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「材料構造研究」課程學生作品成果展

Exhibition of student works from the studies of materials and construction course

建築教育的新紀元： 實踐大學開辦「建築職人學士學位學程」

王俊雄 | 建築設計學系主任

創辦緣起

實踐大學設計學院建築設計學系將於 113 學年度起開辦「**建築職人學士學位學程**」（以下簡稱本學程），招收 45 名學生，本學程將發展「做中學、學中做」之職人教育，採產學合作方式，與產業界共同發展契合式課程，建置業界與學校密切協作之教學實習平臺，並結合證照制度，以培養未來建築營建實務之職人。

近年來，國內建築營建業不僅缺工日益嚴重，建築工藝亦日漸凋零，既有人才高齡化，欠缺新血補充與傳承，已對建築產業基礎形成嚴重威脅。同時，傳統建築教育著重於建築師教育與設計美學之培養，缺乏配合建築工藝訓練，導致建築設計與營建工藝脫節，亦使建築創作出現瓶頸。因此，建築界期待學院與產業界聯手合作，共創新局。在此一背景下，本學程由學界與業界合作共創，與本校原有建築設計課程相輔相成，建構一套從規劃設計到營建工藝的完整建築教育體系，以補足紙上設計與實作工藝的間隙，以及理論與現場實務之間的落差。

學士學位學程

系所介紹

本學程為建築系下專設之學士學位學程，旨在培養具備專業建築知識與實務經驗之建築人才。本學程課程設計強調理論與實務之結合，並提供學生參與實際建築專案之機會。學生在學期間，將接受系統性的專業訓練，包括建築設計、構造、材料、法規等領域之知識。此外，本學程亦設有實習課程，讓學生能將所學知識應用於實際工作環境中，提升其專業能力與團隊合作精神。畢業生將具備從事建築行業之專業素養，為建築產業之發展貢獻力量。

課程規劃

本學程課程設計以培養專業建築人才為目標，課程內容涵蓋建築設計、構造、材料、法規等領域。課程規劃如下：

學分	第一學期	第二學期	第三學期	第四學期	
必修	建築設計(1) 建築設計(2) 建築設計(3) 建築設計(4) 建築設計(5) 建築設計(6) 建築設計(7) 建築設計(8) 建築設計(9) 建築設計(10)	建築設計(11) 建築設計(12) 建築設計(13) 建築設計(14) 建築設計(15) 建築設計(16) 建築設計(17) 建築設計(18) 建築設計(19) 建築設計(20)	建築設計(21) 建築設計(22) 建築設計(23) 建築設計(24) 建築設計(25) 建築設計(26) 建築設計(27) 建築設計(28) 建築設計(29) 建築設計(30)	建築設計(31) 建築設計(32) 建築設計(33) 建築設計(34) 建築設計(35) 建築設計(36) 建築設計(37) 建築設計(38) 建築設計(39) 建築設計(40)	建築設計(41) 建築設計(42) 建築設計(43) 建築設計(44) 建築設計(45) 建築設計(46) 建築設計(47) 建築設計(48) 建築設計(49) 建築設計(50)

本學程年度課程規劃內容

學分	第一學期	第二學期	第三學期	第四學期	
必修	建築設計(1) 建築設計(2) 建築設計(3) 建築設計(4) 建築設計(5) 建築設計(6) 建築設計(7) 建築設計(8) 建築設計(9) 建築設計(10)	建築設計(11) 建築設計(12) 建築設計(13) 建築設計(14) 建築設計(15) 建築設計(16) 建築設計(17) 建築設計(18) 建築設計(19) 建築設計(20)	建築設計(21) 建築設計(22) 建築設計(23) 建築設計(24) 建築設計(25) 建築設計(26) 建築設計(27) 建築設計(28) 建築設計(29) 建築設計(30)	建築設計(31) 建築設計(32) 建築設計(33) 建築設計(34) 建築設計(35) 建築設計(36) 建築設計(37) 建築設計(38) 建築設計(39) 建築設計(40)	建築設計(41) 建築設計(42) 建築設計(43) 建築設計(44) 建築設計(45) 建築設計(46) 建築設計(47) 建築設計(48) 建築設計(49) 建築設計(50)

學位學程發展方向與重點

- 教育目標
 - 培養具備專業建築知識與實務經驗之建築人才。
 - 培養具備良好之溝通、協調與團隊合作能力。
 - 培養具備良好之專業素養與社會責任感。
 - 培養具備良好之學習能力與自我提升能力。
- 核心能力
 - 具備良好之專業知識與實務經驗。
 - 具備良好之溝通、協調與團隊合作能力。
 - 具備良好之專業素養與社會責任感。
 - 具備良好之學習能力與自我提升能力。

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建築職人專班資訊及相關課程
Information about the program and its courses

合作產業及相關資源

本學程在傳統建築工藝外，亦結合美學創意、領導統御及新科技發展，以培育新世代建築工藝人才，期能在逐漸朝向自動化、數位化及人工智慧化的趨勢下，提升建築產業水準。為吸引人才進入本學程就讀，在建築產業界的支持下，大學前二年將提供入學獎學金，加上教育部的私校學雜費補助，學生僅需支付少數金額的學費。後二年合作廠商將提供實習場所與業師，以一對一的方式進行工藝教育，在此期間亦提供生活津貼，協助學生安心學習。學生畢業後，將由產業界提供就業機會，除保障就業外，亦有相對較高的薪資保障。

目前參與本學程協作的產業皆為國內頂尖的大型營造公司，包括崇雅、忠泰、互助、璞實、金藏及泉安等六家，均挹注各項專業資源支持本學程。崇

雅營造為臺灣頂尖的專業清水模建築營造團隊，在工法與美學中追求完美；忠泰營造為忠泰集團之專業營造團隊，在臺灣北部有多項知名代表作品；互助營造成立已逾半世紀，除營建高科技廠房、辦公大樓及住宅外，亦包含臺北捷運及高鐵等多項公共工程；璞實營造來自璞園建築團隊，近年來完成多項知名住宅案；金藏營造主要負責上市櫃建設公司等商業開發大樓、廠辦、住宅等工程；泉安營造主要負責建築模板工程，深受同業間的支持與肯定。

「做中學、學中做」之職人教育

有別於建築設計學系五年制課程，本學程為四年制學程，提供學生深入、全面的教育，培養美感、創造力及專業技能，以促進心手腦均衡發展，期能在實作中養成建築專業技能與創新精神。課程內涵著重材料、構造、結構、水電等技術，以及全面



04 建築職人形象示意圖
An image of an artisan architect

性的工序管理與整合協調之認知，亦包含營建工程科學、管理科學、數位製造等，並重視匠師精神與工程倫理之建立。課程規劃包括建築學、構造學、材料學、圖學、結構力學、物理設備、施工估價、測量學、案例研究、數位施工及職場實習等多元領域。綜言之，本學程結合建築、工藝與藝術，強調思考與手工能力並重的訓練，如同德國包浩斯學校的教育理念一般。

本學程課程均由學校及合作產業共同規劃，部分課程由業界提供具豐富實作經驗的業師進行教學，再銜接密集的現場實習課程，以兼顧學生就學及就業。校內則提供多項教學設施及設備，包含實習工廠各項機具及實作場域，亦安排學生校外參訪，觀摩學習營造廠內部之機具及設備，藉由結合本學程與業界專業資源，以充分落實「做中學、學中做」之理念。

本學程積極引進產業界資源，共同攜手培育「建築職人」，以符合產業需求，並提升未來創造更高品質建築工藝之可能性。合作廠商除贊助學生入學獎學金、安排工作崗位實習與薪資外，畢業後亦將提供就業機會。本學程首創與產業界合作培育建築專業實作人才，以無縫銜接職場的課程規劃與設計，協助學生養成未來建築產業所需之關鍵核心能力，進而成為具創新能力的新世代建築職人。■



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05 材料構築相關課程活動
Materials and construction course activities

A New Chapter in Architecture Education: Shih Chien University Launches Architectural Craftsmanship Program

Wang Chun-Hsiung (王俊雄), Chair of the Department of Architecture

Origin

Shih Chien University's Department of Architecture of Design College will roll out a **Bachelor Program in Architectural Craftsmanship** (the program) this year, with 45 students available. The program adopts a hands-on approach and works closely with industry to develop a work-based program and an apprenticeship platform that help students acquire the required certificates and nurture the talent that meet industry requirements.

In recent years, worker shortage has become a significant challenge to the construction industry in Taiwan. With skilled workers getting older and a lack of younger workers that are ready and able to take their place, the construction industry is facing a serious challenge. Meanwhile, traditional architecture education focuses on the education of architects and design aesthetics, and less on essential construction skills. This has led to a gap between architectural design and construction practice activities, and created problems in architecture projects. Therefore, it has been widely expected that academia

and industry will work hand in hand to address the issues. Thus, the Bachelor Program in Architectural Craftsmanship has been created jointly by professionals from academia and industry against this backdrop. Based on existing courses, a comprehensive system from design to construction practice and processes is created to address the gap.

Collaboration and resources

In addition to the traditional craft of architecture, the program also includes the elements of aesthetics and creativity, leadership and new technology to nurture new generations of talent. Taking into account the current trends of automation, digitalization and AI, we hope to enhance the standards of the architecture industry. To attract students to apply for the program, with the support of the architecture industry, scholarship will be offered for the first two years. The Ministry of Education will also cover parts of the tuition fee. In the third and fourth years of the program, apprenticeships are offered for a one-on-one learning experience. Living allowance is also provided for the duration of the apprenticeships. Upon graduation, students

will be offered job opportunities and better pay from the industry.

Currently, six top construction companies in Taiwan have collaborated with the program, including Pure Architecture (崇雅), Jut (忠泰), Fu Tsu (互助), Puboa (璞寶), KIMZOA (金藏) and CHUAN AN (泉安). They have each offered their own expertise to support the program. Pure Architecture Construction is Taiwan's leading expert in professional raw concrete construction as they pursue perfection with their skills and unique aesthetics. Jut, a professional construction team under the Jut Group, has many renowned projects in northern Taiwan. Established more than half a century ago, Fu Tsu Construction covers a wide range of projects, from factories, business buildings, residential buildings to Taipei Metro and Taiwan High Speed Rail. Puboa Construction, a team under the Pauian Archiland, has delivered many renowned residential building projects. KIMZOA Construction focuses on business buildings, factories and residential building projects. CHUAN AN specializes in industry-leading formwork.

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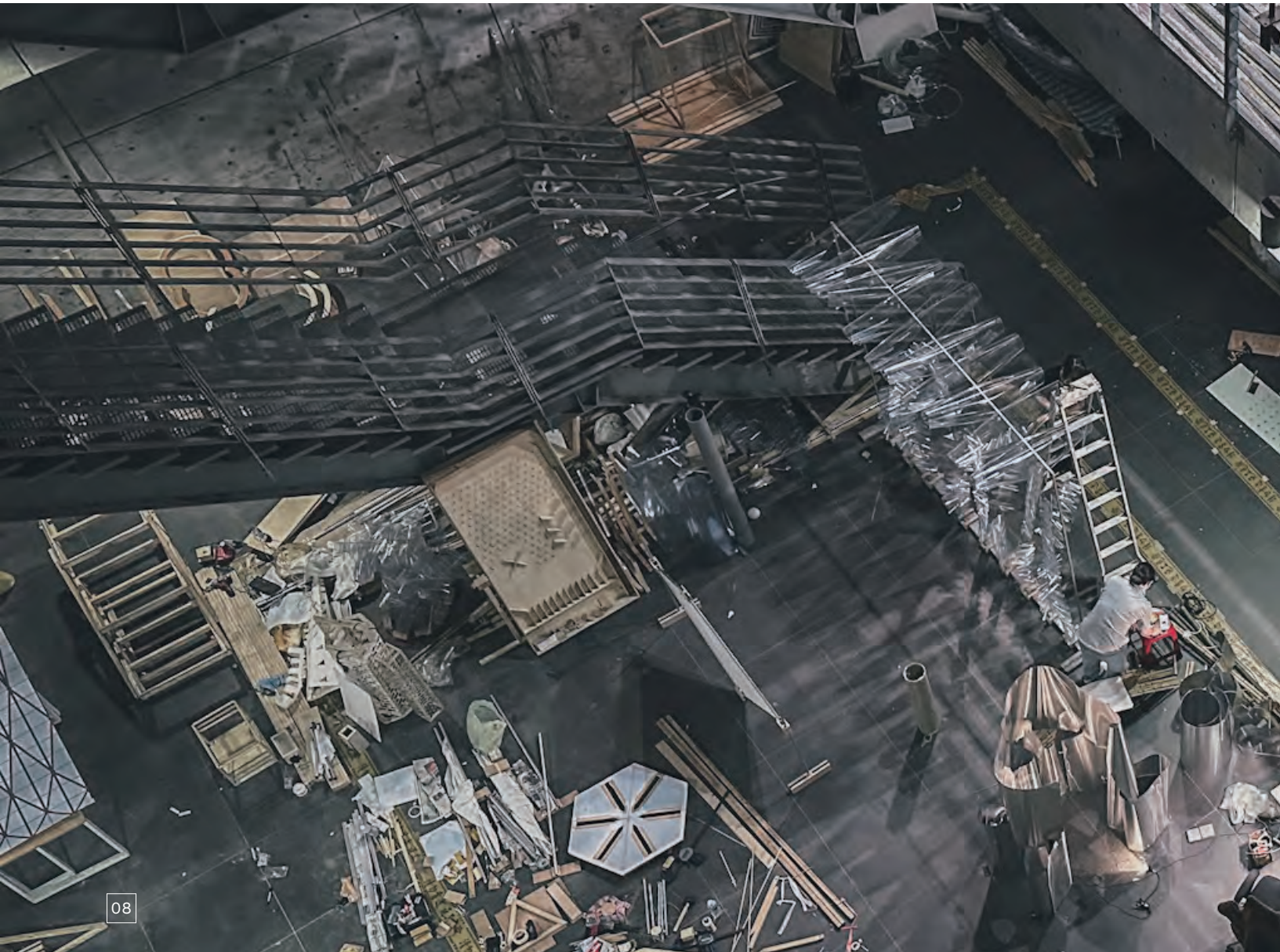
材料構築相關課程學生作品動態展示
Demonstration of student work from the materials and construction course

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學系活動「建築戲 - 下水」，學生組隊設計構築一艘船。
An event for the students from the Department of Architecture to build a ship as a team



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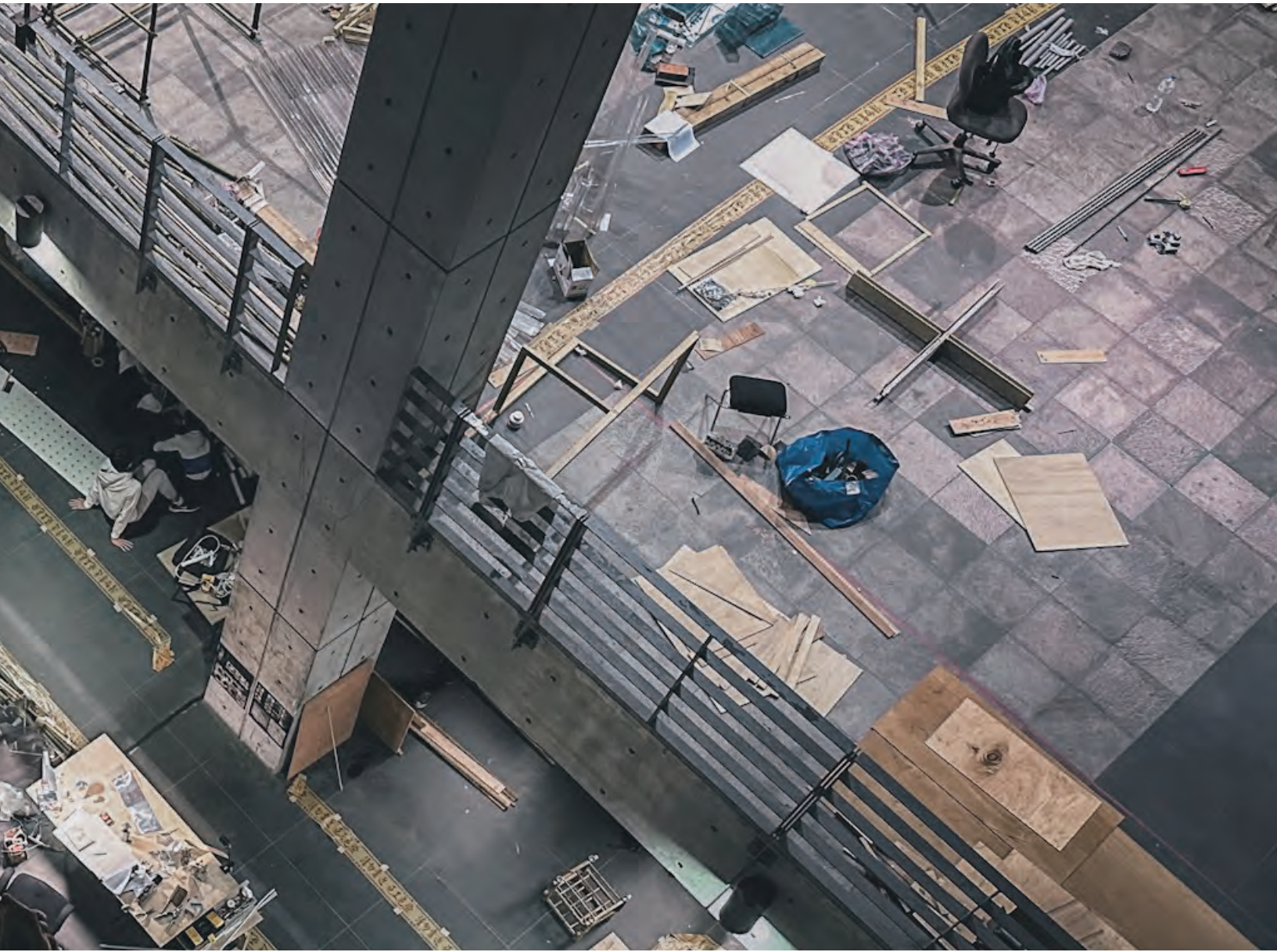
08 實作課程施工現場
Internship at a construction site

Learning through doing approach

Unlike the five-year structure of the Department of Architecture, this is a four-year program that provides in-depth and comprehensive education on aesthetics, creativity and professional skills. The goal is to provide balanced development that allows students to acquire the skills and a spirit of innovation. The course will focus on building materials, structure, plumbing and electricity. Other topics include construction science and management, digital manufacturing, artisan spirit and work ethics. The modules include architecture, materials science, structural theory,

graphic science, structural mechanics, physical architecture, quotation, surveying, case studies, digital construction and apprenticeships. Overall, the program combines architecture, crafts and art while focusing on both theory and practice, similar to the Bauhaus education in Germany.

Developed jointly by professionals from academia and industry, part of the courses will be taught by industry mentors and apprenticeships will be offered to increase students' employability in the future. While the program offers a range of equipment and spaces for students to practice and operate, students can also participate in



09 建築職人學士學位學程粉絲專頁追蹤 QR code
QR code of the program's Facebook page

industry visits to see the equipment at the factories first-hand. We work hard to ensure students learn by doing.

By incorporating industry resources, the program is aimed to nurture the talent that meet industry's needs to deliver high-quality architecture projects. Partner companies will offer scholarships, paid internships and job opportunities when students graduate. As the first such program that collaborates closely with industry, it offers students the best course design that enhances student employability and creativity. ■

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建築職人相關資訊公告

實踐大學 建築學院

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學士學位學程