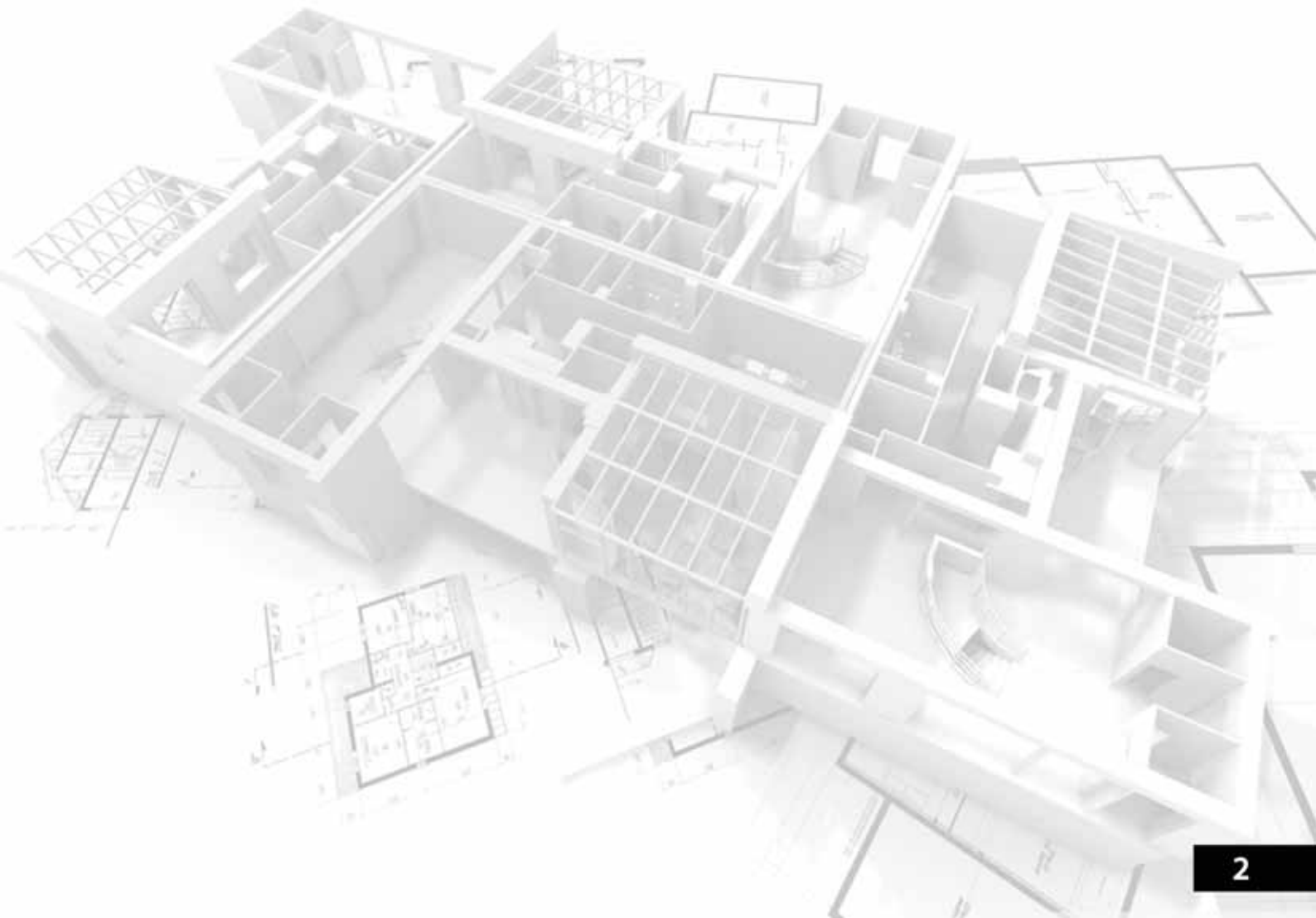


LOCATION PLAN



PROJECT SHOWCASE HOSPITAL UMUM SARAWAK, KUCHING

TOOLS, MACHINERIES & MATERIALS ON SITE



MATERIALS



TOOLS



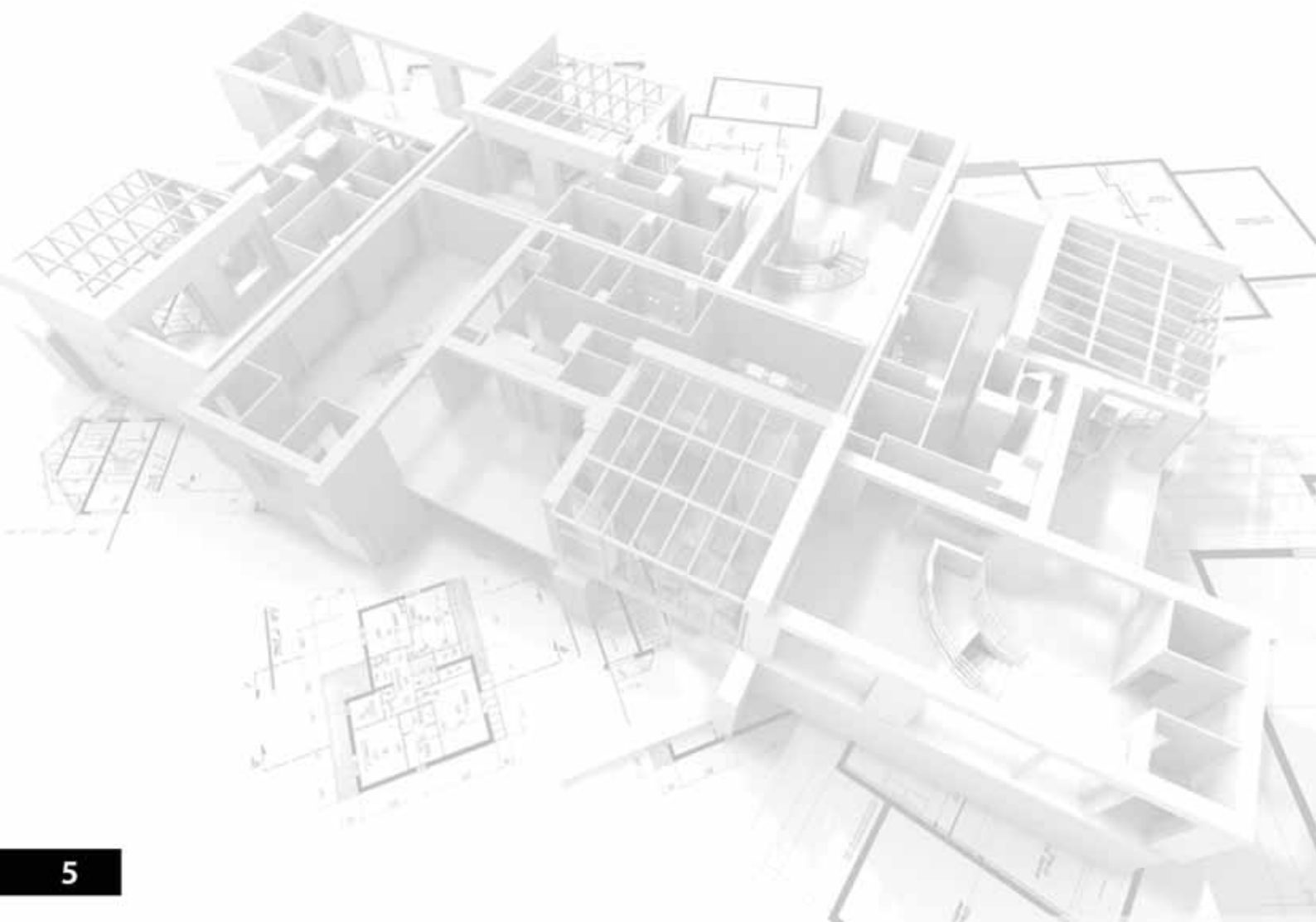
MACHINERIES



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PRELIMINARIES WORK AND MOBILIZATION

week 1 to 6



Preliminaries Work & Mobilization



All workmen including those employed by sub contractors wear the safety equipment during construction period as requirement mentioned in Uniform Building by Laws (UBBL) 1984 & DOSH requirement.



PRELIMINARIES WORK & MOBILIZATION

Hoarding Installation & Project Signboard



PRELIMINARIES WORK & MOBILIZATION

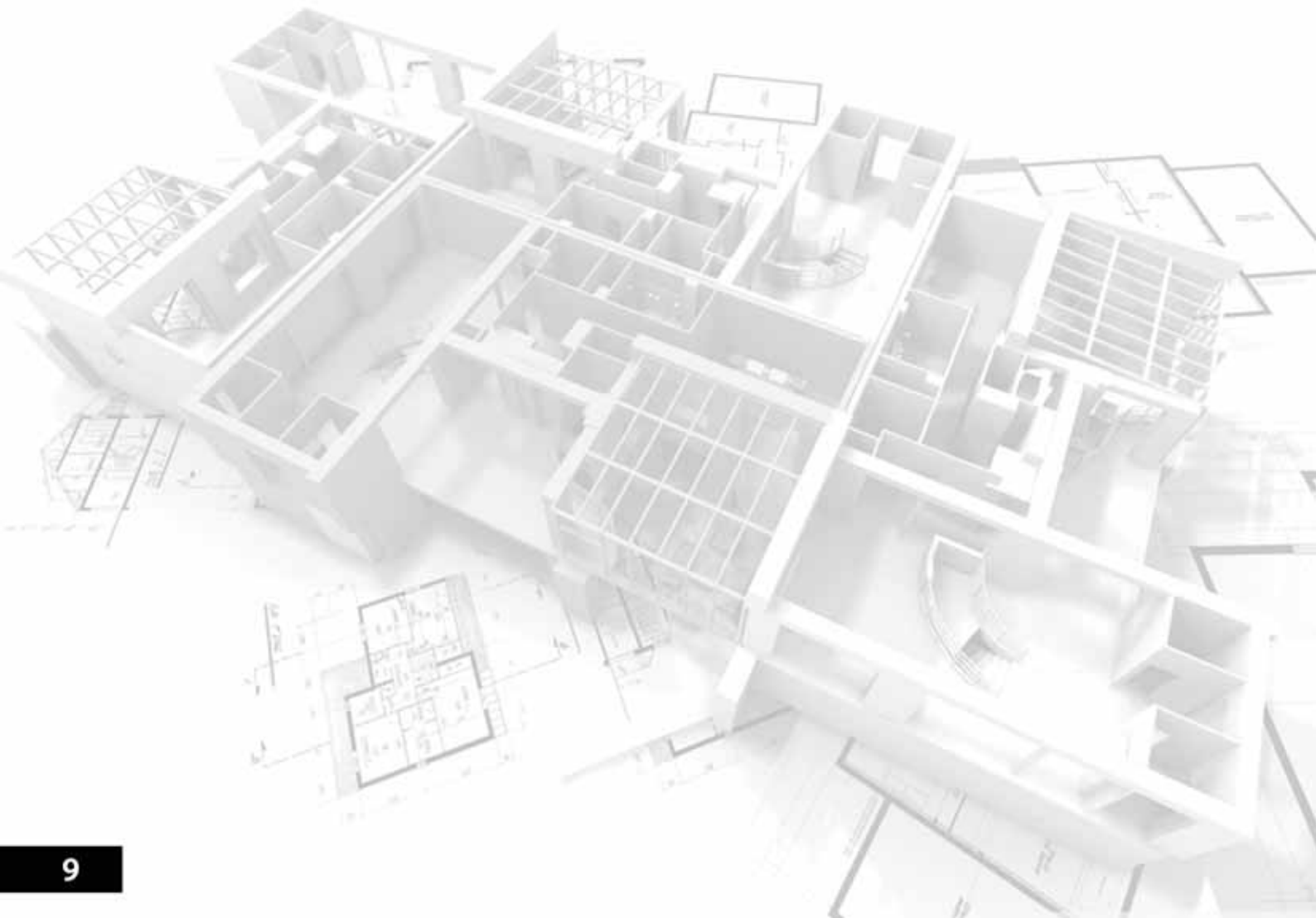
Demolish of Existing Brick Wall



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DISMANTLING PROCESS

week 6 to 24



DISMANTLING PROCESS

- Dismantling of Existing Chiller & Pump Set



DISMANTLING PROCESS

● Dismantling of Existing Cooling Tower



DISMANTLING PROCESS

● **Dismantling of Existing Piping at Chiller Plant Room**



DISMANTLING PROCESS

Dismantling of Existing AHU



DISMANTLING PROCESS

• Dismantling of Existing AHU



DISMANTLING PROCESS

- **Dismantling of Existing Make Up Water Tank**



DISMANTLING PROCESS

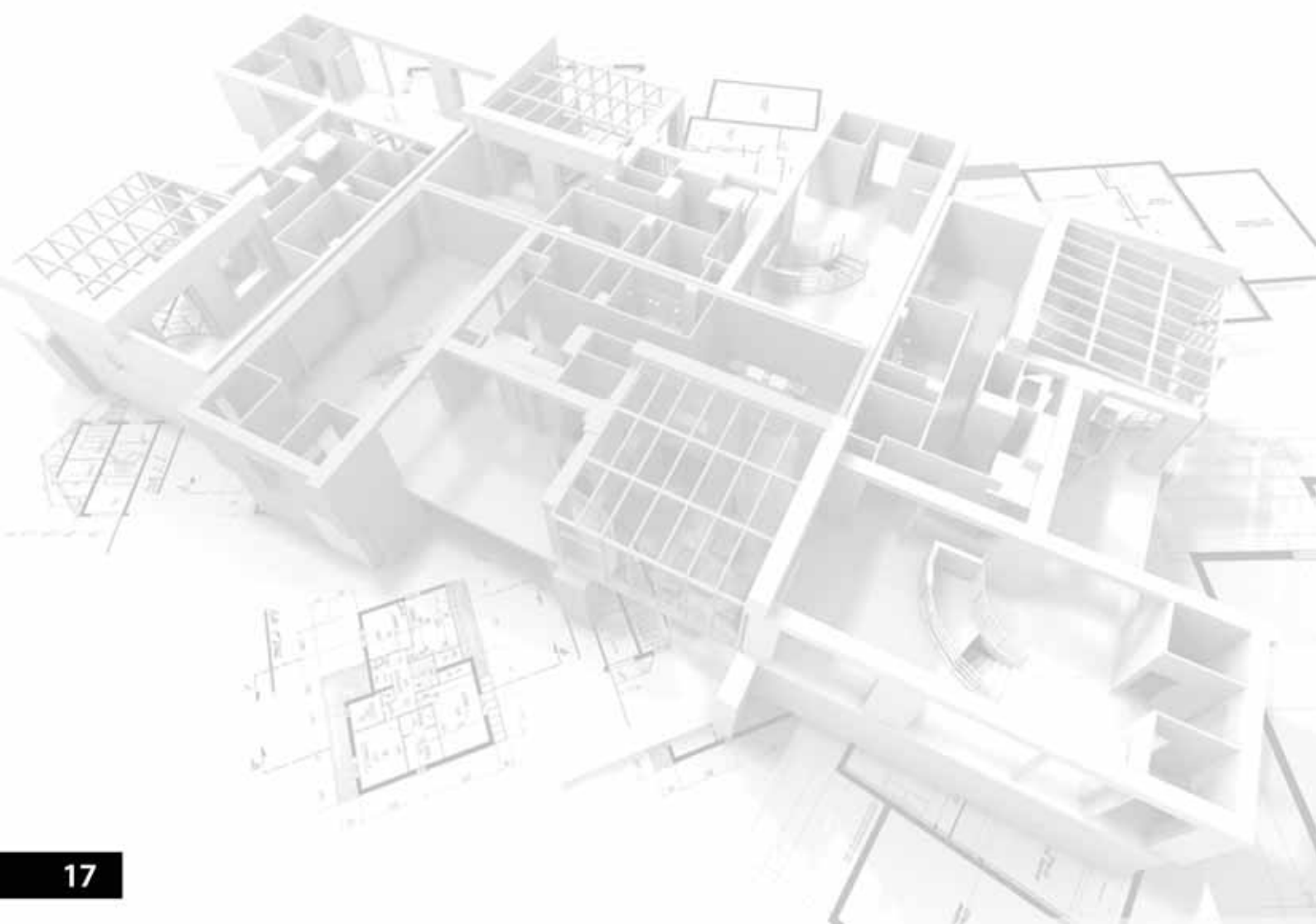
Dismantling of Existing Aircond Duct



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INSTALLATION PROCESS

week 13 to 31



INSTALLATION PROCESS

● **Installation of New Concrete Plinth for Chiller, Pumps and Cooling Tower**



INSTALLATION PROCESS

Arrival & Installation of New Chiller



INSTALLATION PROCESS

- Arrival of New Pre Insulated Chilled Water Pipe



INSTALLATION PROCESS

Installation of New Chilled & Condenser Water Pump



INSTALLATION PROCESS

Installation of New Cooling Tower



INSTALLATION PROCESS

Installation of New Cooling Tower



INSTALLATION PROCESS

● **Installation of New Make Up Water Tank**



INSTALLATION PROCESS

● **Installation of New Make Up Water Tank**



INSTALLATION PROCESS

Installation of New AHU



INSTALLATION PROCESS

Installation of New Aluminium Jacketing for Pipe Insulation



INSTALLATION PROCESS

● **Installation of New Aircond Ducting System**



INSTALLATION PROCESS

● **Installation of New Aircond Ducting System**



INSTALLATION PROCESS

Installation of New Chiller & AHU Switchboard



INSTALLATION PROCESS

● Epoxy Floor Coating



INSTALLATION PROCESS

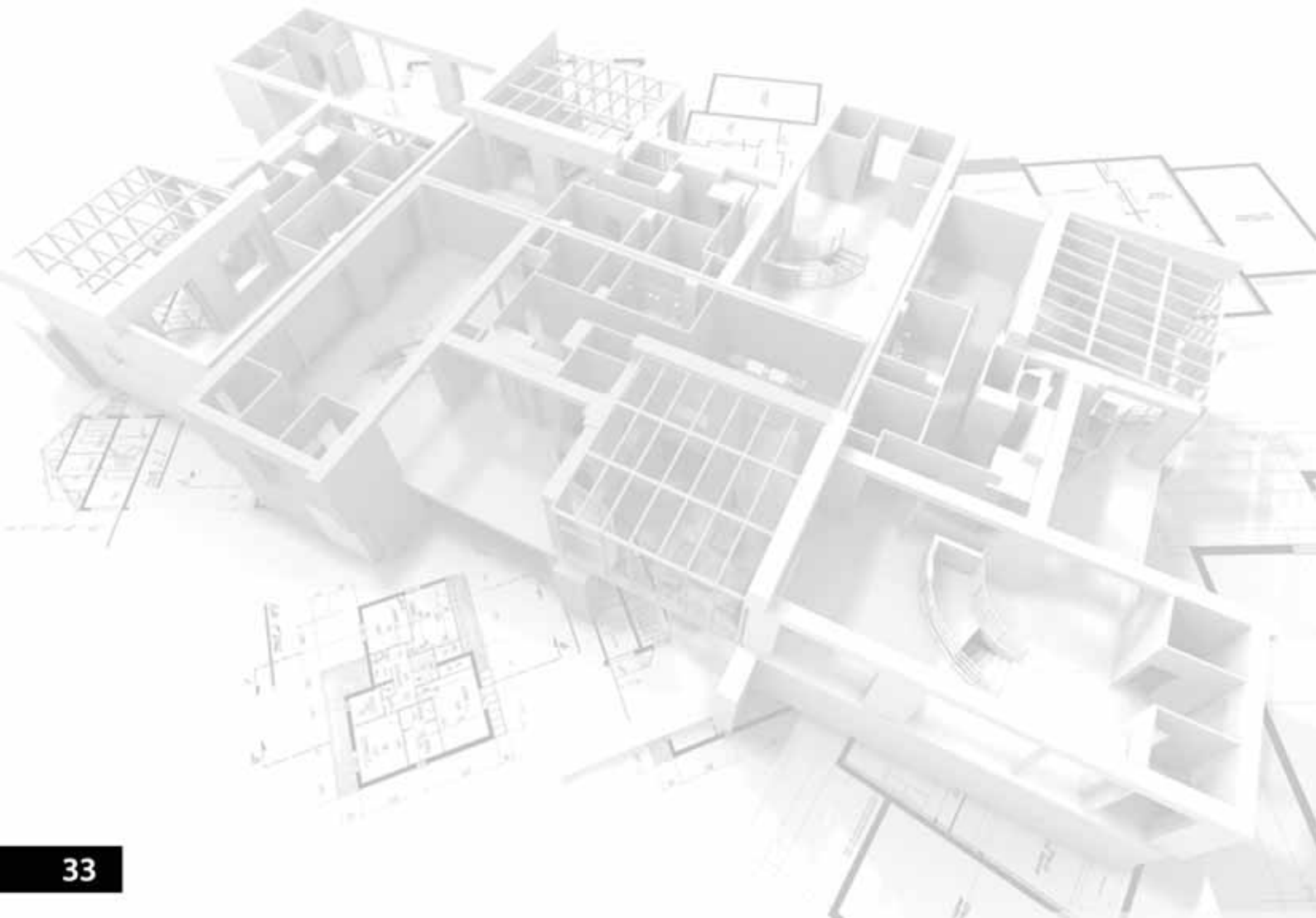
- Corporate Social Responsibility (CSR) by Jana Tanmia Resources (JTR) paint outside of Chiller Plant Room which is outside from JTR scope.



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TESTING AND COMMISSIONING

week 33 to 35



TESTING AND COMMISSIONING

Chiller System Test Run and Inspection



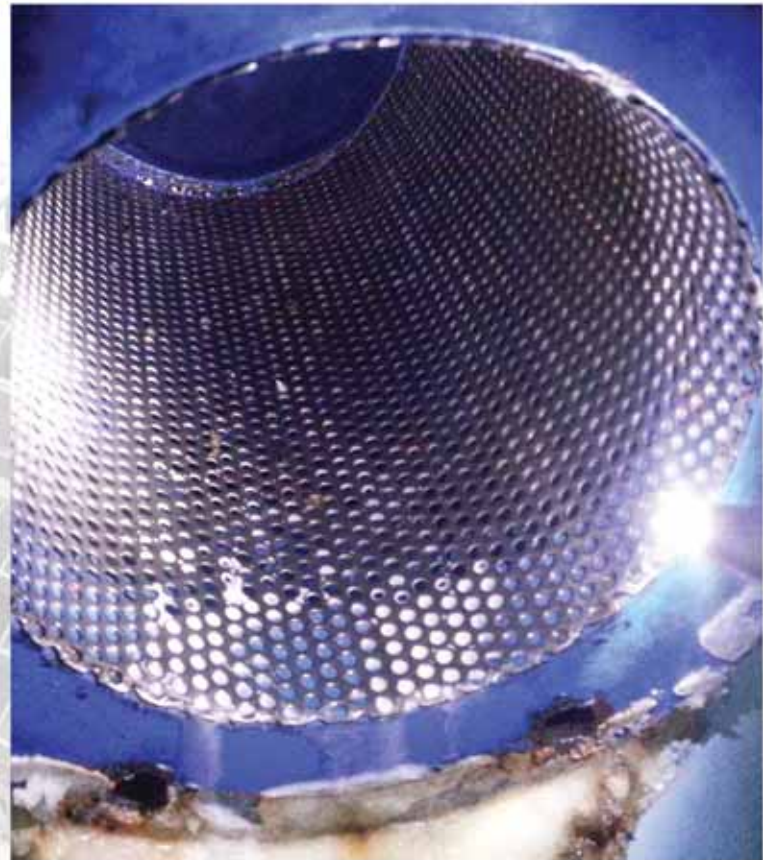
TESTING AND COMMISSIONING

Chilled Water System Flushing and Cleaning



TESTING AND COMMISSIONING

Chilled Water System Flushing and Cleaning



TESTING AND COMMISSIONING

● **Cooling Tower Pre-Cleaning**



TESTING AND COMMISSIONING

● **Chemical Water Treatment**



TESTING AND COMMISSIONING

Switchboard Testing and Calibration



TESTING AND COMMISSIONING

- Air Balancing for All Room Based on Design CFM



TESTING AND COMMISSIONING

● Inspection by Ministry Of Health (Engineering Department)



TESTING AND COMMISSIONING

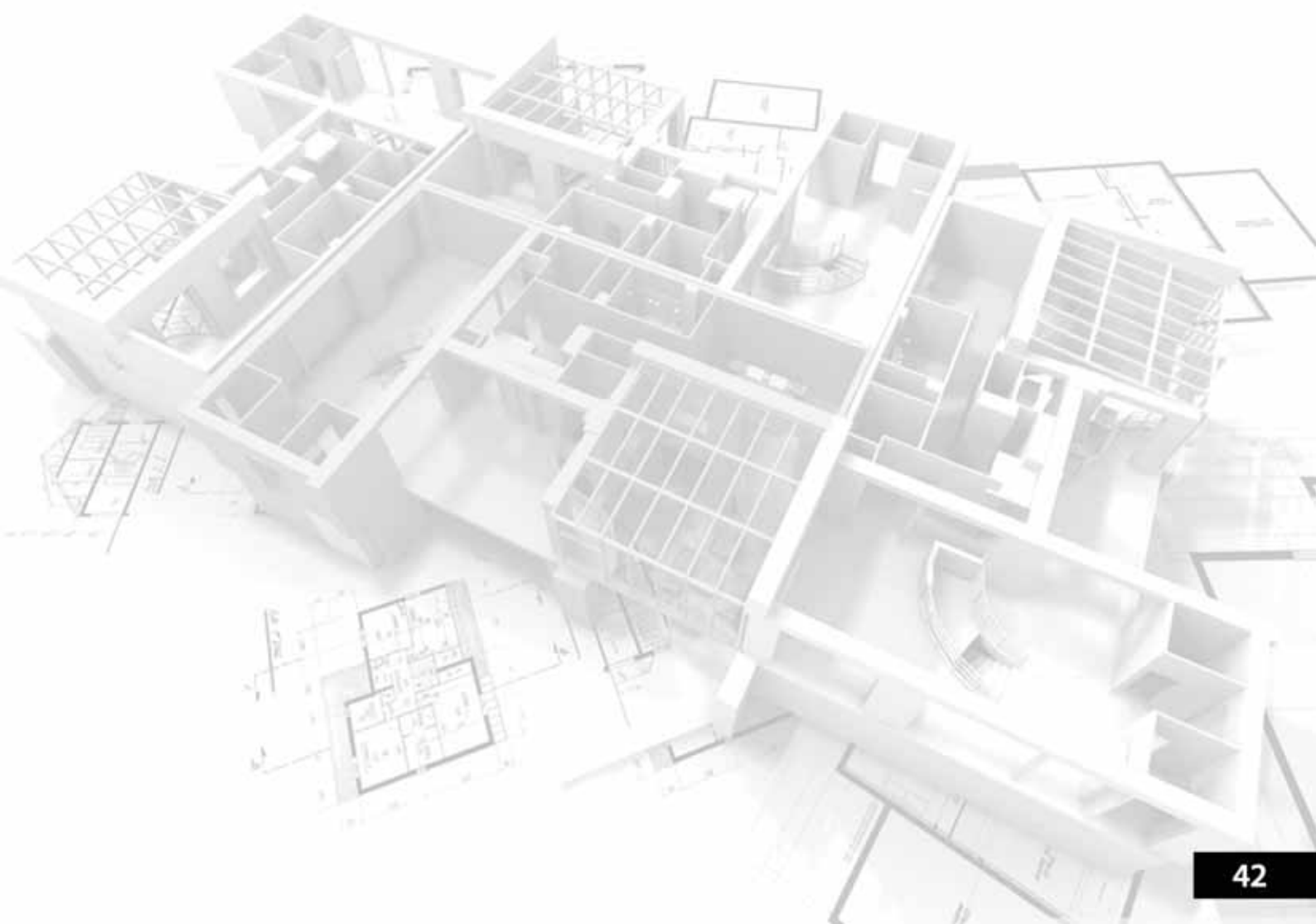
● Inspection by Ministry Of Health (Engineering Department)



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SITE CLEARANCE

week 29 to 32



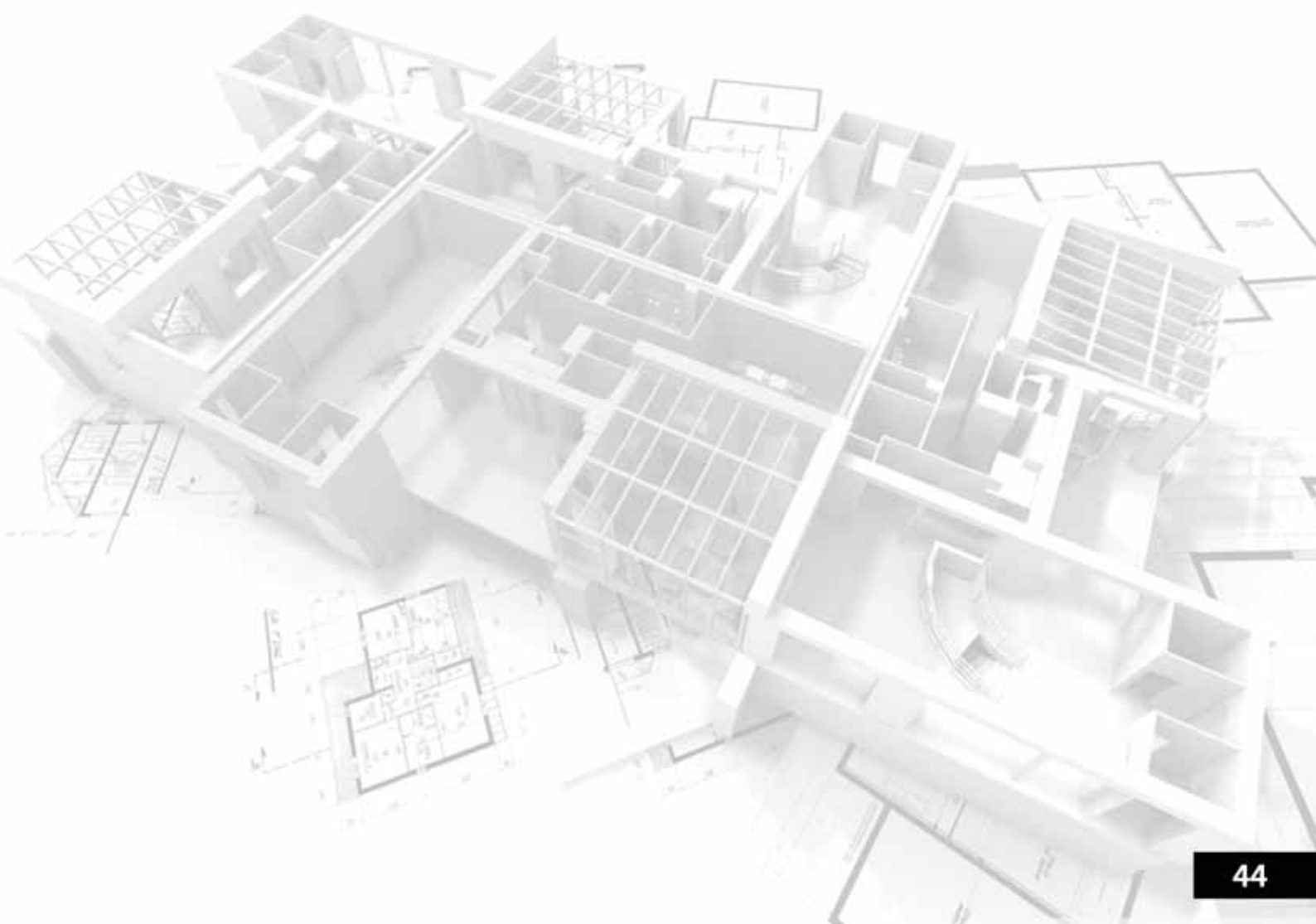
SITE CLEARANCE

Disposal of Waste Products



PROJECT SHOWCASE HOSPITAL UMUM SARAWAK, KUCHING

COMPLETED PROJECTS



COMPLETED PROJECT

Chiller System



COMPLETED PROJECT

● **New Cooling Tower**



COMPLETED PROJECT

• **New Make Up Water Tank**



COMPLETED PROJECT

New Chiller Switchboard



JTR SPECIALISATIONS

SUSTAINABLE ASSET & FACILITY
MAINTENANCE MANAGEMENT



ENERGY EFFICIENT
HVAC/ACMV SYSTEM

ENERGY MANAGEMENT -
ENERGY EFFICIENT SYSTEM



BUILDING, IAQ, HUMIDITY &
MOLD CONTROL

CLEANROOM - OPERATION THEATER,
BIOSAFETY LAB, GMP LAB & CLEANROOM



MEDICAL GAS PIPELINE SYSTEM

BUILDING MANAGEMENT/
AUTOMATION SYSTEM



HOT WATER & STEAM SYSTEM

PROJECT SHOWCASE

HOSPITAL UMUM SARAWAK, KUCHING

ENERGY EFFICIENT HVAC / ACMV SYSTEM



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