ARCHITECTURAL STRUCTURE

Week 8: Technical Drawing

Photo by Sergey Zolkin on Unsplash

Outline

1

INTRODUCTION

Aims

LOs

2

SEMINAR

- **GROUP DISCUSSION**
- **GROUP RECAP**

3
LECTURE

- WHAT IS TECHNICAL DRAWING

4
HANDS-ON EXERCISE

- BUILDING SURVEY
- MAKING DRAWINGS
- REFLECTIONS

Aims and objectives

- To understand the **rationale** of producing architectural (technical) drawings
- To gain knowledge on **what to include** in technical drawings
- To further understand **how to produce** technical drawings

Learning outcomes

Students will be able to..

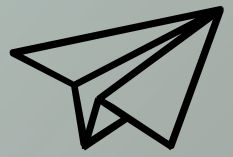
01 Be able to enumerate **necessary information** to be included

02 Plan on **how to create a** set of basic technical drawings

03 **Produce** a set of technical drawings of a simple house (Assessment 1)

Previously in Week 7..

Site visit and tour with Bruce Xu



1. **How much do you know** about technical drawings?
2. **Have you drawn** a technical drawing before?

https://PollEv.com/surveys/papyfWL0g9PaPG5egjmDI/respond

Common problem in practice:

- Incorrect or inconsistent scales being used across drawings.
- Doors opening the wrong way or with insufficient opening space (i.e. opening into other doors, cabinets, windows, etc.).
- Facilities located in impractical places.
- Undersized, impractical or awkward spaces.
- Poorly detailed junctions or abutments between different components or systems.
- Incorrect symbols.
- Inconsistent revision numbers.
- Poor reproduction.
- Un-buildable, or difficult to build elements.
- Missing components.
- Inconsistent information.
- Illegible writing.
- The use of acronyms that are not understood.
- Notes that are not understood.

Common mistakes on building drawings - Designing Buildings Wiki

ACTIVITIES

1. ACTIVITY 1- DISCUSSION IN GROUPS (USE GUIDING QUESTIONS, VIA DISQUS): 35 MINS
2. SUBMIT GROUP ANSWERS: 5 MINS
3. GROUP RECAP: 10 MINS

LECTURE

4. ACTIVITY 2- BUILDING SURVEY EXERCISE: 70 MINS
5. SUBMIT INDIVIDUAL REFLECTIONS (DISQUS): 5 MINS

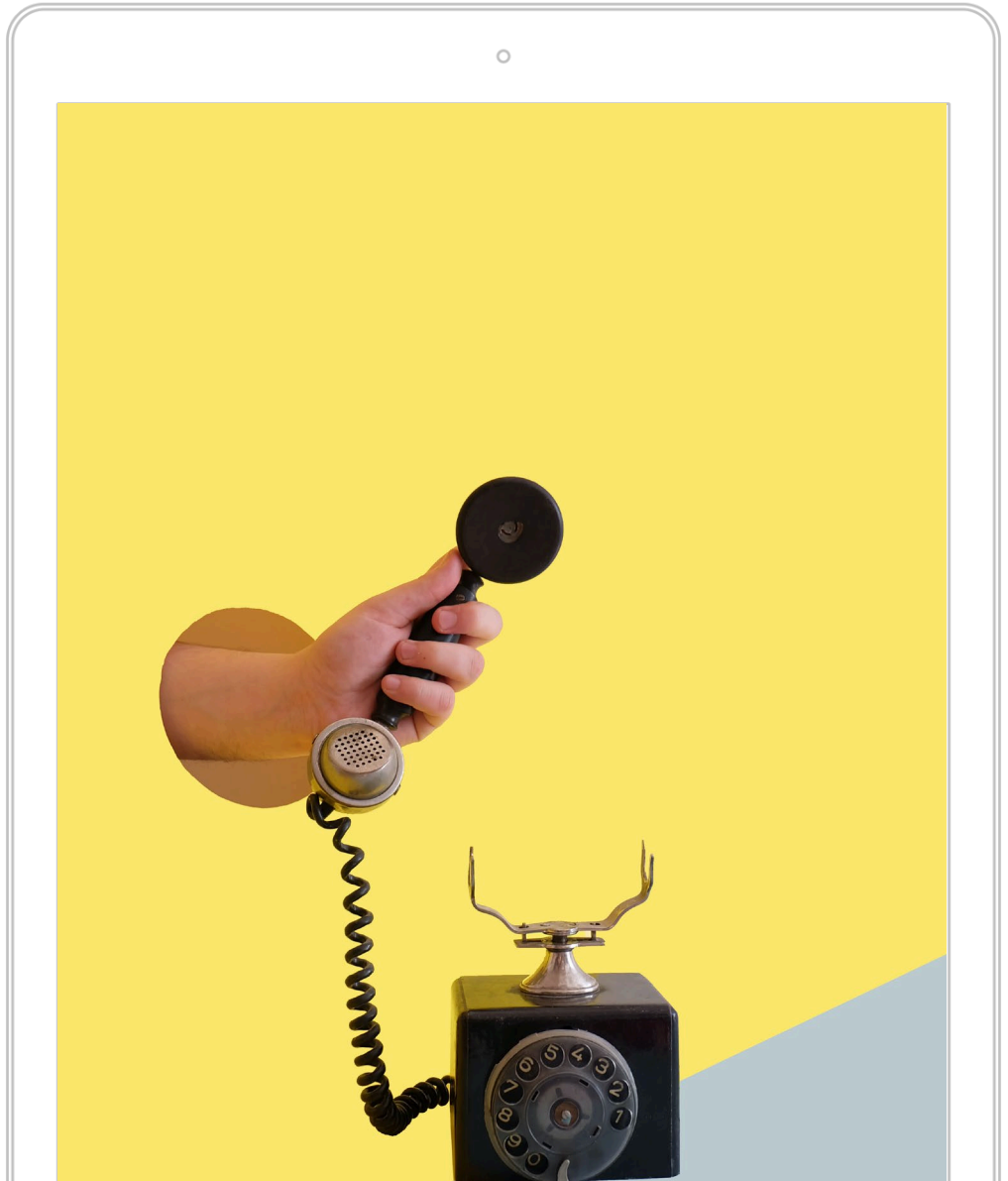


Photo by Elena Koycheva on Unsplash

ACTIVITY 1

Submit via PollEverywhere:

https://PollEv.com/surveys/PVPuDWbzRyUXkm2mpWDyL/respond

In your presentation group. Use these guiding questions to discuss:

1. **What is the purpose of technical drawings?**
2. **What kind of information is necessary to be included? List the absolute minimum information of each type of drawings (plan, elevation, etc..).**
3. **Who use them?**
4. **Who made them?**
5. **Who get to decide on the drawing convention (scale, template, etc?)**
6. **In what stages of architecture project technical drawings are used?**
7. **What do the dotted lines represent?**
8. **Why are there different hatching styles?**

35 + 5 mins

DURATION

GROUP RECAP:

PollEverywhere:

https://PollEv.com/surveys/PVPuDWbzRyUXkm2mpWDyL/respond

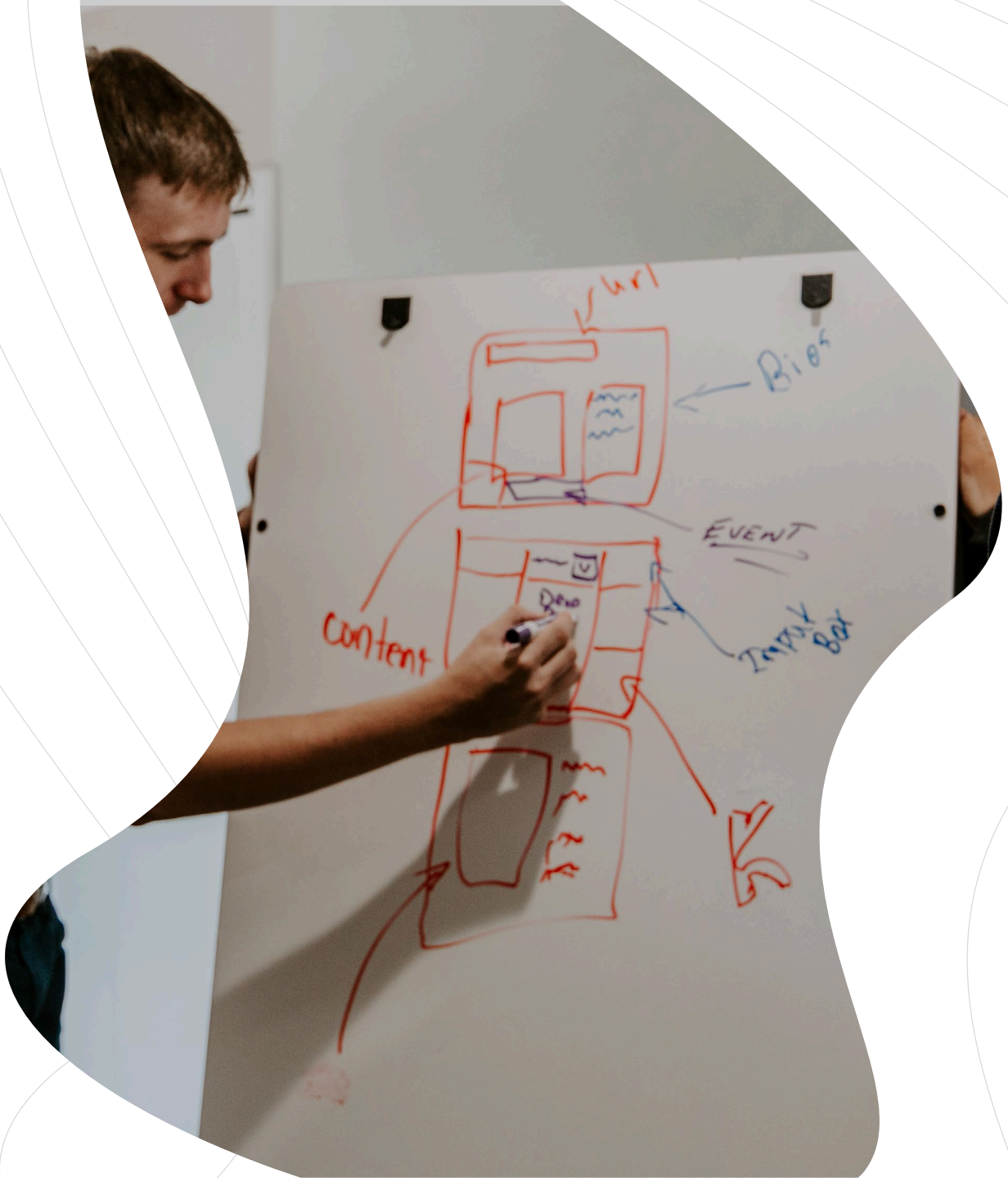


Photo by Kaleidico on Unsplash

Part 1:
Road map

Photo by Sven Mieke on Unsplash

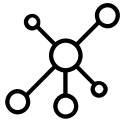
Project team

CLIENT TEAM

The commissioning team.

DESIGN TEAM

The team which is responsible for the design of the building and producing information required to manufacture and construct it.



CONSTRUCTION TEAM

Team which is contracted under a contract to undertake construction works.

STAKEHOLDERS

Project stakeholders are any party outside the project team who might influence direction of the design or create a project constraint.

Design team

Core members are:

- Lead designer
- Principle designer (usually sub-function of the lead designer role)
- Designers: architect, interior designer, landscape architect, etc
- Engineers: civil and structural and building services engineers
- Cost consultant
- Construction advisor
- Specialist consultants (fire engineer, acoustic consultant, façade engineer, sustainability consultant, etc..)

Core task in architecture projects:

- Agree appointments with the **professional team**
- Develop a **brief** with the client
- Create **concept designs** options
- **Coordinate** the design
- Prepare a **planning application**
- Apply for **planning consent**
- Develop a set of **construction information**
- Prepare a **tender**
- Obtain **consents** required **prior to construction**
- Award a **Building Contract**
- **Construct** the building
- **Inspect** the construction as it progresses
- **Hand over** the building.

RIBA. (2020). *RIBA Plan of Work* [Online]. Available: https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work [Accessed April 20th 2021.

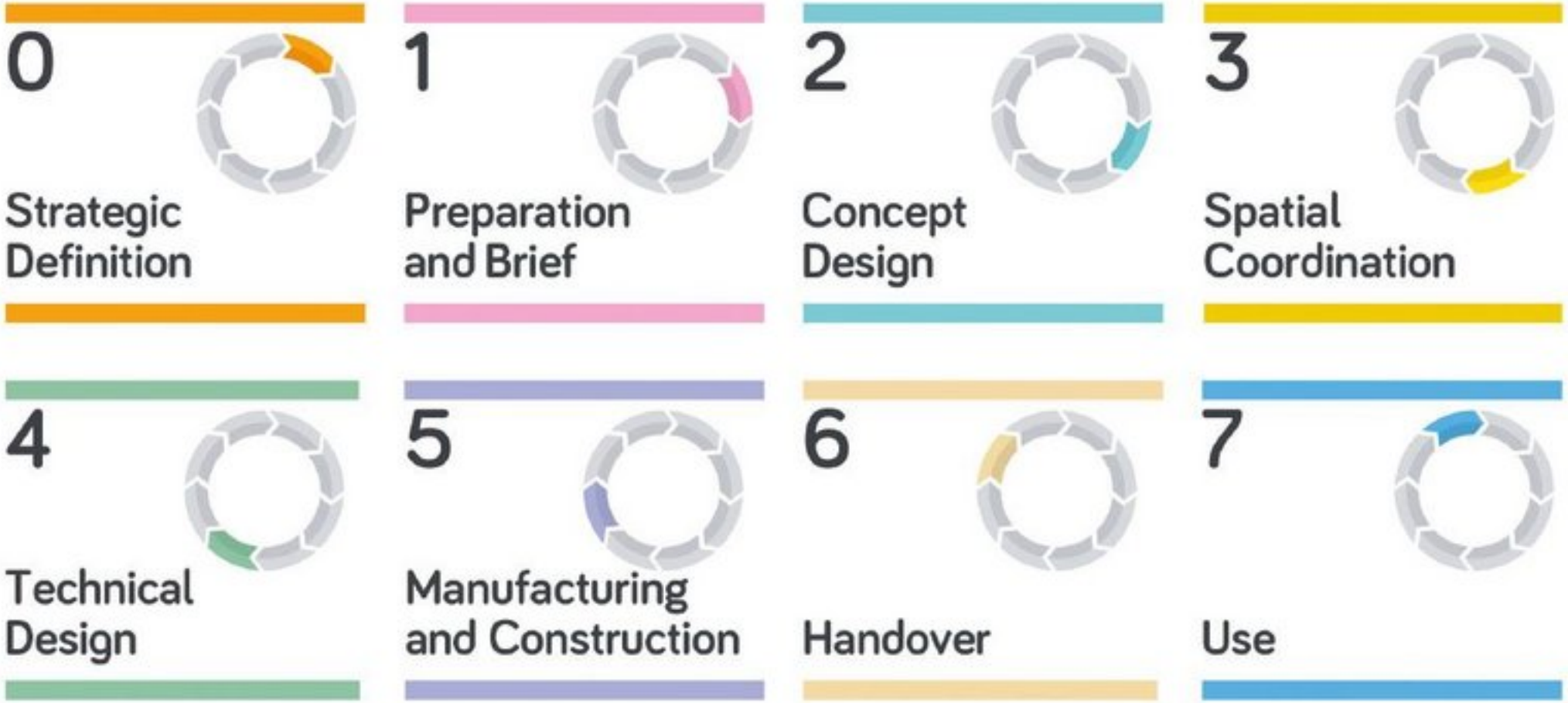
Same goal:
Providing project team with a **road map** for promoting consistency from one stage to the next.
To provide vital guidance to clients.

RIBA. (2020). *RIBA Plan of Work* [Online]. Available: https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work [Accessed April 20th 2021.

	Pre-Design		Design				Construction	Handover	In Use	End of Life
RIBA (UK)	0	1	2		3	4	5	6	7	
	Strategic Definition	Preparation and Brief	Concept Design	NOT USED	Developed Design	Technical Design	Construction	Handover & Close Out	In Use	NOT USED
ACE (Europe)	0	1	2.1	2.2	2.3	2.4	3		4	5
	Initiative	Initiation	Concept Design	Preliminary Design	Developed Design	Detailed Design	Construction	NOT USED	Building Use	End of Life
AIA (USA)			-		-	-	-			
	NOT USED	NOT USED	Schematic Design	NOT USED	Design Development	Construction Documents	Construction	NOT USED	NOT USED	NOT USED
APM (Global)	0	1	2		3	4	5	6	7	
	Strategy	Outcome Definition	Feasibility	NOT USED	Concept Design	Detailed Design	Delivery	Project Close	Benefits Realisation	NOT USED
Spain			-			-	-	-		
	NOT USED	NOT USED	Proyecto Básico	NOT USED	NOT USED	Proyecto de Ejecución	Dirección de Obra	Final de Obra	NOT USED	NOT USED
NATSPEC (Aus)		-	-	-	-	-	-		-	
	NOT USED	Establishment	Concept Design	Schematic Design	Design Development	Contract Documentation	Construction	NOT USED	Facility Management	NOT USED
NZCIC (NZ)		-	-	-	-	-	-		-	
	NOT USED	Pre-Design	Concept Design	Preliminary Design	Developed Design	Detailed Design	Construct	NOT USED	Operate	NOT USED
Russia			-	-	-	-	-			
	NOT USED	NOT USED	AGR Stage	Stage P	Tender Stage	Construction Documents	Construction	NOT USED	NOT USED	NOT USED
South Africa		1	2	3	-	4	5			
	NOT USED	Inception	Concept and Viability	Design Development	NOT USED	Documentation	Construction	Close Out	NOT USED	NOT USED

Figure 1: Comparison of international plans of work

RIBA 2020


0
Strategic Definition
1
Preparation and Brief
2
Concept Design
3
Spatial Coordination
4
Technical Design
5
Manufacturing and Construction
6
Handover
7
Use

RIBA Plan of Work 2020

The RIBA Plan of Work organises the process of briefing, designing, delivering, maintaining, operating and using a building into eight stages. It is a framework for all disciplines on construction projects and should be used solely as guidance for the preparation of detailed professional services and building contracts.

Stage Boundaries:

Stages 0-4 will generally be undertaken one after the other.

Stages 4 and 5 will overlap in the **Project Programme** for most projects.

Stage 5 commences when the contractor takes possession of the site and finishes at **Practical Completion**.

Stage 6 starts with the handover of the building to the client immediately after **Practical Completion** and finishes at the end of the **Defects Liability Period**.

Stage 7 starts concurrently with Stage 6 and lasts for the life of the building.

Planning Note:

Planning Applications are generally submitted at the end of Stage 3 and should only be submitted earlier when the threshold of information required has been met. If a **Planning Application** is made during Stage 3, a mid-stage gateway should be determined and it should be clear to the project team which tasks and deliverables will be required.
See *Overview* guidance.

Procurement:

The RIBA Plan of Work is procurement neutral – See *Overview* guidance for a detailed description of how each stage might be adjusted to accommodate the requirements of the **Procurement Strategy**.

ER Employer's Requirements

CP Contractor's Proposals

	0 Strategic Definition	1 Preparation and Briefing	2 Concept Design	3 Spatial Coordination	4 Technical Design	5 Manufacturing and Construction	6 Handover	7 Use
	← Projects span from Stage 1 to Stage 6; the outcome of Stage 0 may be the decision to initiate a project and Stage 7 covers the ongoing use of the building. →							
Stage Outcome at the end of the stage	The best means of achieving the **Client Requirements** confirmed If the outcome determines that a building is the best means of achieving the **Client Requirements**, the client proceeds to Stage 1	**Project Brief** approved by the client and confirmed that it can be accommodated on the site	**Architectural Concept** approved by the client and aligned to the **Project Brief** The brief remains "live" during Stage 2 and is derogated in response to the **Architectural Concept**	Architectural and engineering information **Spatially Coordinated**	All design information required to manufacture and construct the project completed Stage 4 will overlap with Stage 5 on most projects	Manufacturing, construction and **Commissioning** completed There is no design work in Stage 5 other than responding to **Site Queries**	Building handed over, **Aftercare** initiated and **Building Contract** concluded	Building used, operated and maintained efficiently Stage 7 starts concurrently with Stage 6 and lasts for the life of the building
Core Tasks during the stage **Project Strategies** might include: – **Conservation** (if applicable) – **Cost** – **Fire Safety** – **Health and Safety** – **Inclusive Design** – **Planning** – **Plan for Use** – **Procurement** – **Sustainability** *See RIBA Plan of Work 2020 Overview* for detailed guidance on **Project Strategies**	Prepare **Client Requirements** Develop **Business Case** for feasible options including review of **Project Risks** and **Project Budget** Ratify option that best delivers **Client Requirements** Review **Feedback** from previous projects Undertake **Site Appraisals** No design team required for Stages 0 and 1. Client advisers may be appointed to the client team to provide strategic advice and design thinking before Stage 2 commences.	Prepare **Project Brief** including **Project Outcomes** and **Sustainability Outcomes**, **Quality Aspirations** and **Spatial Requirements** Undertake **Feasibility Studies** Agree **Project Budget** Source **Site Information** including **Site Surveys** Prepare **Project Programme** Prepare **Project Execution Plan**	Prepare **Architectural Concept** incorporating **Strategic Engineering** requirements and aligned to **Cost Plan**, **Project Strategies** and **Outline Specification** Agree **Project Brief Derogations** Undertake **Design Reviews** with client and **Project Stakeholders** Prepare stage **Design Programme**	Undertake **Design Studies**, **Engineering Analysis** and **Cost Exercises** to test **Architectural Concept** resulting in **Spatially Coordinated** design aligned to updated **Cost Plan**, **Project Strategies** and **Outline Specification** Initiate **Change Control Procedures** Prepare stage **Design Programme**	Develop architectural and engineering technical design Prepare and coordinate design team **Building Systems** information Prepare and integrate specialist subcontractor **Building Systems** information Prepare stage **Design Programme** Specialist subcontractor designs are prepared and reviewed during Stage 4	Finalise **Site Logistics** Manufacture **Building Systems** and construct building Monitor progress against **Construction Programme** Inspect **Construction Quality** Resolve **Site Queries** as required Undertake **Commissioning** of building Prepare **Building Manual** Building handover tasks bridge Stages 5 and 6 as set out in the **Plan for Use Strategy**	Hand over building in line with **Plan for Use Strategy** Undertake review of **Project Performance** Undertake seasonal **Commissioning** Rectify defects Complete initial **Aftercare** tasks including light touch **Post Occupancy Evaluation**	Implement **Facilities Management** and **Asset Management** Undertake **Post Occupancy Evaluation** of building performance in use Verify **Project Outcomes** including **Sustainability Outcomes** Adaptation of a building (at the end of its useful life) triggers a new Stage 0
Core Statutory Processes during the stage: Planning Building Regulations Health and Safety (CDM)	Strategic appraisal of **Planning** considerations	Source pre-application **Planning Advice** Initiate collation of health and safety **Pre-construction Information**	Obtain pre-application **Planning Advice** Agree route to **Building Regulations** compliance Option: submit outline **Planning Application**	Review design against **Building Regulations** Prepare and submit **Planning Application** See ***Planning Note*** for guidance on submitting a **Planning Application** earlier than at end of Stage 3	Submit **Building Regulations Application** Discharge pre-commencement **Planning Conditions** Prepare **Construction Phase Plan** Submit form F10 to HSE if applicable	Carry out **Construction Phase Plan** Comply with **Planning Conditions** related to construction	Comply with **Planning Conditions** as required	Comply with **Planning Conditions** as required
Procurement Route Traditional	Appoint client team	Appoint design team			Tender / Appoint contractor			Appoint **Facilities Management** and **Asset Management** teams, and strategic advisers as needed
Design & Build 1 Stage					ER / CP / Appoint contractor			
Design & Build 2 Stage			ER	Pre-contract services agreement	CP / Appoint contractor			
Management Contract Construction Management			Appoint contractor					
Contractor-led			ER	Preferred bidder	CP / Appoint contractor			
Information Exchanges at the end of the stage	**Client Requirements** **Business Case**	**Project Brief** **Feasibility Studies** **Site Information** **Project Budget** **Project Programme** **Procurement Strategy** **Responsibility Matrix** **Information Requirements**	**Project Brief Derogations** Signed off **Stage Report** **Project Strategies** **Outline Specification** **Cost Plan**	Signed off **Stage Report** **Project Strategies** Updated **Outline Specification** Updated **Cost Plan** **Planning Application**	**Manufacturing Information** **Construction Information** **Final Specifications** Residual **Project Strategies** **Building Regulations Application**	**Building Manual** including **Health and Safety File** and **Fire Safety Information** **Practical Completion** certificate including **Defects List** **Asset Information** If **Verified Construction Information** is required, verification tasks must be defined	**Feedback** on **Project Performance** **Final Certificate** **Feedback** from light touch **Post Occupancy Evaluation**	**Feedback** from **Post Occupancy Evaluation** Updated **Building Manual** including **Health and Safety File** and **Fire Safety Information** as necessary

RIBA Architecture.com

Core RIBA Plan of Work terms are defined in the *RIBA Plan of Work 2020 Overview* glossary and set in **Bold Type**.

Further guidance and detailed stage descriptions are included in the *RIBA Plan of Work 2020 Overview*.

4 Technical Design

The RIBA Plan of Work organises the process of briefing, designing, delivering, maintaining, operating and using a building into eight stages. It is a framework for all disciplines on construction projects and should be used solely as guidance for the preparation of detailed professional services and building contracts.

Stage Outcome
at the end of the stage

All design information required to manufacture and construct the project completed

Stage 4 will overlap with Stage 5 on most projects

Core Tasks
during the stage

Develop architectural and engineering technical design

Prepare and coordinate design team **Building Systems** information

Prepare and integrate specialist subcontractor **Building Systems** information

Prepare stage **Design Programme**

Project Strategies might include:
- **Conservation** (if applicable)
- **Cost**
- **Fire Safety**
- **Health and Safety**
- **Inclusive Design**
- **Planning**
- **Plan for Use**
- **Procurement**
- **Sustainability**

See *RIBA Plan of Work 2020 Overview* for detailed guidance on **Project Strategies**

Specialist subcontractor designs are prepared and reviewed during Stage 4

Information Exchanges
at the end of the stage

Manufacturing Information

Construction Information

Final Specifications

Residual **Project Strategies**

Building Regulations Application

Part 2: Rationale of technical drawings

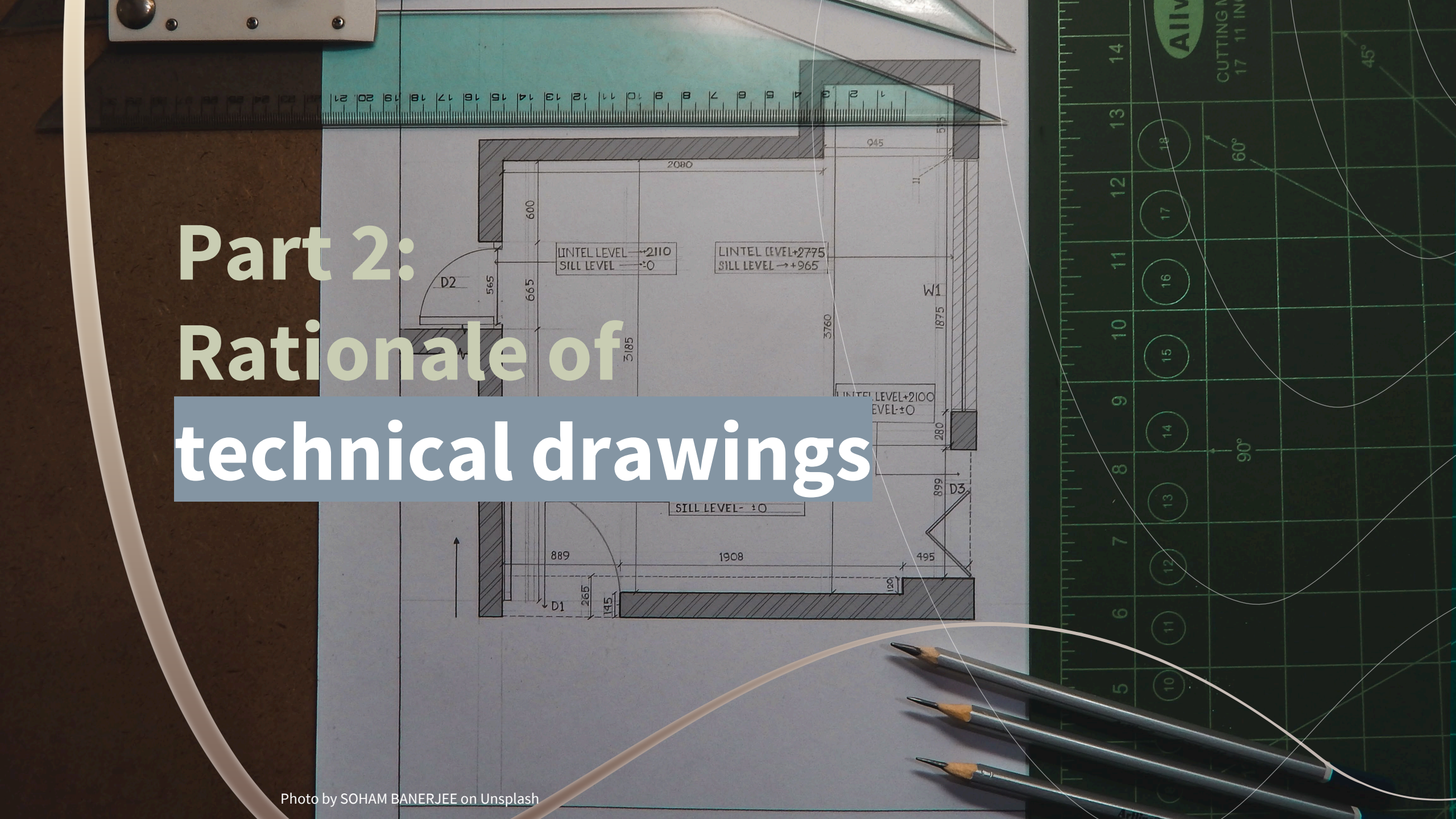
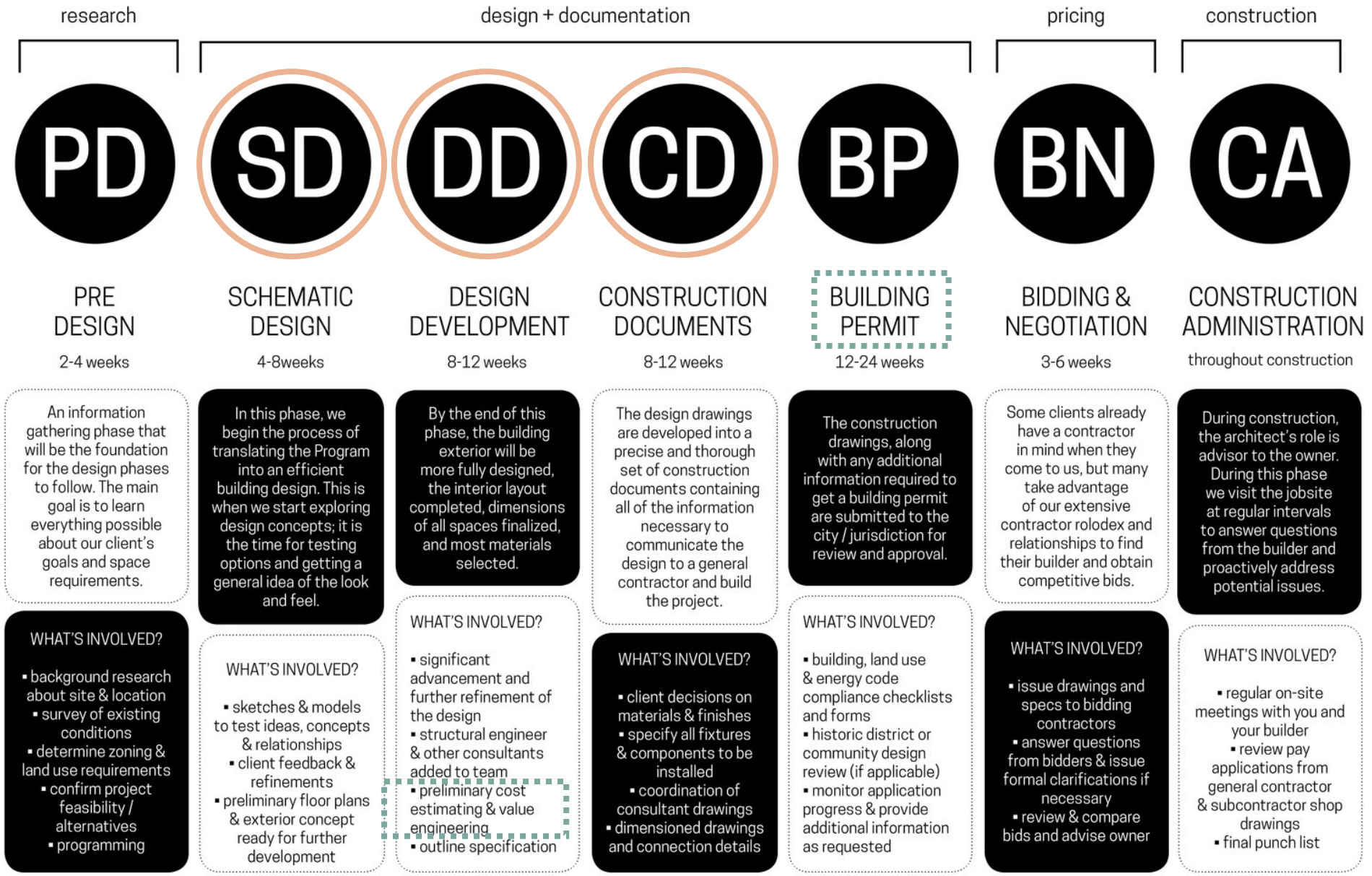


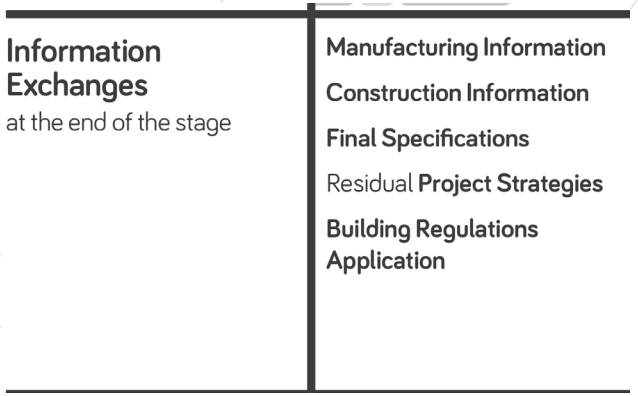
Photo by SOHAM BANERJEE on Unsplash



Architecture Explained: The Phases of Designing & Building a Project — WC STUDIO architects (wc-studio.com)

Why do we need to make technical drawings?

Apart from building information to be conveyed to other parties, we want to make sure that all cost will be included. As the architect we need to **specify** **so they can be calculated**. Also to provide visualisation to authority to obtain building permit.



Part 3:

Drawing convention

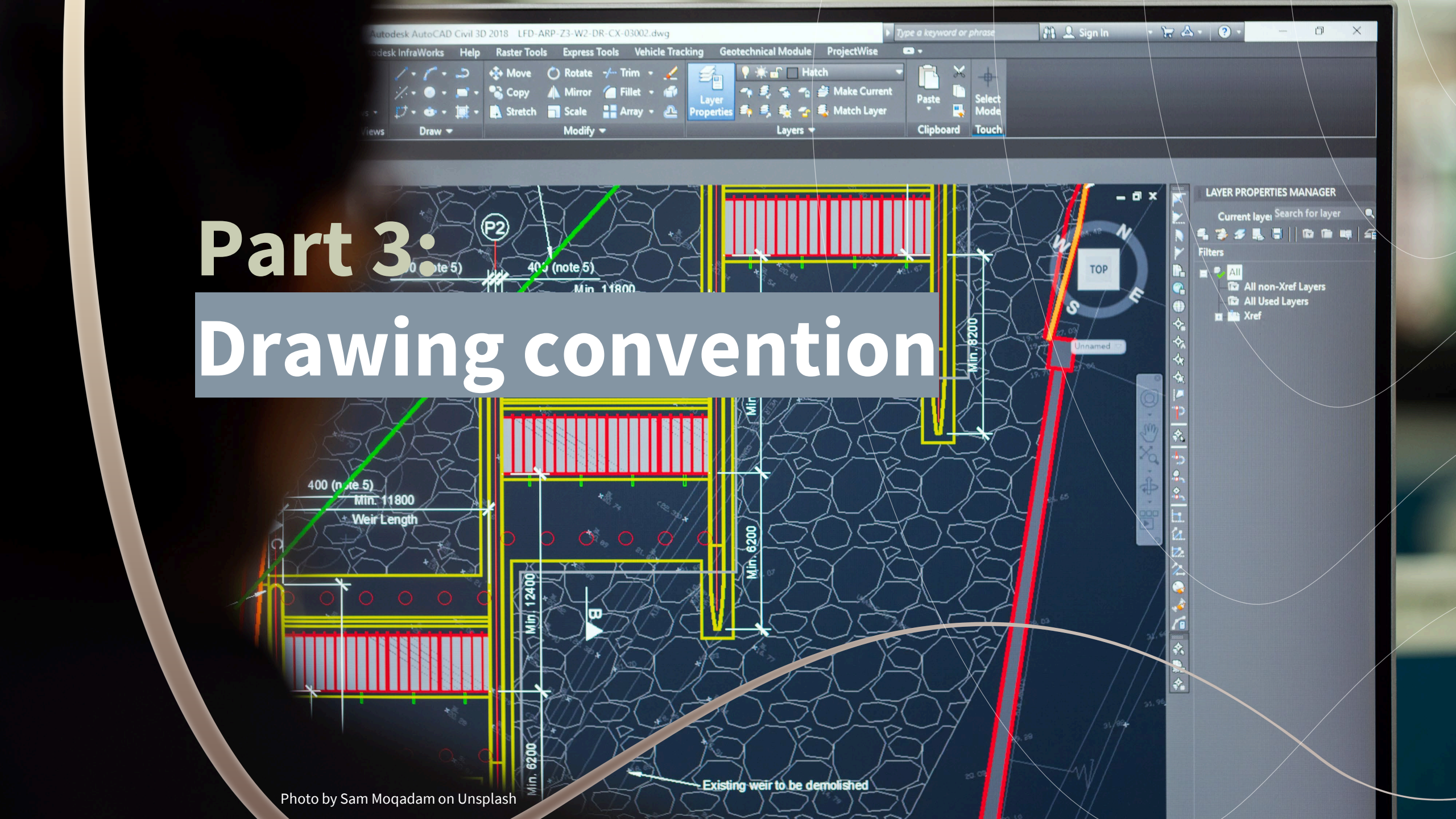


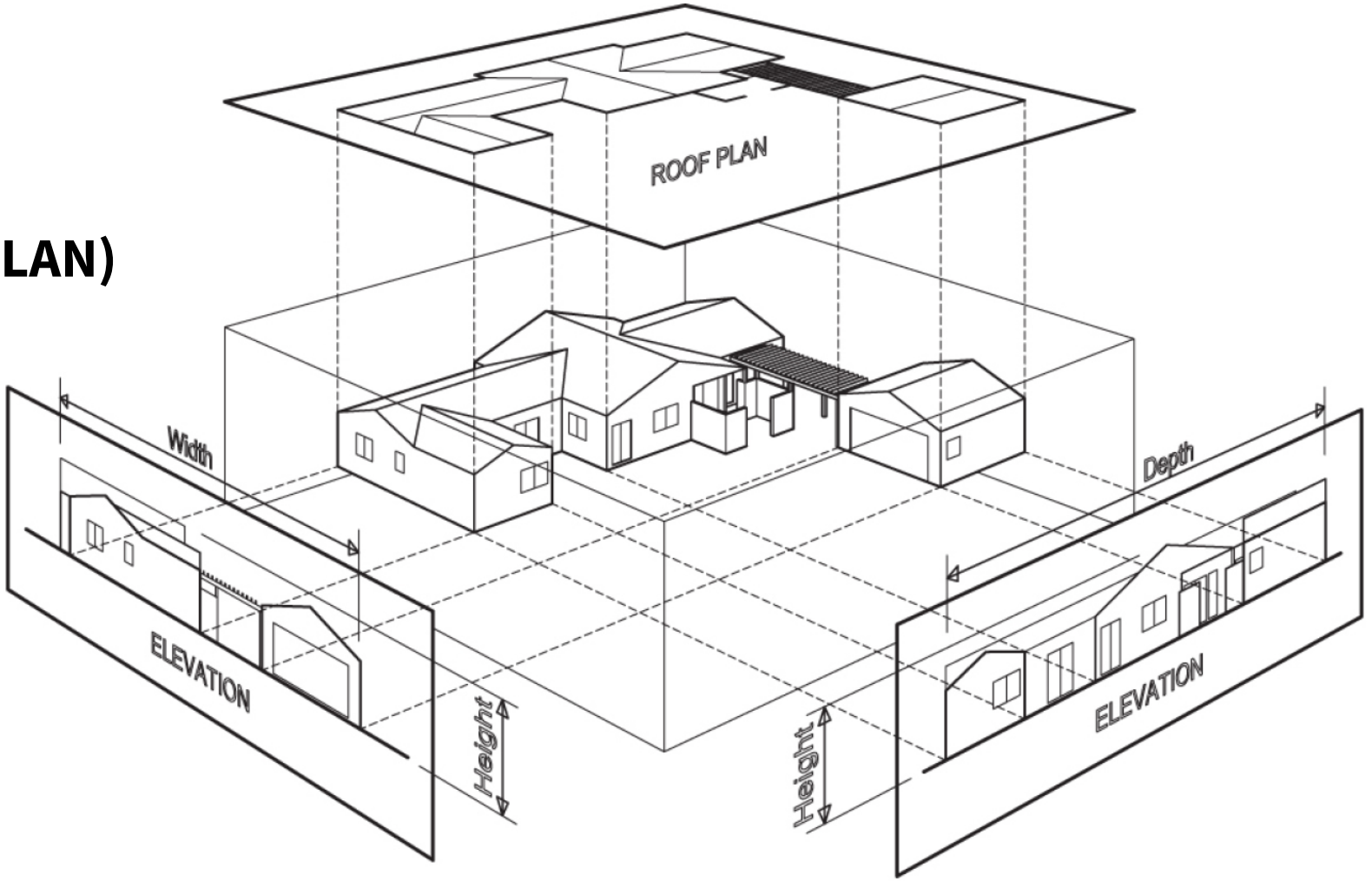
Photo by Sam Moqadam on Unsplash

SUMMARY:

- Parallel projections
- Paper formats
- Boundary lines
- Grid
- Scale
- North arrow
- Architectural lines
- Architectural lettering
- Material hatching
- Dimensions
- Symbols
- Legibility of drawings

Parallel projections

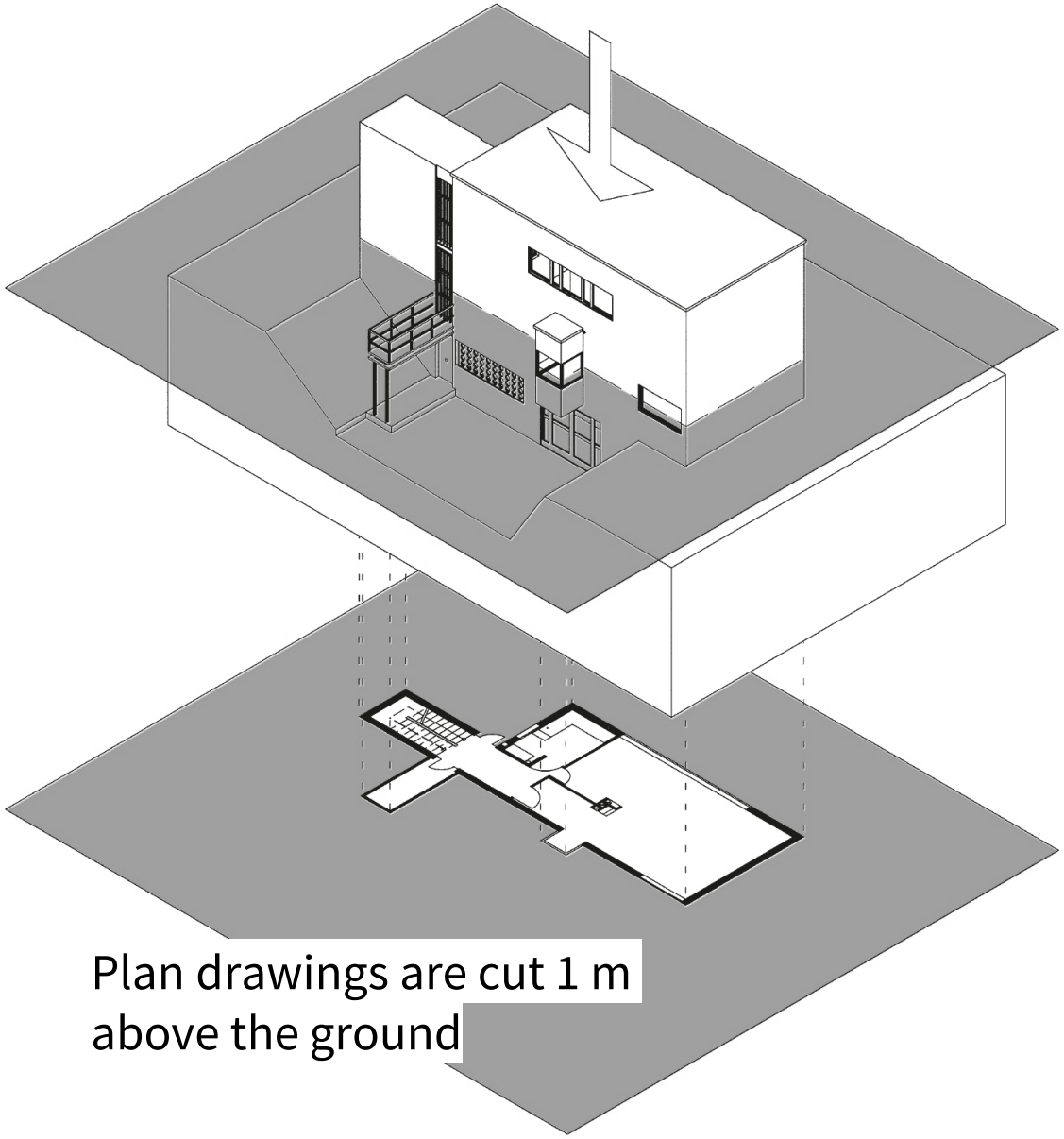
TOP VIEW (ROOF PLAN)
PLAN VIEW
ELEVATION
SECTION



Wakita, O. A. & Linde, R. M. (2003). *The professional practice of architectural working drawings*, John Wiley & Sons.

Parallel projections

TOP VIEW (ROOF PLAN)
PLAN VIEW
ELEVATION
SECTION

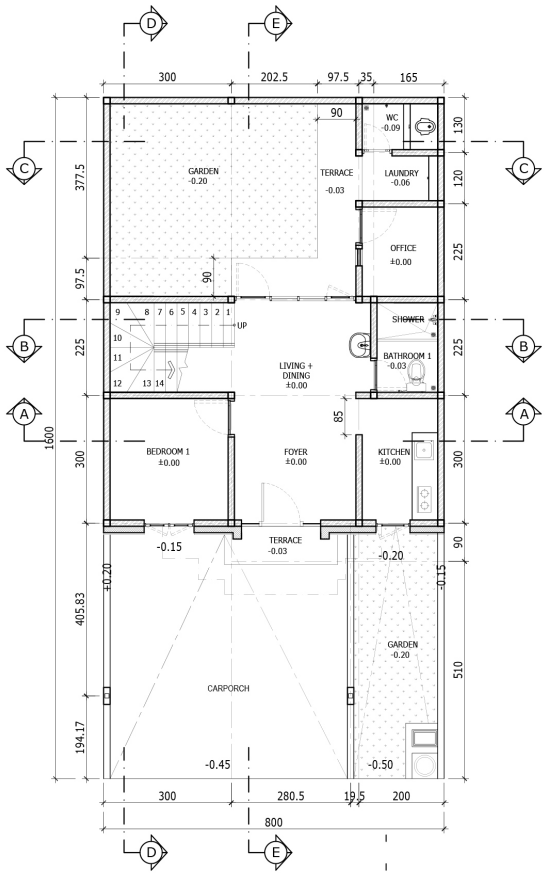


Plan drawings are cut 1 m above the ground

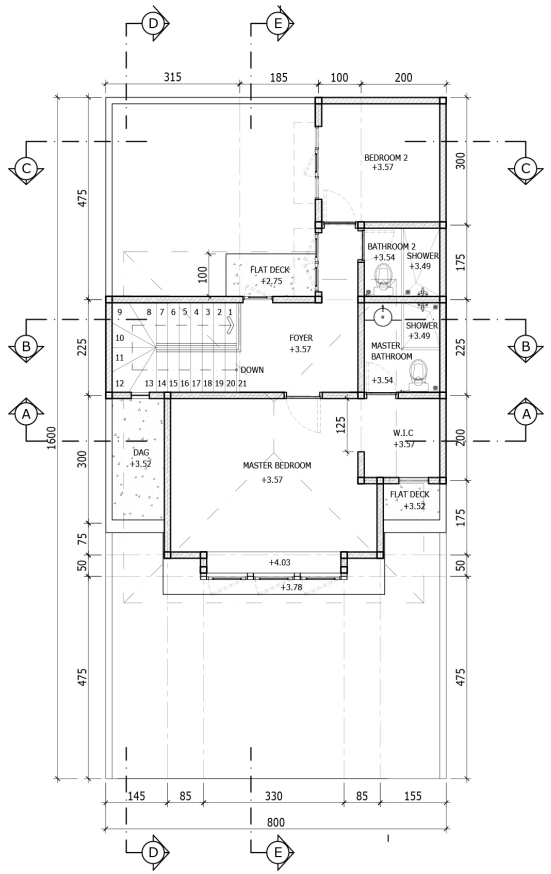
Bielefeld, B. & Skiba, I. (2017). *Basics technical drawing*, Birkhäuser.

Paper formats

FOR REFERENCE ONLY



FIRST FLOOR PLAN
SCALE 1 : 100



SECOND FLOOR PLAN
SCALE 1 : 100

DATE :

NO.	REVISION :

OWNER:

ARCHITECT:

STRUCTURAL ENGINEER:

ME CONSULTANT:

DRAWING TITLE	SCALE :
FLOOR PLANS	1:100

APPROVAL :	

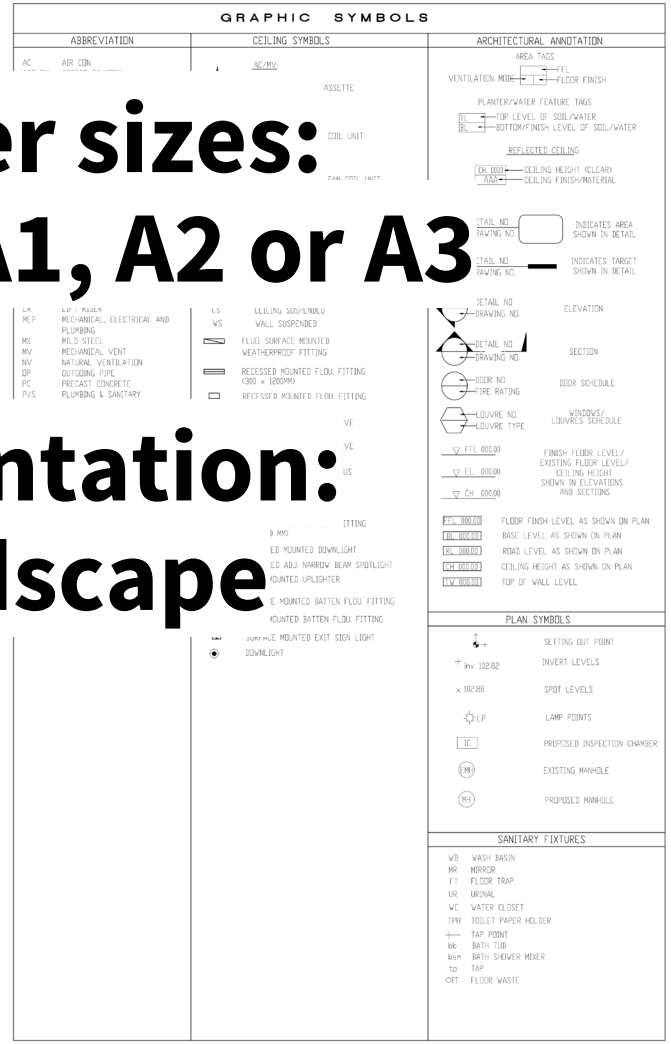
TEMPLATE:

- Date
- Revision number
- Owner (full address) or project location
- Architect (full address including contact number)
- Consultants (full address)
- Drawing title
- Scale
- Changes made
- Project name

Paper sizes: A0, A1, A2 or A3

Orientation: Landscape

(mostly)



INDEX OF DRAWINGS - VOLUME 1

SERIES	CONTENT	DWG NO.	DRAWING TITLE	SCALE	SIZE	REV	REMARKS
0000	INDEX OF DRAWINGS	TD-0051	INDEX OF DRAWINGS-1	-	A0	0	
1000	SITE PLAN AND LOCATION PLAN	TD-1001	SITE PLAN AND LOCATION PLAN	A1	A0	0	
1050	SITE TOPO SURVEY	TD-1051	SITE TOPO SURVEY - 1	A1	A0	0	
		TD-1052	SITE TOPO SURVEY - 2	A1	A0	0	
		TD-1053	SITE TOPO SURVEY - 3	A1	A0	0	
		TD-1054	SITE TOPO SURVEY - 4	A1	A0	0	
2000	OVERVIEW PLANS	TD-2001	BLOCK A & B UPPER BASEMENT 1 (UPPER DECK)	A1	A0	0	
		TD-2002	BLOCK A, B, & C - 1ST STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2003	BLOCK A, B, & C - 2ND STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2004	BLOCK A, B, & C - 3RD STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2005	BLOCK A, B, & C - 4TH STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2006	BLOCK A, B, & C - 5TH STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2007	BLOCK A, B, & C - ROOF TERRACE PLAN (UPPER DECK)	A1	A0	0	
		TD-2008	BLOCK A, B, & C - ROOF PLAN (UPPER DECK)	A1	A0	0	
		TD-2009	BLOCK D, E, F, G, & H - LOWER BASEMENT (LOWER DECK)	A1	A0	0	
		TD-2010	BLOCK D, E, F, G, & H - 1ST STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2011	BLOCK D, E, F, G, & H - 2ND STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2012	BLOCK D, E, F, G, & H - 3RD STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2013	BLOCK D, G, & H - 4TH STOREY PLAN (LOWER DECK) BLOCK E & F ROOF TERRACE	A1	A0	0	
		TD-2014	BLOCK D, G, & H - 5TH STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2015	BLOCK D, G, & H - ROOF TERRACE PLAN (LOWER DECK)	A1	A0	0	
		TD-2016	BLOCK D, G, & H - ROOF PLAN (LOWER DECK)	A1	A0	0	
2100	BLOCK PLANS	TD-2101	BLOCK A- UPPER BASEMENT 1 & 1ST STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2102	BLOCK A- 2ND TO 5TH STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2103	BLOCK A- ROOF TERRACE PLAN & ROOF PLAN (UPPER DECK)	A1	A0	0	
		TD-2104	BLOCK B- UPPER BASEMENT 1ST TO 4TH STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2105	BLOCK B- 5TH STOREY TO ROOF PLAN (UPPER DECK)	A1	A0	0	
		TD-2106	BLOCK C- 1ST, 2ND TO 4TH STOREY PLAN (UPPER DECK)	A1	A0	0	
		TD-2107	BLOCK C- 5TH STOREY TO ROOF PLAN (UPPER DECK)	A1	A0	0	
		TD-2108	BLOCK D_ LOWER BASEMENT 1 & 1ST STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2109	BLOCK D_ 2ND TO 4TH & 5TH STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2110	BLOCK D_ ROOF TERRACE & ROOF PLAN (LOWER DECK)	A1	A0	0	
		TD-2211	BLOCK E- LOWER BASEMENT 1 1ST & 2ND STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2212	BLOCK E- 3RD STOREY TO GREEN ROOF PLAN (LOWER DECK)	A1	A0	0	
		TD-2213	BLOCK F- LOWER BASEMENT 1 & 1ST STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2214	BLOCK F- 2ND STOREY TO GREEN ROOF PLAN (LOWER DECK)	A1	A0	0	
		TD-2215	BLOCK G- LOWER BASEMENT 1 & 1ST STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2216	BLOCK G_ 2ND TO 4TH & 5TH STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2217	BLOCK G_ ROOF TERRACE & ROOF PLAN (LOWER DECK)	A1	A0	0	
		TD-2218	BLOCK H- LOWER BASEMENT 1 & 1ST STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2219	BLOCK H_ 2ND TO 4TH & 5TH STOREY PLAN (LOWER DECK)	A1	A0	0	
		TD-2220	BLOCK H_ ROOF TERRACE & ROOF PLAN (LOWER DECK)	A1	A0	0	
3000	SITE SECTIONS	TD-3001	SITE SECTIONS A-A, B-B, C-C	A1	A0	0	
		TD-3002	SITE SECTIONS D-D, E-E, F-F	A1	A0	0	
3100	BLOCK SECTIONS	TD-3101	BLOCK A- SECTION AA, SECTION AB & SECTION AC	A1	A0	0	
		TD-3102	BLOCK B - SECTION BA, SECTION BB, SECTION BC & SECTION BD	A1	A0	0	
		TD-3103	BLOCK C - SECTION CA & SECTION CB	A1	A0	0	
		TD-3104	BLOCK D - SECTION DA & DB	A1	A0	0	
		TD-3105	BLOCK E - SECTION EA & EB	A1	A0	0	
		TD-3106	BLOCK F - SECTION FA, FB & FC	A1	A0	0	
		TD-3107	BLOCK G - SECTION GA, GB & SECTION GC	A1	A0	0	
		TD-3108	BLOCK H - SECTION HA, HB & HC	A1	A0	0	
3200	SITE ELEVATIONS	TD-3201	SITE ELEVATIONS - ELEVATION 1 & 2	A1	A0	0	
3300	BLOCK ELEVATIONS	TD-3301	BLOCK A - ELEVATION A1, A2, A3 & A4	A1	A0	0	
		TD-3302	BLOCK B - ELEVATION B1, B2, B3 & B4	A1	A0	0	
		TD-3303	BLOCK C - ELEVATION C1, C2, C3 & C4	A1	A0	0	
		TD-3304	BLOCK D - ELEVATION D1, D2, D3 & D4	A1	A0	0	
		TD-3305	BLOCK E - ELEVATION E1, E2, E3 & E4	A1	A0	0	
		TD-3306	BLOCK F - ELEVATION F1, F2, F3 & F4	A1	A0	0	
		TD-3307	BLOCK G - ELEVATION G1, D2, G3 & G4	A1	A0	0	
		TD-3308	BLOCK H - ELEVATION H1, H2, H3 & H4	A1	A0	0	
3500	COMMUNAL FACILITIES	TD-3501	CLUBHOUSE-PLANS, ELEVATIONS, & SECTIONS	A1	A0	0	
		TD-3502	GYM & TOILET-PLANS, ELEVATIONS, & SECTIONS	A1	A0	0	
3550	SERVICE FACILITIES	TD-3550	MN CENTRE & GUARD HOUSE PLANS, SECTIONS & ELEVATIONS	A1	A0	0	

SERIES	CONTENT	DWG NO.	DRAWING TITLE	SCALE	SIZE	REV	REMARKS
6000	M/S DETAILS	TD-6001	BLK A M/S DETAIL PLAN - 3 BED, TYPE A, 1 BRM STUDIO - 1ST - 4TH STOREY W/ MIRROR IMAGE	A1	A0	0	
		TD-6002	BLK A M/S DETAIL PLAN 2 BRM - TYPE 4 - 2ND - 4TH STOREY W/ MIRROR IMAGE	A1	A0	0	
		TD-6003	BLK A M/S DETAIL SECTION, TYPE 4 - 1ST - 4TH STOREY	A1	A0	0	
		TD-6004	BLK A M/S DETAIL SECTION OF TYPE A, 1 BRM STUDIO - 1ST - 5TH STOREY	A1	A0	0	
		TD-6005	BLK B M/S DETAIL PLAN 2 BRM - TYPE 2 PES - 1ST STOREY, 2ND STOREY & 3RD STOREY	A1	A0	0	
		TD-6006	BLK B M/S DETAIL SECTION - 2 BRM - TYPE 2 PES -	A1	A0	0	
		TD-6007	BLK C M/S DETAIL PLAN 2 BRM - TYPE 2G PES - 1ST STOREY, 2ND STOREY & 3RD STOREY	A1	A0	0	
		TD-6008	BLK C M/S DETAIL SECTION - 2 BRM - TYPE 2G PES -	A1	A0	0	
		TD-6509	BLK F M/S DETAIL SECTION - TYPE 2F, 2H & TYPE 2J PM -	A1	A0	0	
		TD-6510	BLK F M/S DETAIL PLAN OF 3 BRM - TYPE 2F - 1ST STOREY & 2ND STOREY W/ MIRROR IMAGE	A1	A0	0	
		TD-6511	BLK F M/S DETAIL PLAN OF 3 BRM - TYPE 2F - 1ST STOREY & 2ND STOREY W/ MIRROR IMAGE	A1	A0	0	
		TD-6512	BLK F M/S DETAIL PLAN OF 3 BRM - TYPE 2 - 4 BRM, 3RD STOREY	A1	A0	0	
		TD-6521	TYPICAL RC TRELLIS DETAIL	A1	A0	0	
		TD-6522	KEY PLAN OF RC TRELLIS 1	A1	A0	0	
		TD-6523	KEY PLAN OF RC TRELLIS 2	A1	A0	0	
7300	FACADE DETAILS	TD-7301	TYPICAL FACADE DETAILS - 1	A1	A0	0	
		TD-7302	TYPICAL FACADE DETAILS - 2	A1	A0	0	
8000	STAIR DETAILS	TD-8001	BLK A - STAIRCASE PLANS & SECTION	A1	A0	0	
		TD-8002	BLK B - STAIRCASE PLANS	A1	A0	0	
		TD-8003	BLK B - STAIRCASE SECTION	A1	A0	0	
		TD-8004	BLK C - STAIRCASE PLANS	A1	A0	0	
		TD-8005	BLK C - STAIRCASE SECTIONS	A1	A0	0	
		TD-8006	BLK D - STAIRCASE PLANS & SECTION	A1	A0	0	
		TD-8007	BLK E - STAIRCASE PLANS & SECTION	A1	A0	0	
		TD-8008	BLK F - STAIRCASE PLANS & SECTION	A1	A0	0	
		TD-8009	BLK G1 - STAIRCASE PLANS & SECTION	A1	A0	0	
		TD-8010	BLK G2 - STAIRCASE 2 PLANS & SECTION	A1	A0	0	
		TD-8011	BLK H1 - STAIRCASE PLANS & SECTION	A1	A0	0	

CONSTRUCTION DRAWING

REV	DATE	AMENDMENTS

NOTES:

ONLY FIGURED DIMENSIONS ARE TO BE INFERRED FROM. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.

APPLICANT:
FCL ESTATES PTE LTD
438 ALEXANDRA ROAD #02-00
SINGAPORE 119958

Mr CHEANG KOK KHEONG

ARCHITECT:

I, _____ (ID/PP NO. _____) HEREBY DECLARE THAT :-
a) I AM NOT THE OWNER OF THE LAND WITHIN THE MEANING OF THE TERM "OWNER" AS DEFINED IN SECTION 2 OF THE PLANNING ACT (CAP 232, 1998ED); AND
b) I HAVE SHOWN THIS PLAN TO THE OWNER(S) OF THE LAND, AND HAVE OBTAINED THE CONSENT OF THE OWNER(S) TO SUBMIT THIS PLAN TO THE COMPETENT AUTHORITY UNDER THE PLANNING ACT (CAP 232, 1998ED).

YEO SEW HAP
(ID NO. S [illegible])

SAA ARCHITECTS PTE LTD
2, BUKIT MERAH CENTRAL #17-02, SINGAPORE 159835
TEL:6220-0411 FAX:6224-5929

MMA
Miyake Masaki Associates
2-20-7-201 Tomigaya Shibuya-ku Tokyo JAPAN (post code) 151-0063
+81 3 5481-8022 (IP) +81 80 4967-5483
E-mail : miyakemasaki@hotmail.com

FCL MANAGEMENT SERVICES PTE LTD	Project Manager
SAA ARCHITECTS PTE LTD in association with MIYAKE MASAKI ASSOCIATES	Architect
EC CONSULTANTS PTE LTD	Structural Engineers
RI MACS PTE LTD	Mechanical & Electrical Engineers
DAVIS LANGDON & SEAH S'PORE PTE LTD	Quantity Surveyor
D.O DESIGN PTE LTD	Landscape Architect
	Interior Designer

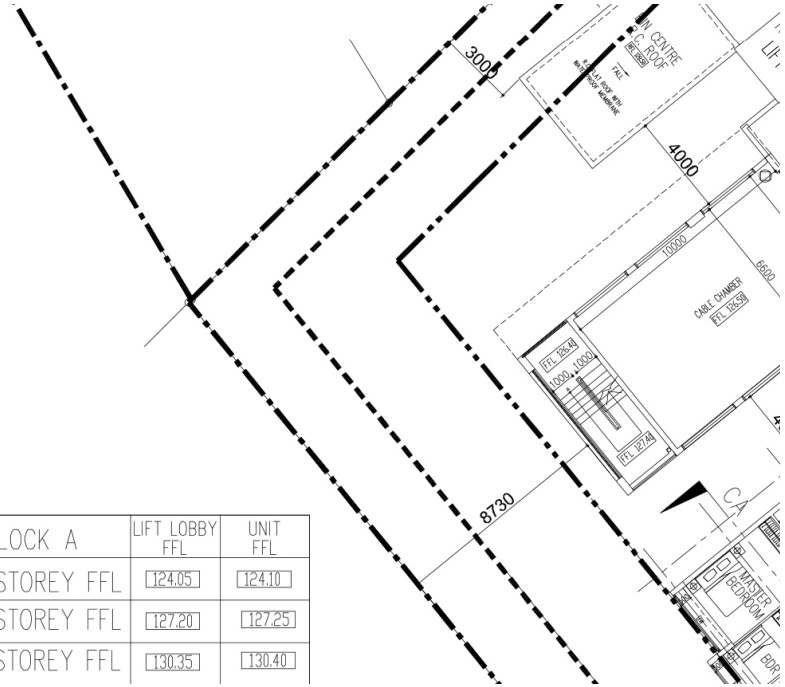
PROJECT:
PROPOSED ERECTION OF CONDOMINIUM HOUSING DEVELOPMENT COMPRISING 4 BLOCKS (E1, E2, E3 & F) OF 3 STOREY FLATS AND 6 BLOCKS (A, B, C, D, G & H) OF 5 STOREY FLATS (TOTAL 393 UNITS) WITH BASEMENT CARPARKS AND COMMUNAL FACILITIES AT SIGLAP ROAD

DRAWING TITLE:
INDEX OF DRAWINGS

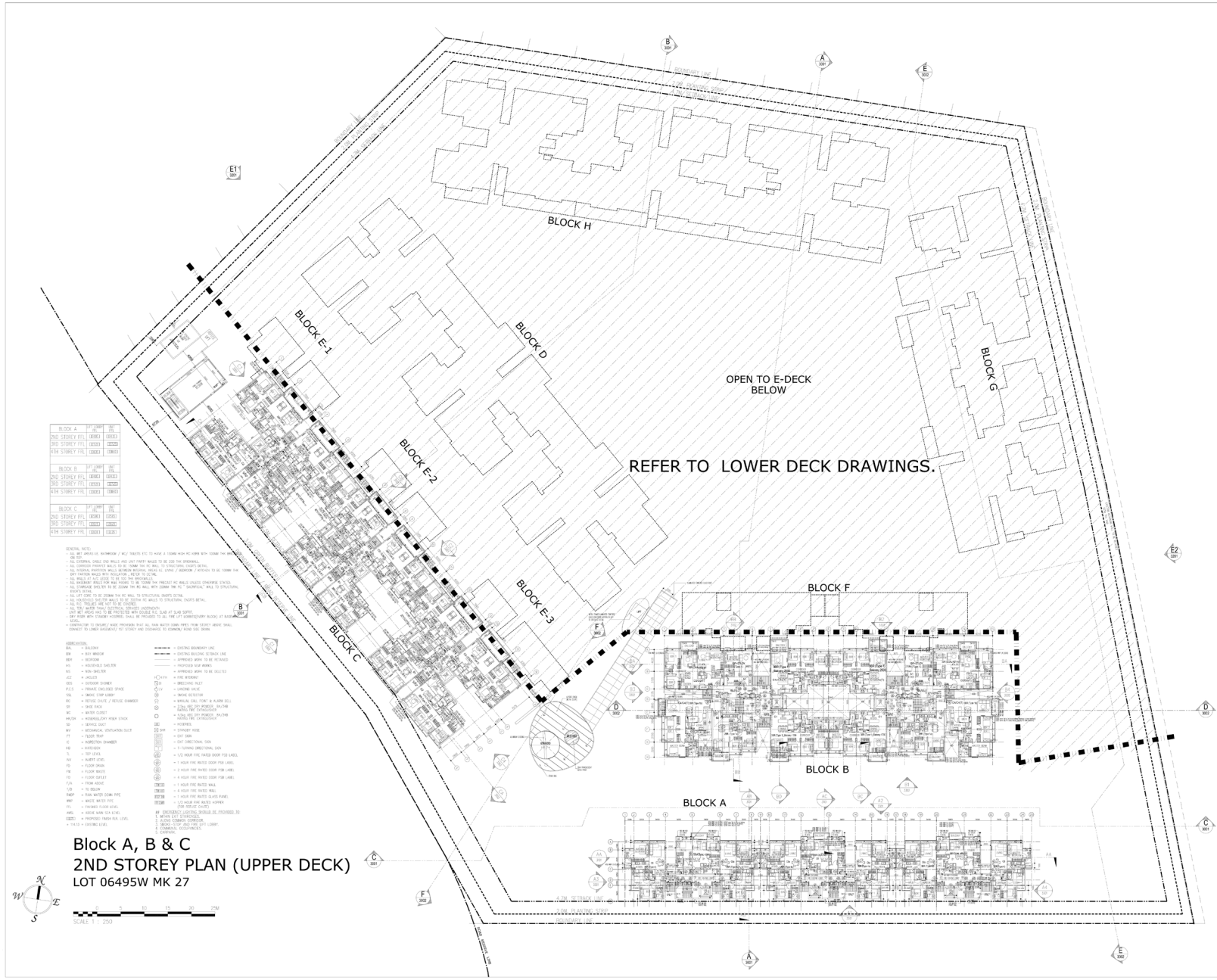
LAND TENURE:	DIRECTOR IN CHARGE:	PROJECT ARCHITECTS:
FREEHOLD	YEO SEW HAP	AY AM
D C REF/P NO.:	PROJECT DIRECTOR:	CHECKED BY: / DRAWN BY:
	TOH KOK KIN	SYL / BING
SCALE:	PROJECT NO.	DRAWING NO.	REV.
AS SHOWN	SIN 2283	TD-0051	0
DATE: NOVEMBER 2010			
FILENAME:			

Boundary lines:

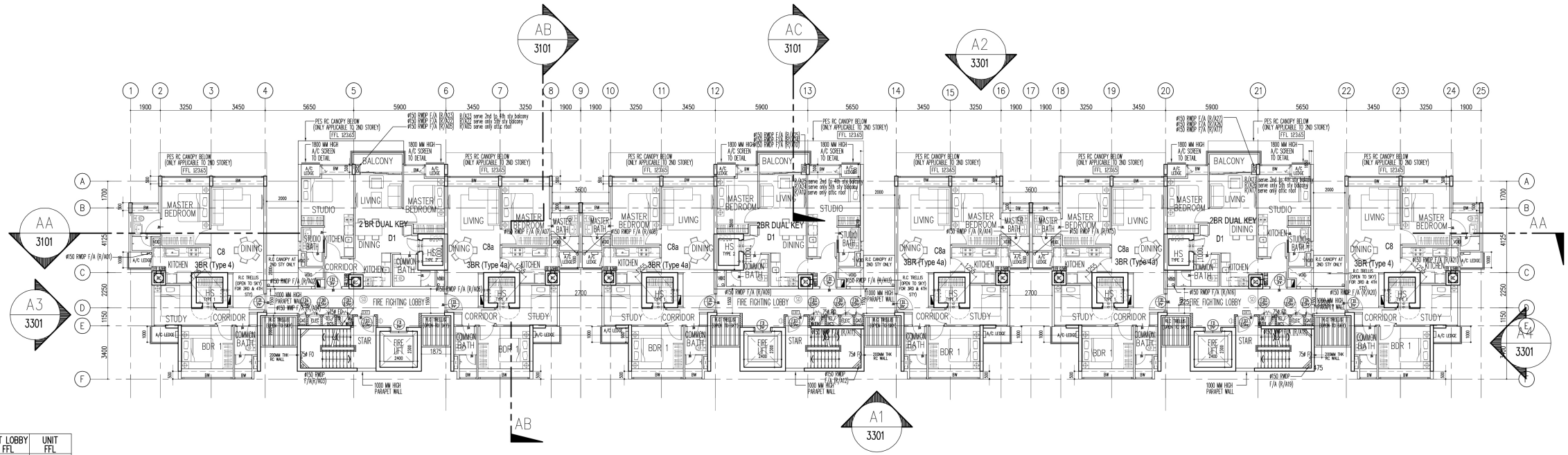
Boundary and setback



BLOCK A	LIFT LOBBY FFL	UNIT FFL
2ND STOREY FFL	124.05	124.10
3RD STOREY FFL	127.20	127.25
4TH STOREY FFL	130.35	130.40



Grid



STOREY	LIFT LOBBY FFL	UNIT FFL
2ND STOREY FFL	124.05	124.10
3RD STOREY FFL	127.20	127.25
4TH STOREY FFL	130.35	130.40

BLK A - 2ND TO 4TH STOREY PLAN (UPPER DECK)

0 3 6 9 12 15M

SCALE 1 : 150

Grid

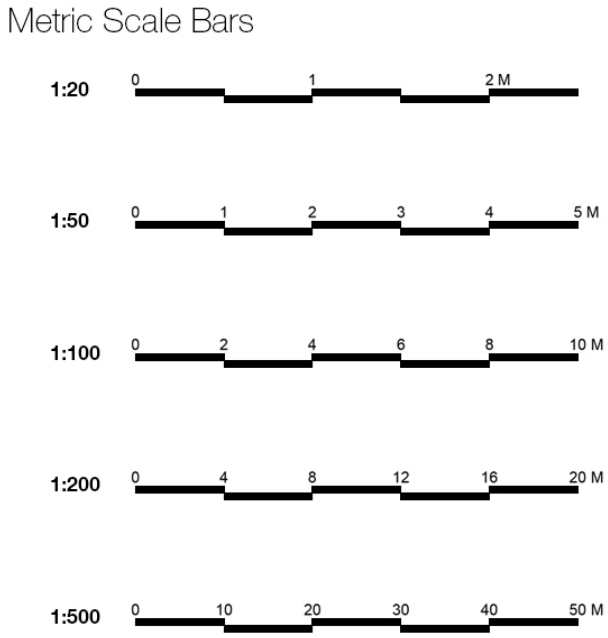
1 BLK A-ELEVATION A1

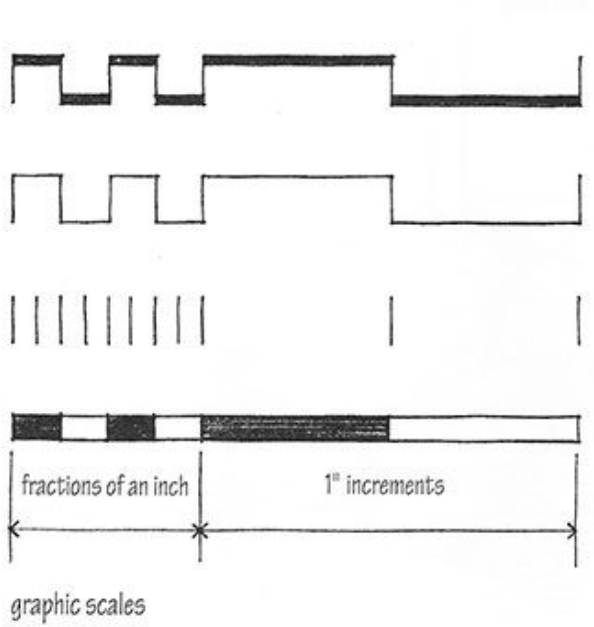
SCALE 1:200

Scale

Every type of parallel projections is a reduction of a certain ratio to the built reality, which means it is drawn on a particular scale.

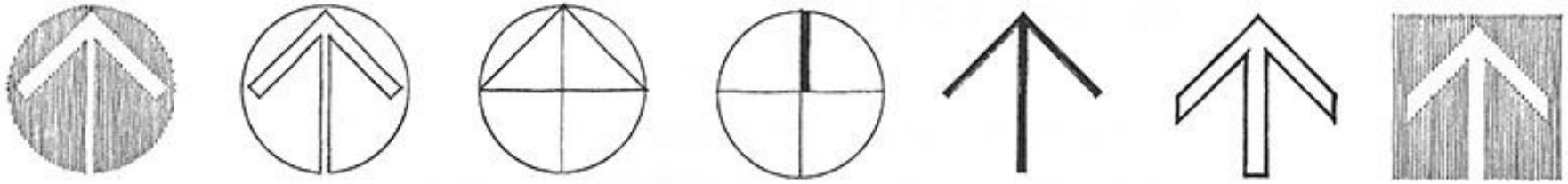
The scale must be marked **on every drawing**, ideally **scale bar** is also included. It is useful if we accidentally print drawings out of scale (for instance printing A3 drawing in A4 paper).





graphic scales

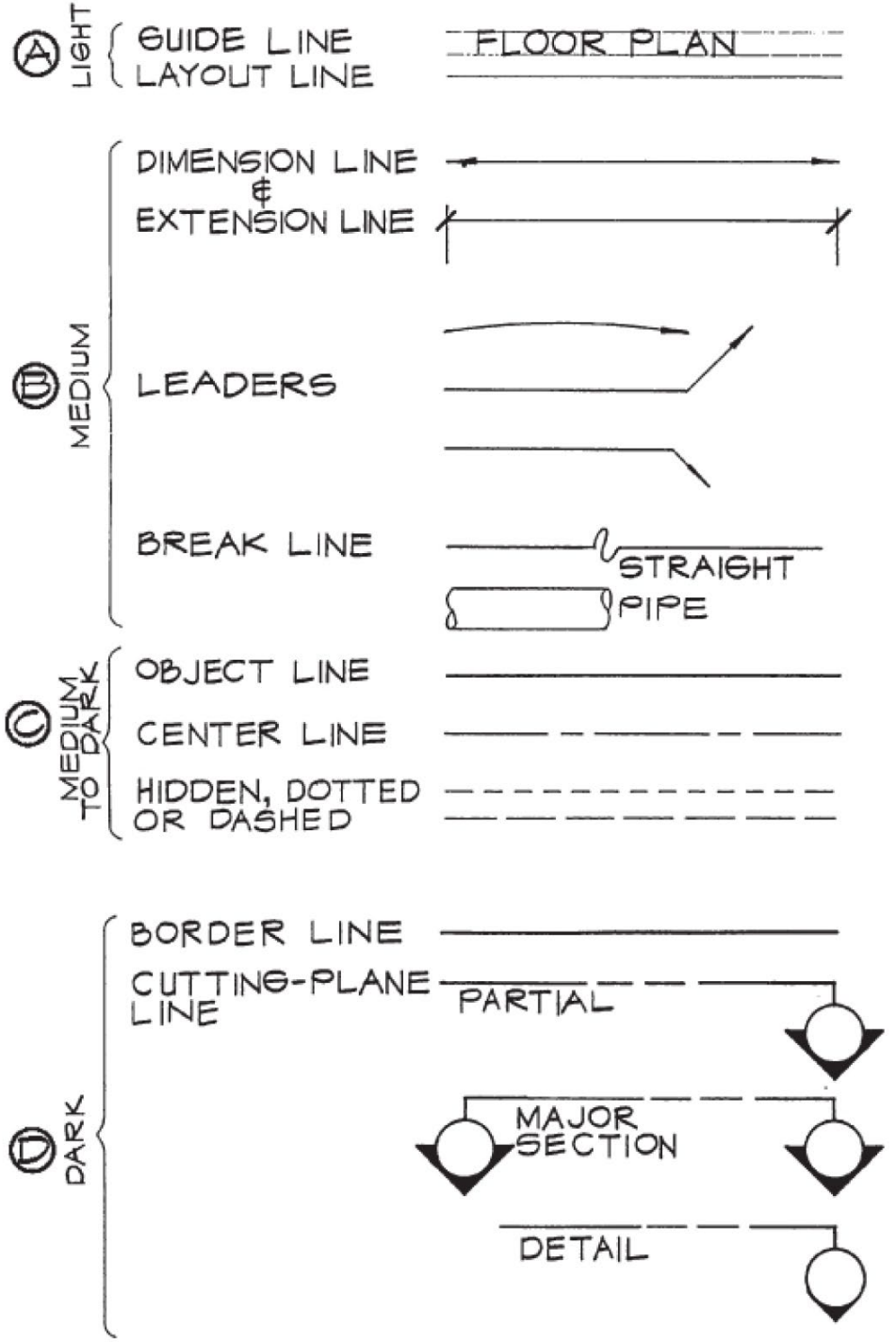
North direction



north arrows

It is useful to the construction team and also for design team, one instance is spatial planning. The **north arrow** is always included in drawings such as: topography plans, site plans and building plans. Typical storey plans usually do not need it.

Architectural lines



Wakita, O. A. & Linde, R. M. (2003). *The professional practice of architectural working drawings*, John Wiley & Sons.

Architectural lettering

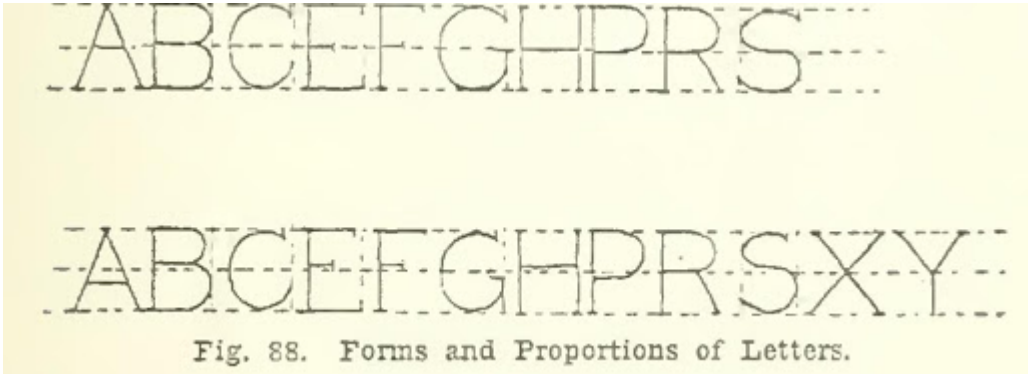
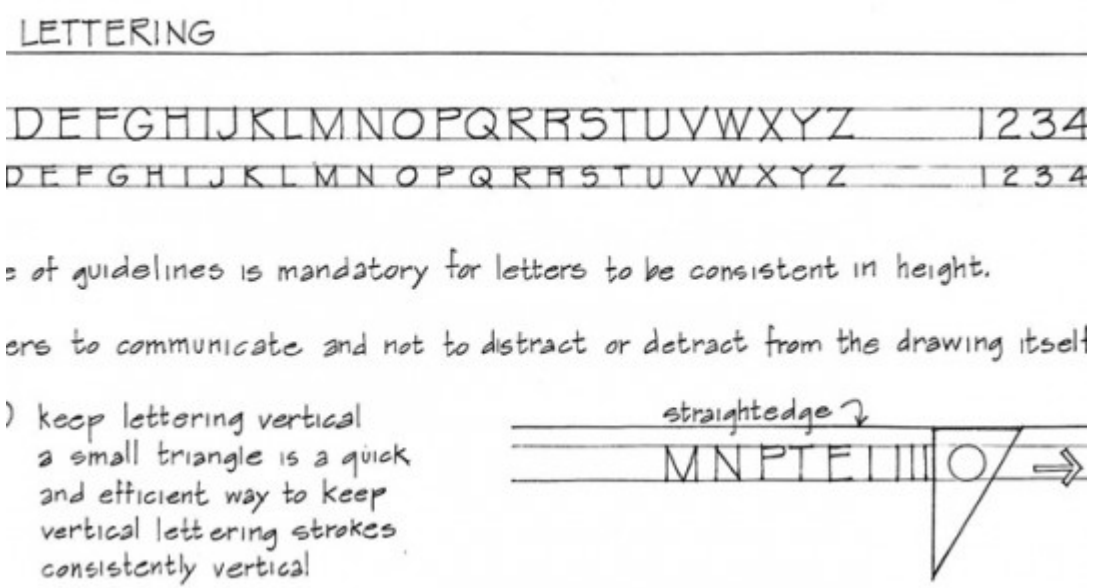


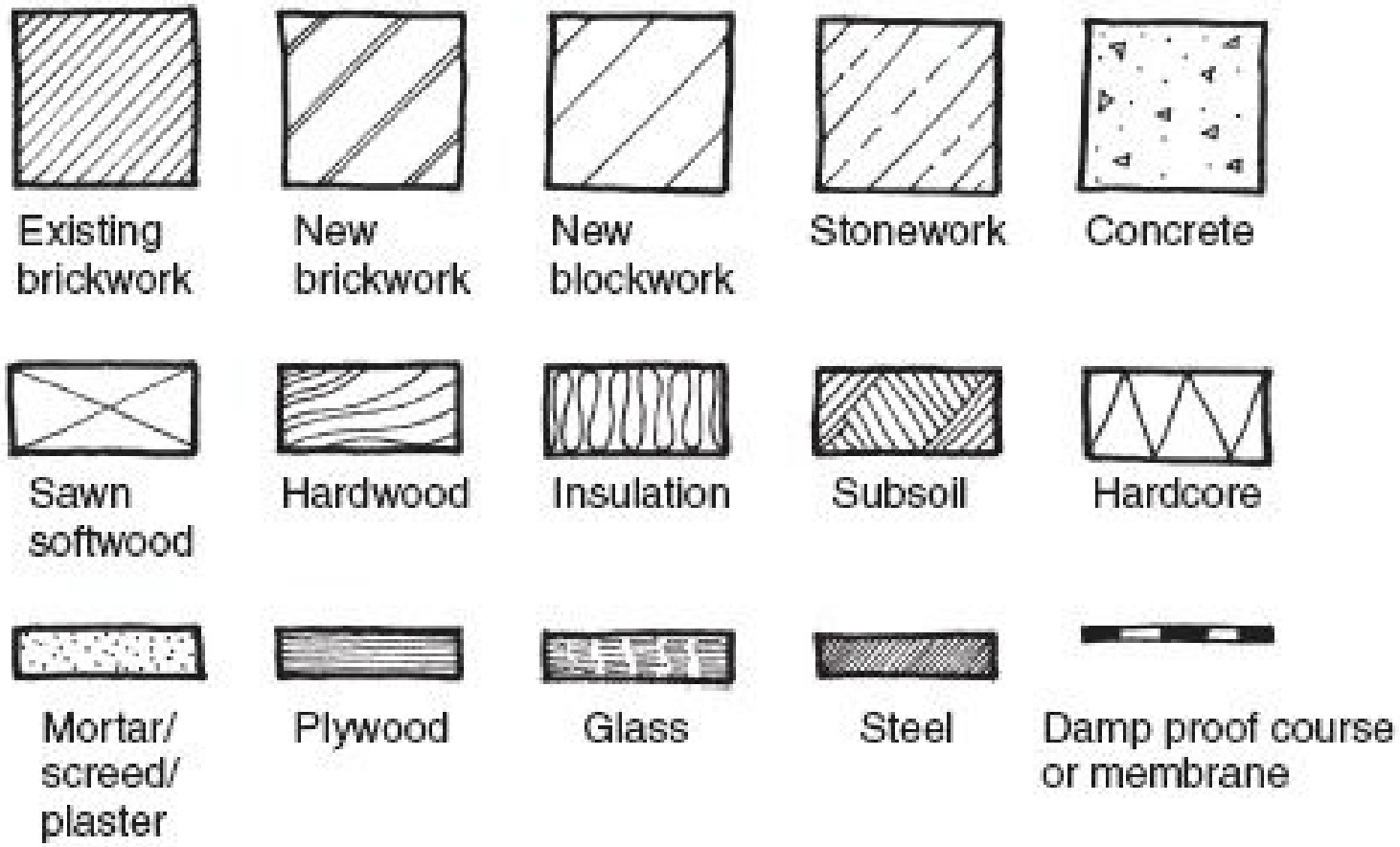
Fig. 88. Forms and Proportions of Letters.

- Master mechanical lettering as part as your drafting skills, often we have to make impromptu manual scaled drawings.
- Uppercase letters
- Maintain consistency



How to Write Like an Architect | 30X40 Design Workshop (thirtybyforty.com)

Material hatching



Commonly used ones are: new brickwork, concrete, mortar, hardwood, insulation and subsoil.

Dimension

Dimension chains, consist of:

- Dimension line
- Auxiliary dimension line
- Dimension limits
- Dimension figure

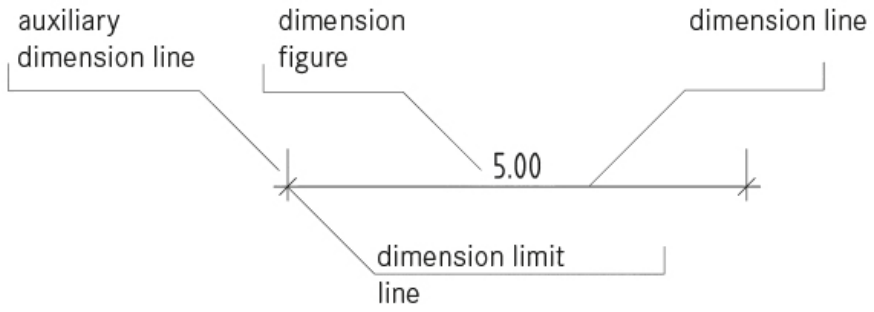


Fig. 16: Elements of a dimension chain

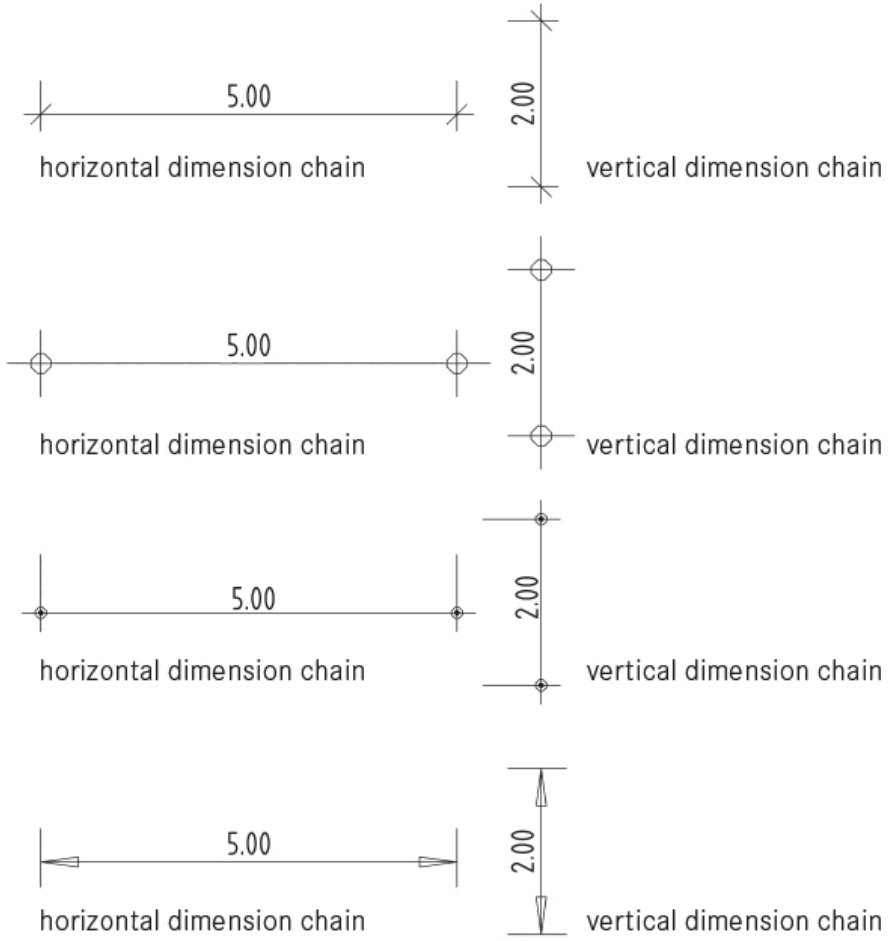
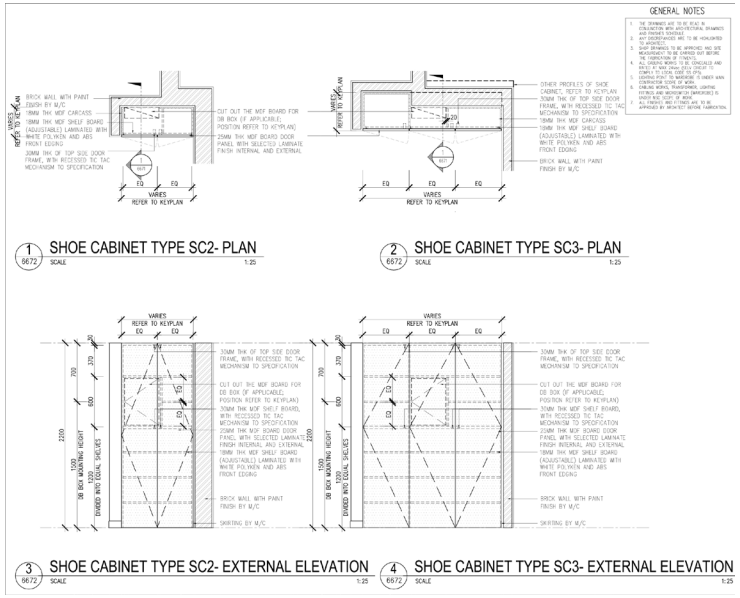
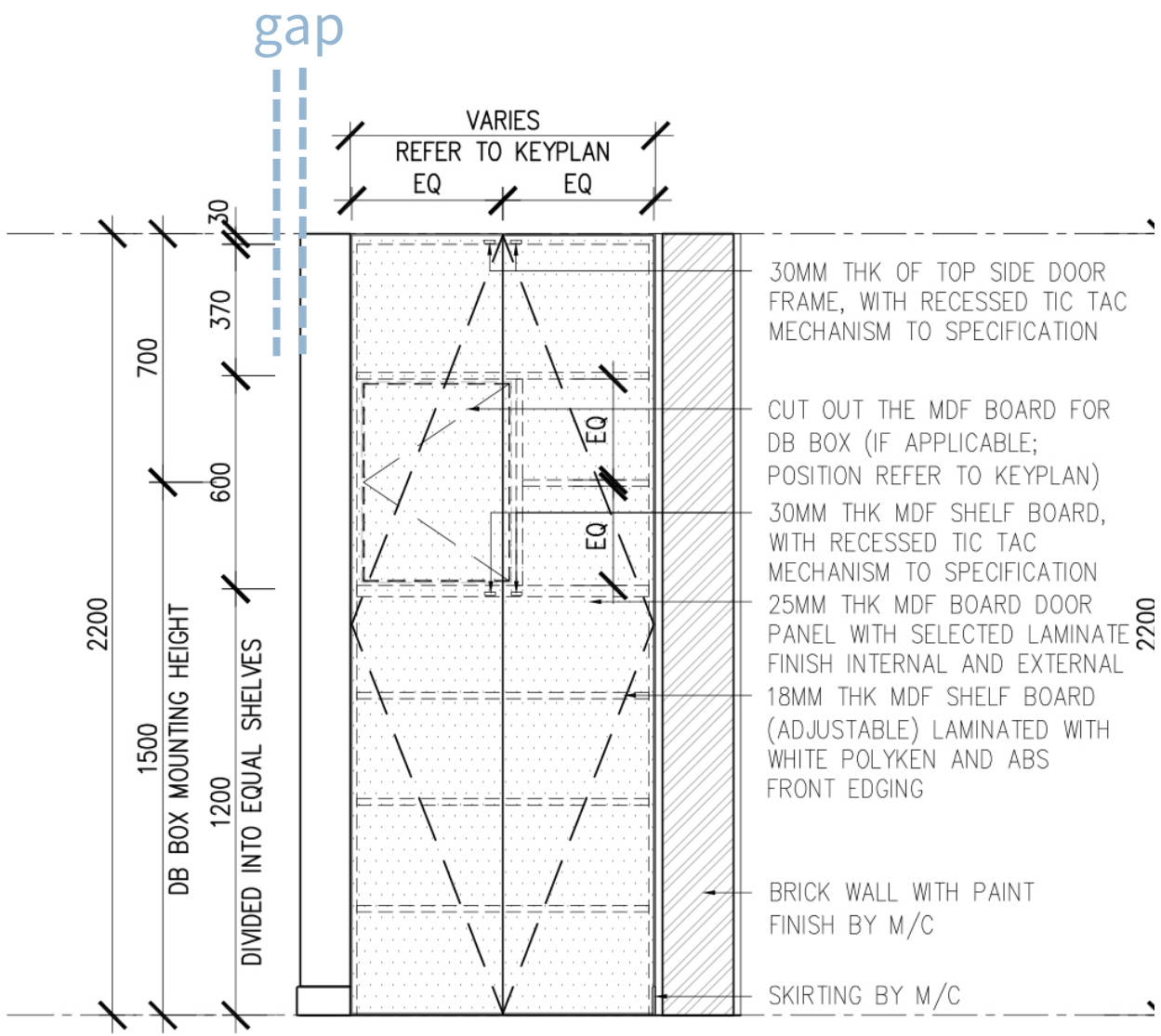


Fig. 17: Example of dimension limits

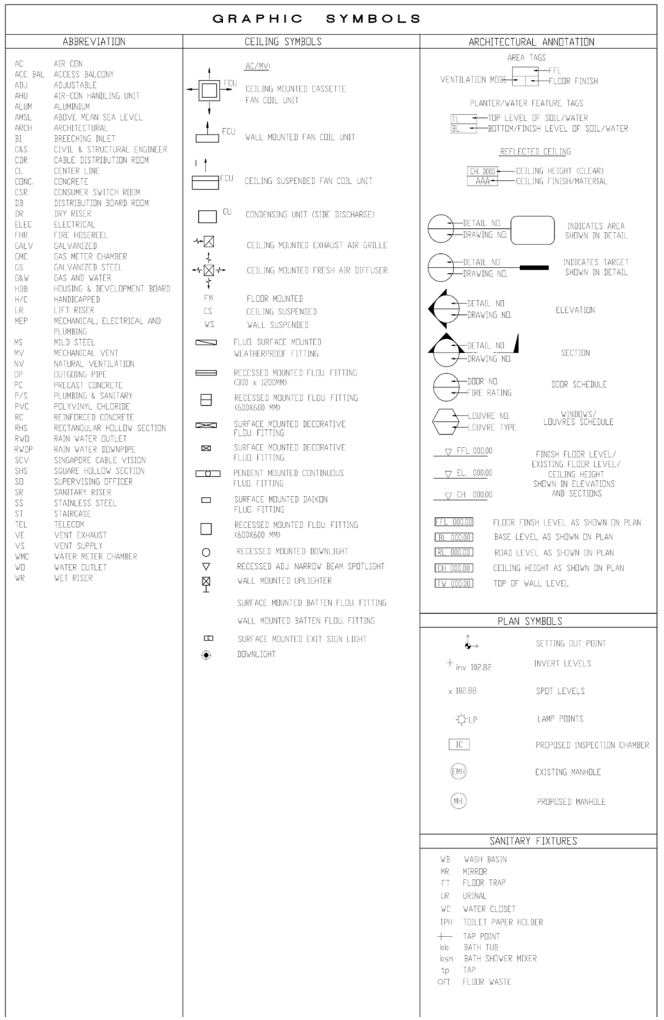
Dimension

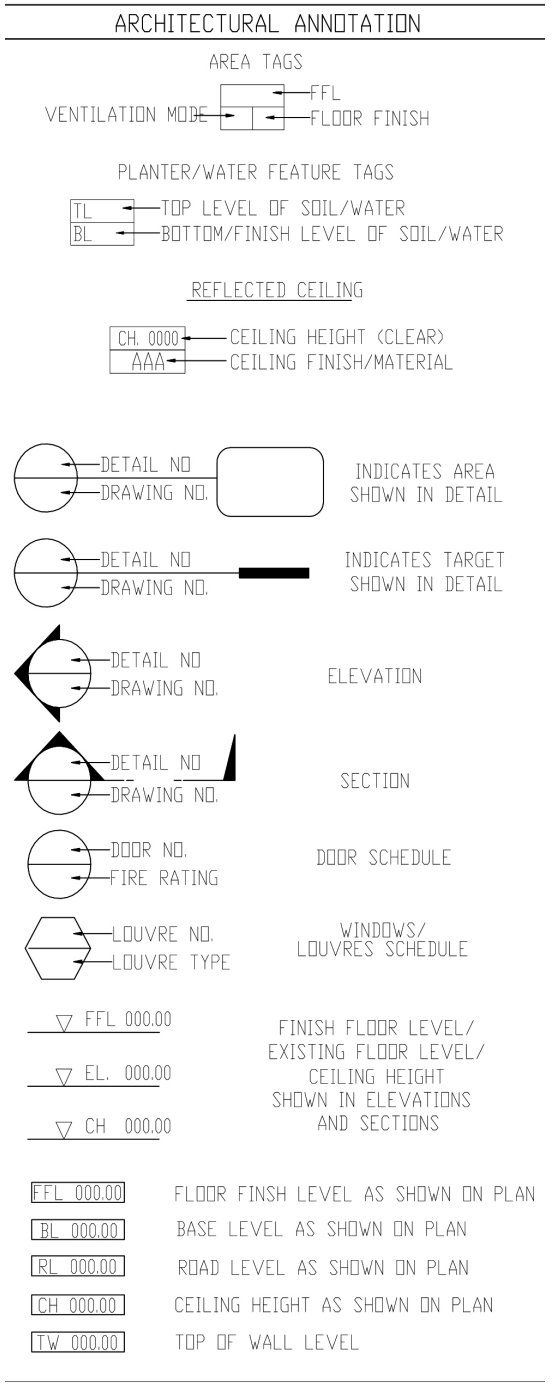

GENERAL NOTES
1 SHOE CABINET TYPE SC2- PLAN
2 SHOE CABINET TYPE SC3- PLAN
3 SHOE CABINET TYPE SC2- EXTERNAL ELEVATION
4 SHOE CABINET TYPE SC3- EXTERNAL ELEVATION


gap
VARIES
REFER TO KEYPLAN
EQ
EQ
30
370
700
600
1200
1500
2200
DB BOX MOUNTING HEIGHT
DIVIDED INTO EQUAL SHELVES
30MM THK OF TOP SIDE DOOR FRAME, WITH RECESSED TIC TAC MECHANISM TO SPECIFICATION
CUT OUT THE MDF BOARD FOR DB BOX (IF APPLICABLE; POSITION REFER TO KEYPLAN)
30MM THK MDF SHELF BOARD, WITH RECESSED TIC TAC MECHANISM TO SPECIFICATION
25MM THK MDF BOARD DOOR PANEL WITH SELECTED LAMINATE FINISH INTERNAL AND EXTERNAL
18MM THK MDF SHELF BOARD (ADJUSTABLE) LAMINATED WITH WHITE POLYKEN AND ABS FRONT EDGING
BRICK WALL WITH PAINT FINISH BY M/C
SKIRTING BY M/C

Symbols

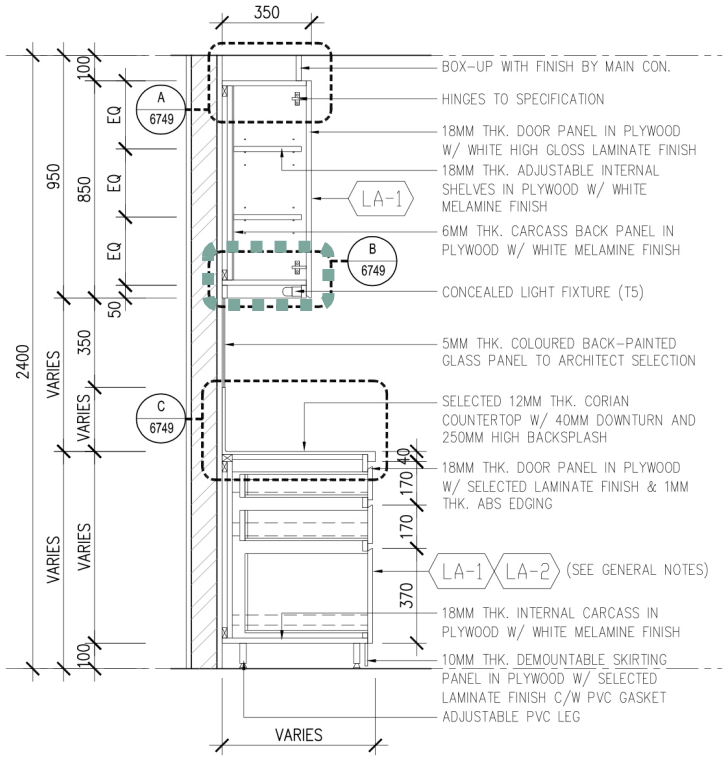
Common convention + adaptation



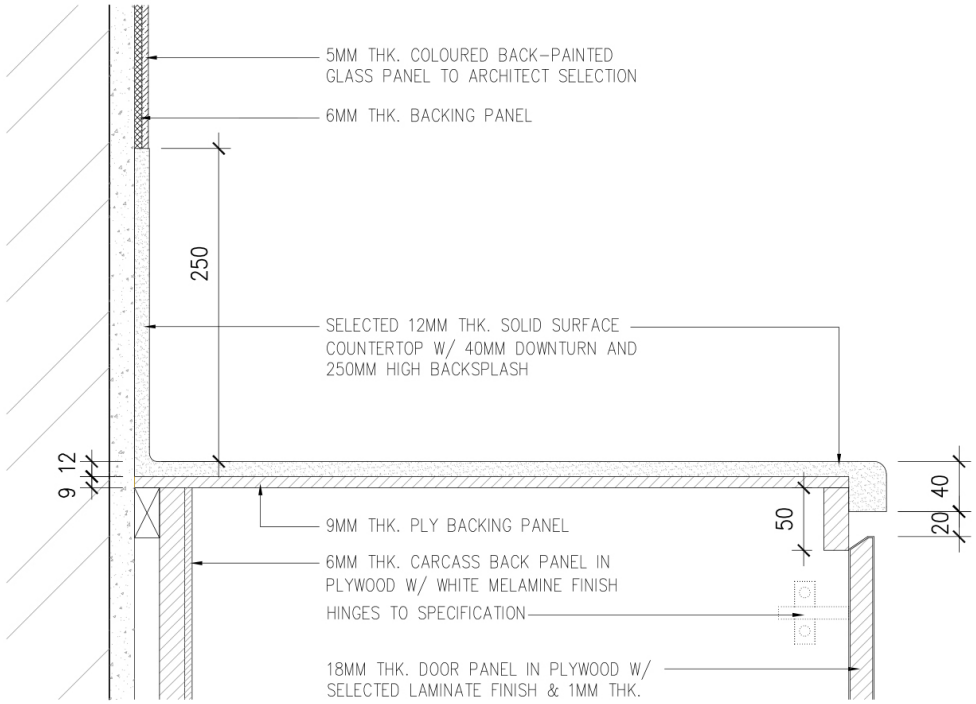


Legibility of drawings

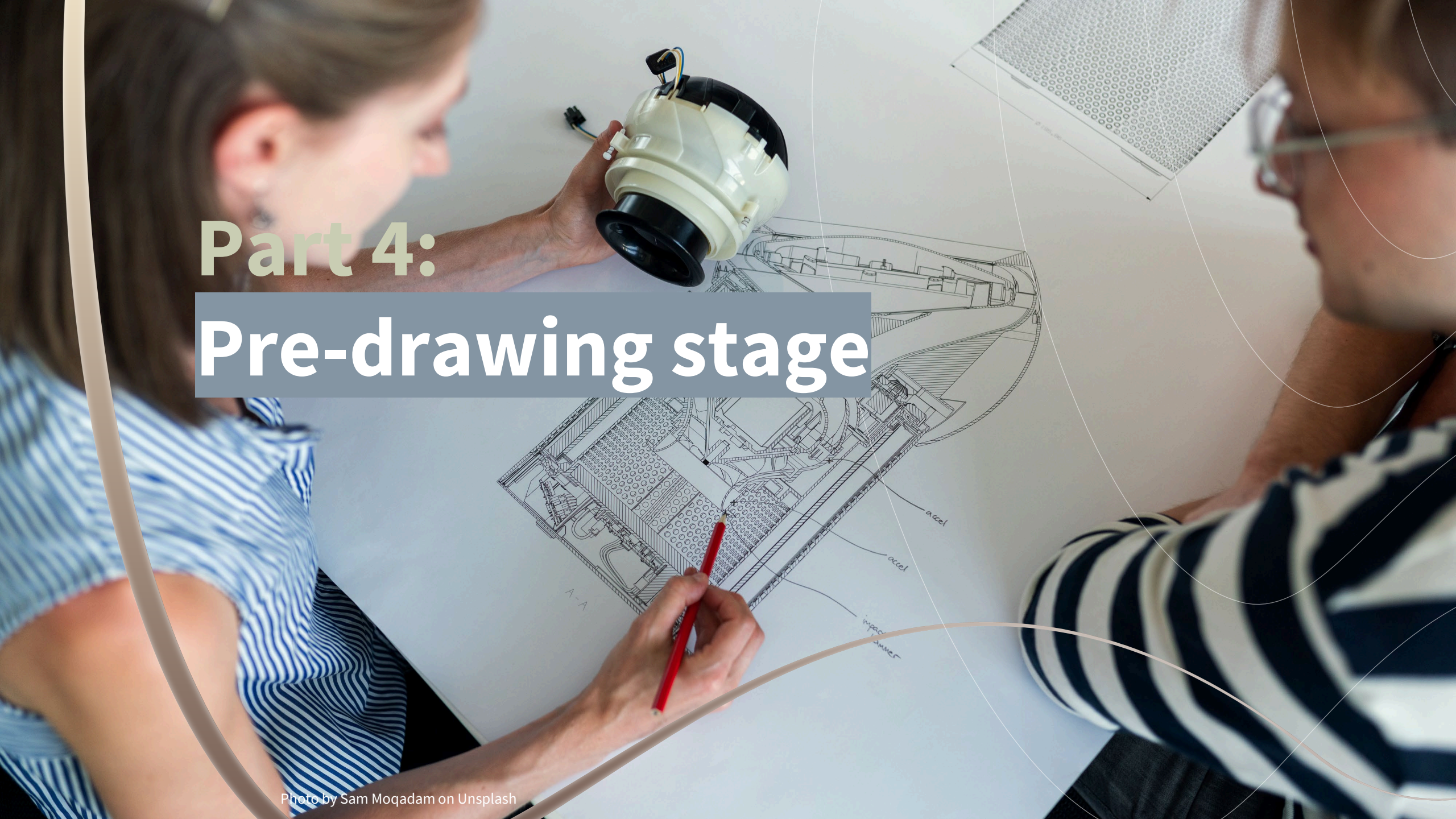
Different types of drawing call for different scale. Legibility needs to be maintained and test prints are recommended.



4 / 6742 TYPICAL KITCHEN CABINET SECTION
SCALE 1:20



C / 6749 DETAIL
SCALE 1:5

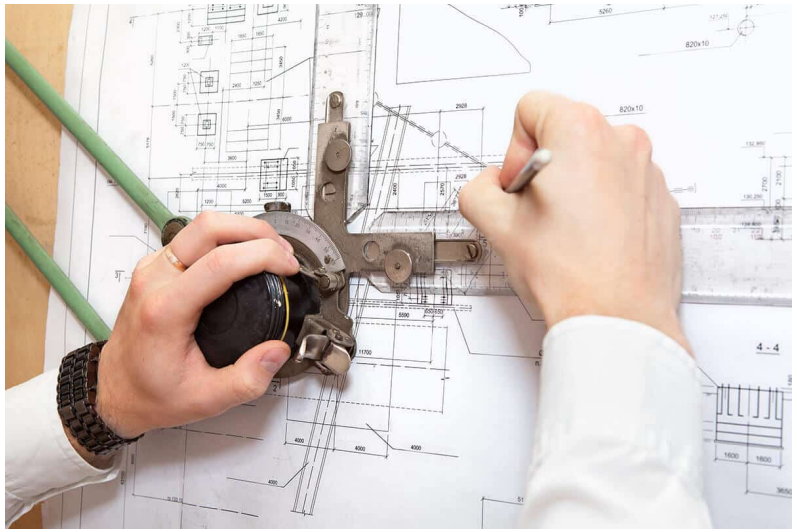


Part 4:

Pre-drawing stage

Photo by Sam Moqadam on Unsplash

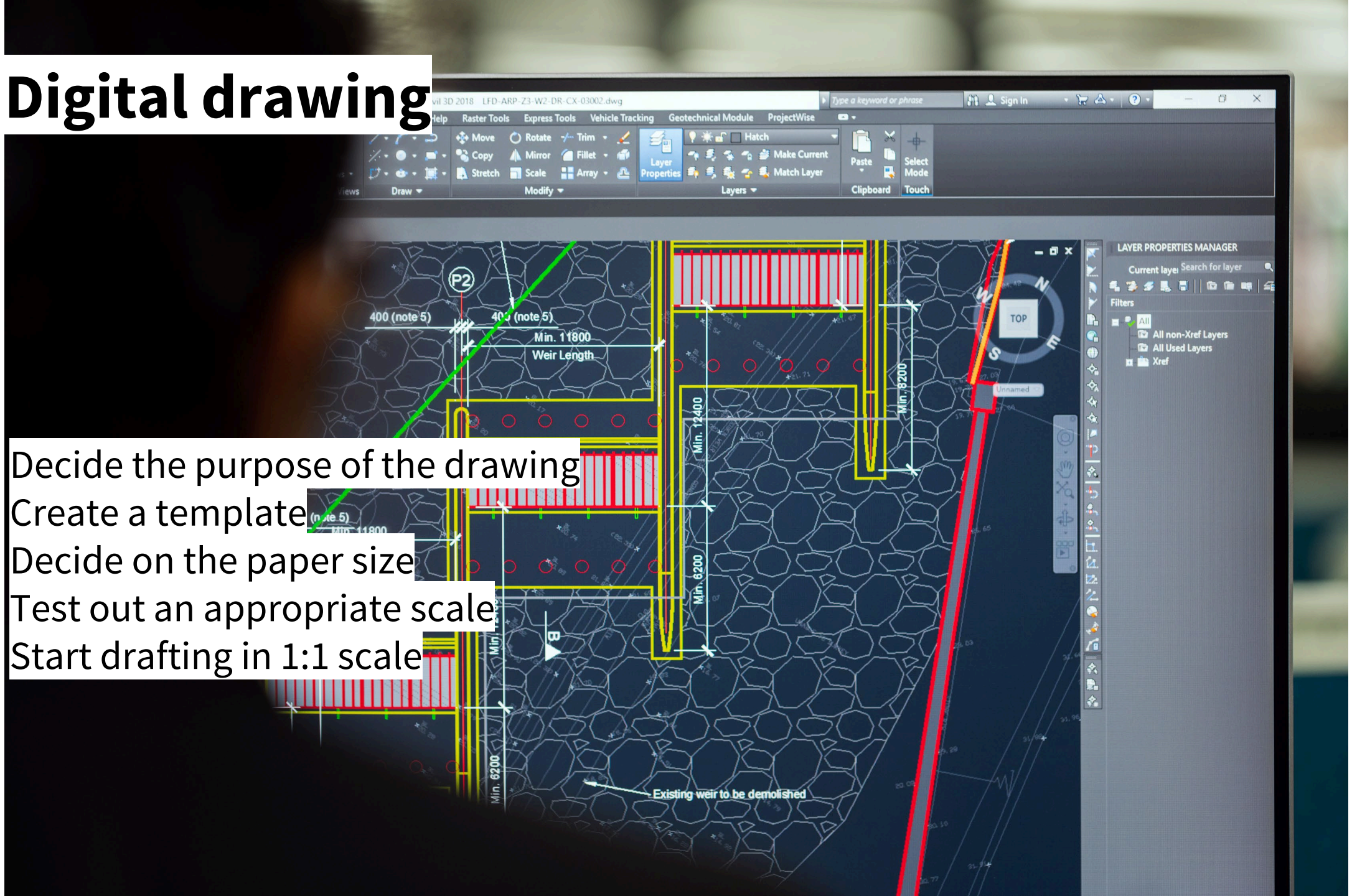
Manual drawing



1. Gather the tools
2. Decide the purpose of the drawing
3. Decide on the paper size
4. Test out on an appropriate scale
5. Start drafting in the scale you choose

Digital drawing

1. Decide the purpose of the drawing
2. Create a template
3. Decide on the paper size
4. Test out an appropriate scale
5. Start drafting in 1:1 scale



ACTIVITY 2

Submit via Disqus:
https://miatedjosaputro.com/2021/04/20/as-week-8/

1. **Measure the building you are currently in. 20mins**
2. **Limit to 2-3 adjacent rooms**
3. **Produce a sketch technical drawing based on your measurements. You can choose manual or digital drafting (AutoCAD, but not SKP). 45mins**
4. **Share: your drawings and personal reflections, via Disqus. 5mins**

Handy tips:
Measured Survey 101 - How to measure a building with ease (firstinarchitecture.co.uk)

SURVEYOR

20 + 45 + 5 mins
DURATION

Next week (Week 9)

Reading week

There is no class, so you can work on your assignment. I am available for tutorials before your Assignment 1 submission in Week 10.

Please book the slot in advance