

## ABOUT ACEPLP'S 26-MONTHS ENGINEERING APPRENTICESHIP PROGRAMME

2-months In-House CAD/BIM Training



24-months On-The-Job CAD/BIM Training



**Engineering Professional** 

To become an engineering professional, you need skills, experience and a strong professional network, which you will attain at the end of this programme. This is a challenging but rewarding programme that requires you to multi-task, work within tight timelines, and manage client expectations.

### WHY CHOOSE THE WORK-STUDY PATH?

Apprenticeships are structured training programmes that help you gain the skills and knowledge needed to succeed in your chosen industry. Getting into employment earlier means more potential for you to progress in your career quickly and allows you to earn a good salary much earlier on in your life.

Apprenticeships provide fantastic experience in the working world and shows other employers that you can "hit the ground running". Hands-on training gives you a real chance to put your skills into practice and helps you gain more confidence in a working environment. It's all about learning while doing and learning from others in your industry.

From the pragmatic point of view: you earn while you learn! No student loans, no tuition fees, and no debt. Just your time, effort, and willingness to keep an open mind. You will be paid a salary on the programme.

In fact, Singapore's Ministry of Education is encouraging more people to take up the work-study path by ramping up workplace learning for students. Education Minister Ong Ye Kung pointed out that a reversion to basics (a need for skills) across industries can be seen today due to widespread technological disruption. With the rise of Artificial Intelligence and the advent of robots, people need skills to stay relevant.

"People sometimes have the wrong idea that the apprenticeship system is rigid and inflexible. I think, to the contrary, that the mastery of skills, and especially the basic core competencies, is what makes somebody adaptable in the face of changes. This will be Singapore's version of dual education and will be a mainstream pathway where we learn from Germany," said the Mr Ong, as part of the delegation for President Halimah Yacob's state visit to Germany in 2019. Germany's apprenticeship system is held in high regard around the world.

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# PROGRAMME OVERVIEW

Programme Aim	To develop high-quality and skilful CAD/BIM professionals that meet the requirements of the Architectural, Engineering, and Construction (AEC) Industry.	
2-months Foundational Classroom Training	Day Class: In-House Trainers  Monday – Friday: 9am – 6pm (Lunch: 1 hour)  Saturday: 9am – 1pm / 9am – 6pm *  Venue – Amtech Building / Tradehub 21  Evening Class*: Industry Consultant Trainers  Monday – Friday: 7pm – 10pm*  * On selected days only. No overtime claim will be paid for extended classroom training hours. Payment for overtime work is claimable only for approved urgent work done in excess of 44 hours during the week.	
24-months On-The-Job (OJT) Skills Training	<ol> <li>Begins upon completion of classroom-based foundational skills training</li> <li>Up to 3-5 different assignments throughout the 24-months OJT period</li> <li>Between assignments, return to Training Centre for skills upgrading to prepare for the next client assignment; and catch up with the HR team</li> </ol>	

# SOFTWARE SKILLS TRAINING

The following table lists software used to train you to render CAD services to clients:

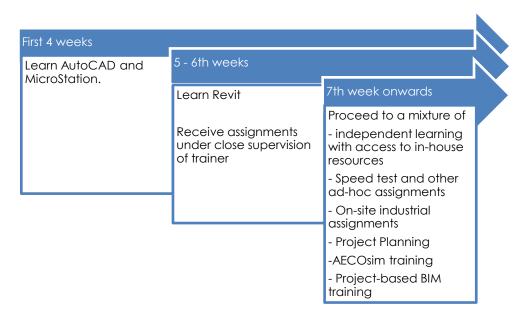
Software	What it is	
MicroStation	Used by LTA, PUB and large-scale global infrastructure projects	
AutoCAD	Typically used in local building projects (E.g. Residence and shopping malls)	
Revit	A building information modelling tool that allows users to design a building and its components in 3D, annotate the model with 2D drafting elements and access buildin information from the building models database.	

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### IN-HOUSE TRAINING

During the first two months, you will undergo complex and intensive in-house training:



In-House Trainers	<ul> <li>Conduct day classes</li> <li>Develop your foundational CAD/BIM skills</li> <li>Guide you through practical assignments</li> <li>Assist you in difficult situations met on-site at client projects</li> <li>Provide career guidance and counselling</li> </ul>
Industry Consultant Trainers	<ul> <li>Conduct evening classes</li> <li>Industry Professionals engaged by AcePLP to provide trainings</li> <li>Ensure trainings remain rigorous, practical, and relevant</li> <li>Introduce "Tips n Tricks" to increase your speed and accuracy</li> <li>Former Apprentice Engineers (min. 5-8 years of industry experience)</li> </ul>

### ON-THE-JOB TRAINING

A senior in the field will guide you while you work on-site for the first time. This "hand-holding" process takes place discretely to maintain your professional image.

If you encounter a fresh client without a senior, our in-house trainers are readily available to guide you through phone or email. Our trainers can also go on-site to assist you in difficult situations. You may need to undergo retraining if your skills level does not match our clients' expectations.

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During orientation, the HR team will brief you on the available resources you can use to your advantage when building your career here.

### CERTIFICATION SYSTEM

Certificate	Timeline	Description
Certificate of Competence/ Attendance	CAD engineers must take two examinations after 4 weeks of in-house training.	<ul> <li>Certificate of Competence – For "Pass with distinction"</li> <li>Certificate of Attendance – For "Pass"</li> <li>This examination affects your earning performance through your VPC (see Appendix 2) for the next two years. Better performers will be posted to projects with higher contract price, thereby earning a higher income and better learning opportunities.</li> </ul>
Autodesk Certified Exam:  1. AutoCAD Professional  2. Revit Professional	These examinations are taken towards the end of the 26-months  Apprenticeship  Programme	These examinations are challenging, but your two years of industry experience will help ease the process.  Revision sessions are held a week before the exams upon request. First attempt is free and re-tests are \$\$200 each.  These certificates allow you to become Certified CAD/BIM Trainers worldwide.
*Skills Diploma/ Skills Certificate /Advanced Skills Diploma	Awarded at the end of the 26-months programme	Grade A: Advanced Skills Diploma Grade B - C: Skills Diploma Grade D: Skills Certificate Grade E: Not Eligible

- \* CAD Engineers are graded (A, B, C, D and E) throughout the 26-month programme based on:
  - Skills proficiency demonstrated by examination score;
  - Performance remarks by lecturer, trainer, manager, HR and clients
  - Conduct and work ethic: Attendance and punctuality

## INDUSTRY CAREER PROSPECTS

Singapore's construction sector is amongst the fastest growing sectors. A strong projected construction demand is sustained at between \$26-32 billion, anchored by public sector projects. Singapore aims to develop the city by the year 2030, expanding our MRT transport lines to create a highly connected Singapore, build more houses and leisure spaces. There are plenty more opportunities in the sector.

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This industry is facing a stronger push for productivity as design, presentation and calculations will increasingly be done by software. Engineers must be skilled in using CAD authoring software as there is no room for employers to hire additional staff to translate an engineer's ideas into the building model.

Being a CAD drafter is not your end goal. You can aim to become a structural/civil/mechanical/ electrical engineer, project manager or BIM specialist. These positions require skills and industry experience that a local university education cannot adequately provide.

After completing this 26-month program, you will:

- 1. **Outshine others to fulfil engineering job requirements:** Few local engineering professionals are experienced in using CAD, which is a requirement in engineering jobs. Such skills are in shortage and usually present in foreign skilled professionals.
- 2. **Establish stronger technical design fundamentals:** A successful design engineer does not depend on a drafter to present their design. Their design intent is immediately reflected in a computer model that they are able to build independently. If necessary, they are also able to manage junior staff.
- 3. **Solid technical skills are your foundation for career development:** Learn to estimate time required to complete a task, set realistic deadlines for staff and interpret drawings to manage clients.

This programme is different from many "engineering" jobs outside that does not require or help you build strong technical skills and knowledge. Some "engineers" in the market are simply doing facility maintenance or writing reports instead of getting hands-on engineering experience in projects. This can hinder your career progression rather than help it to move forward.

This programme is designed as a stepping stone to develop your career in the engineering field. It is critical for engineers to develop technical skills that will be useful for employability in the long-term. Technical skills provide stronger job security as you will find yourself less easily replaced with new-comers.

### WHAT YOU GAIN FROM THIS APPRENTICESHIP

During the 2 years, you will be assigned to provide CAD or BIM services to various clients of AcePLP on live industry projects. These assignments serve as your on-the-job training opportunities. It can involve buildings, transport infrastructure, oil and gas, shipping and water reclamation projects.

### <u>Technical Insights</u>

In this apprenticeship, you will learn how engineering design production affects the procurement and building process of an infrastructure, how the project progresses according to sequence, and the practical methods that the industry employs to get things done. You will learn how engineering designs work, figure out what the various job scopes are available, and what skills/experience are required. You get intimate insight into different companies, type of work, work culture and environment. This can help guide your career development direction.

### Networking Opportunities

Over 80% of job seekers say that their network has helped with their job search. Networking contacts help more than job leads. They can provide referrals to or insider information about companies you might be interested in working for. They can provide information on career fields you might want to explore or what the job market is like. Your network can give you advice on where to look for jobs or review your resume.

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The clients that you work and interact with during your OJT training assignments are likely your future employers and colleagues. The engineering and construction network in Singapore is a small circle of professionals. To gain significant career advantage, do your best to impress these clients with positive work attitude and technical skill.

#### Career Trajectories

At the end of the apprenticeship programme, armed with the industry experience you have gained, you will have the following options:

**Option 1**: During the programme, you may have met industry professionals who can introduce you to new job opportunities in their wide network of companies. These may include AcePLP clients whom you may have missed the opportunity of being assigned to assist within the short period you are with us. You may also have been specially headhunted to join other companies. You may then choose to exit the programme by submitting your resignation and serving one month's notice to the HR Department.

**Option 2**: You may consider joining our Training Department, or Projects Sales and Coordination. If you wish to move out of the technical function, you may want to consider joining our HR or Sales functions.

**Option 3**: Stay with us as a Senior CAD/BIM Engineer, Manager, or Coordinator to work on more challenging projects that involve management, coordination, and/or planning.

**Option 4**: Join the client that you served during your industrial attachments at the end of the apprenticeship programme.

The skills, experience and network you establish will promise you positive career prospects at the end of the 26-months. A bright future awaits you as you will remain highly sought after in this industry.

#### <u>Further Education</u>

At the end of the apprenticeship programme, high-performing candidates may be selected for the BIM Specialist position. BIM Specialists are entitled to a sponsorship amount of up to \$10,800.00 for Diplomas or Degree programmes that are relevant to their career path as a built-environment professional.

Examples of programmes that AcePLP support include the Bachelor of Building and Project Mangement (SUSS) and the Bachelor of Technology (NUS).

### MINIMUM EMPLOYMENT PERIOD (MEP)

Minimum employment period (MEP) under the Apprenticeship Agreement (AA) is 26 months or such other period as provided in the AA. At the end of the MEP period, you can pursue the following options:

#### 1. Build More Project Experience:

Our HR team will send you on more challenging projects that involve coordination and management skills. Such projects tend to command higher contract prices, so your VPC will increase too. Take this option if you wish to build up your CV, because going on multiple assignments will exponentially increase your knowledge by challenging you to learn all the time.

#### 2. Be Part of the BIM Business:

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Virtual design and construction is set to change the way that construction projects are being operated and managed. If you are highly interested in technological developments in the Construction IT sector, particularly in how different types of visualisation and engineering information management tools operate, stick with us to watch the BIM revolution. Become a BIM trainer with us and help us train other people to pick up BIM skills. As a trainer, you will train our staff and also our clients, and also coordinate BIM projects.

#### 3. Join a Client:

If you liked working with our clients that you encountered as part of this Apprenticeship Programme, consider taking up our Transfer of Employment Programme, in which we have agreement from all three parties (You, AcePLP and the Client) to transfer your employment to said Client. As part of this Programme, you stand to receive an incentive of 20% from the client transfer fee, in addition to a performance bonus of up to \$5000. There is no need for you to submit a resignation letter, nor is there a need to serve a notice period.

### 4. Find Another (Similar) Job:

Say you didn't like any of the Clients you worked with during the course of the Apprenticeship Programme – but you know that your experience is not limited to these companies only, and still wish to pursue a career in the Architecture, Engineering and Construction industry. Headhunters from AcePRO will work with you to identify more suitable employers with whom you can continue your career. They will arrange interviews for you to meet potential employers, send you Job Descriptions of available openings, and prep you for these interviews so that you always put your best foot forward.

#### 5. Be a Professional Freelancer:

Be your own boss. Gain more personal freedom by taking on assignments whenever you wish to work, and stop whenever you want. Take this option if you do not wish to be tied down to an employment contract with anyone in particular. When we find suitable assignments, we ask if you wish to participate in them as an independent contractor. Up to 80% of the contract fees from these assignments will go directly to you, while we retain just an administrative charge.

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