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## 调查与实验：

泰国朱拉隆功大学设计与建筑国际部之建筑课程介绍

### Investigation and Experimentation:

The Architecture Program at INDA, Chulalongkorn University, Thailand

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### 简介

泰国曼谷的朱拉隆功大学建筑学院的设计与建筑国际部 (INDA) 是一个英文教学项目。朱拉隆功大学是泰国最古老的大学，是国王拉玛六世为纪念其父国王朱拉隆功于1917年而建。建筑学院最早成立于1939年，在泰国的专业教育实践中拥有悠久而辉煌的历史。INDA这一国际计划发起于2006年，意在满足不断增长的英文教学的需求，以更好地帮助学生为海外研究生学习做好准备。

INDA自2006年成立，首届招生40余名，近年来快速壮大，现已拥有超过300余名学生。2014年，INDA的第五届学生即将毕业，并且这一计划正朝着成为这一领域顶尖设计学院的目标前进。INDA关注设计创新与实验，意在为研究生提供一个有关建筑和设计的真正的国际视角。INDA聘请了来自世界各地的教师，包括12名

全职教师和15名兼职教师。教师们来自世界各地，包括美国、中国、日本、澳大利亚、西班牙、瑞典、德国、法国、丹麦、俄国和泰国。他们均毕业于国际顶尖的设计学院——包括英国建筑联盟学院与哈佛大学设计学院——带来了有关建筑创新的独特视角。

正如许多建筑学院一样，INDA拥有一个核心的课程体系，提供了包括设计与交流、历史与理论以及建筑建造和环境技术等课程的重要教育。为灌输有关于地域特征的意识，在课程体系内进一步补充了一系列课程，包括热带建筑、东南亚建筑、建筑社区生态学和城市设计。为进一步完善这一核心课程设置，INDA通过一系列课程研讨、游学计划、设计建造项目和参观等向学生们提供了多种国际参与合作的机会。其中许多是与国际机构合作的，包括纽约的帕森斯设计学院、东京的明治大学和苏黎世的瑞士联邦理工学院。

**摘要 /** 泰国朱拉隆功大学设计与建筑国际部 (INDA) 成立于2006年，在近年迅速发展，已成为东南亚地区最大且最成功的建筑院校之一。INDA关注于设计创新，使学生能够为高水准的国际建筑实践打好基础。本文探讨了INDA项目中调查与实验的过程，展示了设计营、游学考察和设计建造项目等活动如何培养学生的国际视野。我们同时也设置了核心课程来帮助理解建筑与其他设计学科之间的关系，尤其是与景观设计和城市设计之间的关系。

**关键词 /** INDA; 朱拉隆功大学; 建筑课程; 设计研讨课程; 研究

**Abstract /** "INDA" is the International Program in Architecture and Design at Chulalongkorn University in Bangkok, Thailand. Since its first intake in 2006, INDA has quickly grown to be one of the largest and most successful architecture schools in Southeast Asia. With a focus on design innovation, the school aims to prepare its graduates for high-level international architectural practice. In this article we explore processes of investigation and experimentation that characterise the program at INDA, and show how activities such as workshops, traveling studios, and design build projects enable students to develop an international outlook. We also address ways in which the core curriculum helps students to understand the relationship between architecture and other design professions, especially landscape architecture and urban design.

**Key words /** INDA; Chulalongkorn University; Architecture Program; Design Studio; Research

### Introduction

INDA, the International Program in Design and Architecture, is an English language program taught within the Faculty of Architecture at Chulalongkorn University in Bangkok, Thailand. Chulalongkorn is the oldest University in Thailand, founded in 1917 by King Rama VI in honor of his father, King Chulalongkorn. The Architecture Faculty was established in 1939, and has a long and successful history of educating professionals for practice in Thailand. The international program — INDA — was founded in 2006, aimed at meeting a growing demand for English language instruction that would better prepare students for graduate study abroad.

Since its first intake of around 40 students in 2006, INDA has grown rapidly, and now has a cohort of well over 300 students. In 2014, INDA graduated its fifth class, and is well on its way to becoming one of the preeminent design schools in the region. With a focus on innovation and experimentation, INDA aims to provide its graduates with a truly international perspective on architecture and design. It does so by employing 12 full-time and 15 part-time instructors from all around the world, including the United States, China, Japan, Australia, Spain, Sweden, Germany, France, Denmark, Russia, and Thailand. Instructors have graduated from leading international design schools, including the Architectural Association and Harvard Graduate School of Design, and thus bring with them unique perspectives on architectural innovation.

Like many schools of architecture, INDA has a core curriculum providing essential instruction in design and communication, history and theory, and architectural construction and environmental technology courses. It further complements these with a range of courses designed to instil awareness about the unique characteristics of the region, including Tropical Architecture, Southeast Asian Architecture, Architecture Community Ecology, and Urban Design. To further complement this core curriculum, INDA also provides students with many opportunities for international engagement and collaboration through a series of workshops, traveling studios, design build projects, and

tours. Many of these are facilitated by collaborations with international institutions including Parsons The New School for Design in New York, Meiji University in Tokyo, and ETH in Zurich.

Although INDA has adopted architecture as its principal topic of study, it aims to show how architecture connects to other disciplines, such as landscape architecture and urban design, and thus to show how architecture is representative of design disciplines in general. It also aims to instil in students fundamental design skills such as creative and critical problem solving, an awareness of the role of design at a community level, and an ability to cope with the changing demands of the design professions in the 21st Century.

In this article, we outline the broad pedagogical approach for teaching design studio at each of the four year levels, followed by brief descriptions of a number of international workshops and design build projects that have been undertaken in recent years.

### Year 1: Design Program

In the first year, students undertake two studio based

1. 第一学年迷你高尔夫球场项目 © Thanakorn Leelasathapornkun, Chalalongboon Sakulma
1. Mini Golf Course project, Year 1. © Thanakorn Leelasathapornkun, Chalalongboon Sakulma



尽管INDA将建筑作为主要的学习课题，但其目的是展现建筑与其他学科——例如景观设计学和城市设计——之间的联系，以此来展现建筑如何作为设计学科的代表。其目的也在于培养学生基本的设计技能，例如如何创造性和批判性地解决问题，建立社区尺度上设计角色的意识，以及应对21世纪对设计专业的需求不断变化的能力。

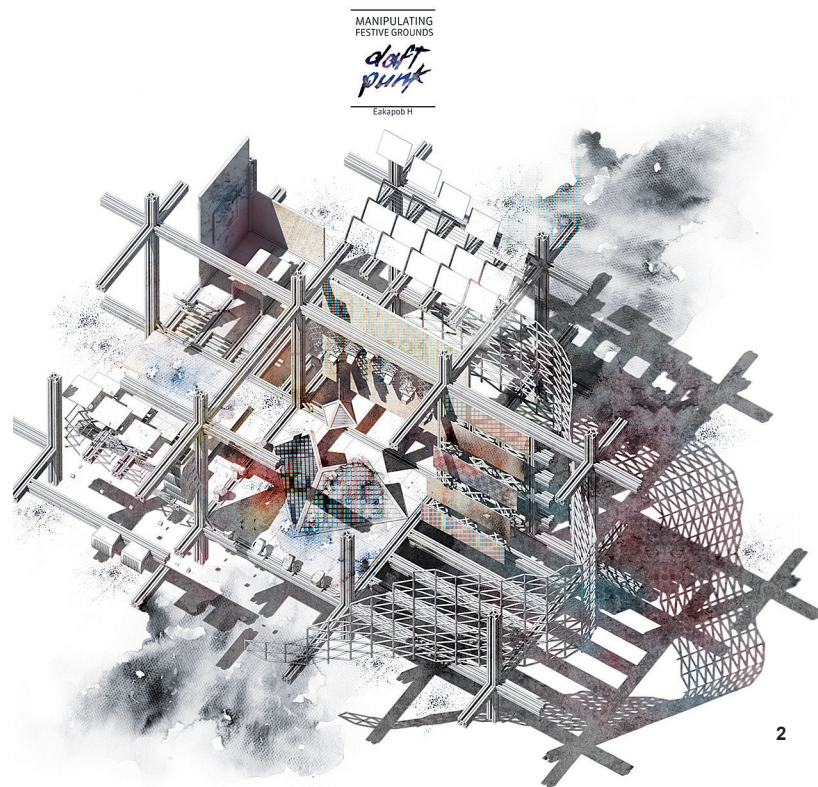
本文概述了INDA针对设计教学研讨课程在4个学年中展开的多元教学方法，简要介绍了部分近年来开展的国际研讨课程和设计建造项目。

### 第一学年：设计项目

在第一学年，学生要承担两门基础研讨课程：设计研讨课程和设计交流课程。这两门课程是紧密结合的，通过一系列快节奏的项目，学生和教师之间直接互动，从而在技术与概念之间发展一种“反馈回路”。学生是独立工作还是分小组工作取决于项目的需要和持续的时间。

具有代表性的是，设计研讨课程从对抽象形式的学习着手，并朝着一种具体的空间体验设计发展。在设计表现课程中，会教授学生手绘技巧和三维形式创作方法，但同时会强调分析和转化的重要性。所设计的项目意在通过处理抽象概念，以及人体尺度和空间体验，来促进学生发展理性观点，明确表达重要的问题和设计策略。学生学习的不仅是完成一个设计，更为重要的是如何在设定的一系列限制条件下发展他们自己的设计过程。例如，在一个项目中，通过关注地形、序列和表现，要求学生设计一个迷你高尔夫球场1:1的球洞，之后将他们的想法拓展到一个9洞的完整球场（图1）。与之关联的是，交流课程探索的是地形表面的分析与表达，以及在手绘和数字化地图技术中必要的抽象概念。

在另一个项目中，通过探索流程、叙事和空间体验，学生们要为短篇小说中的两个人物角色进行住宅设计。这篇短篇小说是由J·G·巴拉德创作的《亿禧年》，其重要前提是一个反乌托邦式的未来世界，空间在这里极其宝贵。学生可以参照他们自己的兴趣，叠加一系列的视觉假象，建立一个未来城市的可视化表达，而这个未来城市要符合巴拉德的故事。之后，学生们被要求根据这两个人物与他们所在世界的限制条件之间关系，来进行一项住宅设计。这一项目必须与所选场地——一个位



2. 第二学年旗舰店设计 © Eakapob Huangthanapan  
2. The design of a "flagship" store, Year 2. © Eakapob Huangthanapan

于较大的框架之下的可探索的空间——相适应。

### 第二及第三学年：设计项目

在第二和第三学年，设计工作室关注于在小尺度和大尺度上的有关居住的重要建筑议题；私人的、商业的和公共的建筑形式和城市空间之间的差别；以及背景和案例分析的必要技能，从而整合相关的建造和环境技术，产生适用于本地和全球背景下的创新设计概念。在第二学年，要为一个真实的或虚构的客户进行住宅设计，紧接着挑选一个大的品牌为之进行旗舰店设计，从而说明建筑在私人商业需求之间的不同（图2）。

在第三年，将开展一个中等尺度的住宿类建筑的设计，例如客栈或旅馆设计，然后会进行一个市民建筑的设计，使学生们能够将他们对于社区项目和公共空间的理解应用其中。与此同时，要求学生们接触现实世界中

courses: a design studio course and a design communication course. The two courses are closely connected, with direct interaction between students and teachers students are encouraged to develop a “feedback-loop” between techniques and concepts through a series of fast paced projects. Students work individually and in small groups depending on the duration and demands of the projects.

Typically, design studio projects begin with abstract formal studies and progress towards the design of an embodied spatial experience. In the representation course students are introduced to hands-on drawing techniques and three dimensional form making methods with an emphasis on analysis and transformation. Projects are designed to challenge students to develop rational arguments, formulate strong problems, and design strategies working with both abstract ideas and at the immediate scale of the human body and spatial experience. Students learn not only to execute a design, but perhaps more importantly, how to develop their own design process within a set of given constraints. In one project, focusing on topography, sequence, and performance, students were required to design a 1:1 scale hole for a mini-golf course, and then to extend their ideas into the design of a complete nine-hole course (Fig. 1). In parallel, the communication course explored analysis and representation of topographical surfaces, examining the necessary abstraction that occurs with both manual and digital graphic techniques.

In another project, exploring program, narrative, and spatial experience, students undertook the design of a dwelling for two fictional characters based on the short story “Billennium” by J. G. Ballard. The key premise of the story is a dystopian future world where space is incredibly precious. With reference to their own interests and to a series of imposed visual artifacts, students are first challenged to develop visual representations of a future city suitable for Ballard’s story. They are then required to develop the program for the dwelling through the relationship of the two characters and the constraints of their world. The program must then be adapted to suit the chosen site, a discovered space located within the structure of a large billboard.

### Year 2 and Year 3: Design Projects

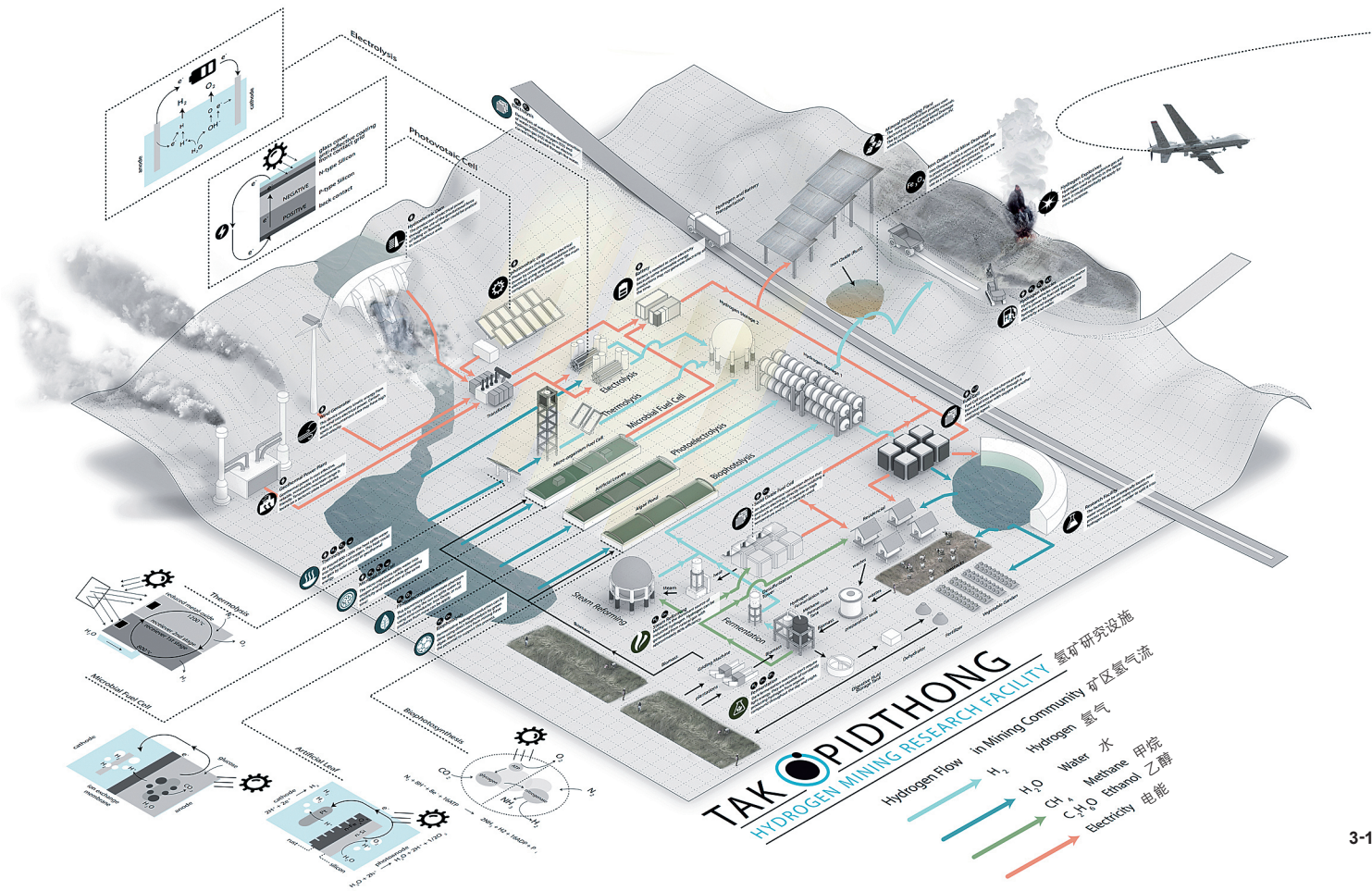
In Years 2 and 3, the focus of design studio is on fundamental architectural issues of occupation and inhabitation at both small and large scale; on the difference between private, commercial, and public forms of architecture and urban space; and on the necessary skills to analyze context and precedent, to integrate relevant construction and environmental technologies, and to generate innovative design concepts appropriate for local and global contexts. In Year 2, the design of a dwelling for a real or imagined client may be followed by the design of a “flagship” store for a selected brand, thereby demonstrating the difference between private and commercial imperatives for architecture (Fig. 2).

In Year 3, the design of accommodation at medium scale such as a hostel or hotel may be followed by a civic building, enabling students to apply lessons from their understanding of community projects and public space. While students are often required to work with real world problems of construction and materials they are pushed to question conventions and work towards new and innovative solutions appropriate for the future of their profession.

### Year 4: Design Studios

At Year 4, INDA provides a unique opportunity for students to explore different disciplinary trajectories in their final design studios. Instead of a thesis project required by most five year bachelor of architecture programs, INDA offers optional studios with five key themes: history and theory of architectural design, landscape urbanism, real estate, building technology, and urban design. These optional studios serve as an experimental ground for students to strengthen their existing interest, introducing them to broaden disciplinary boundaries. Moreover, these studios cover academic trajectories that students could potentially pursue in graduate school or later in professional practice.

In the previous years, a wide range of optional studio topics have been explored, with studio titles such as “Digital Prosthetics: The Virtual Grammar of Architecture”, “Stealth



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建造和材料问题，推动他们去质疑惯例并朝向寻找适用于未来职业生涯的创新解决方法而努力。

#### 第四学年：设计研讨课程

在第四年，INDA为学生们提供了一个特殊的机会，在最后的设计研讨课程中去探索不同的学科路径。INDA没有采用传统的五年制建筑学学士教育中要求的论文计划，而是提供了5个可供选择的主题性研讨课程：建筑设计的历史与理论、景观都市主义、房地产、建筑技术以及城市设计。这些可供选择的研讨课程作为学生们的实验阵地，让学生可以发展他们已有的兴趣并引领他们拓宽学科界限。此外，这些研讨课程所涵盖的学科路径，也成为学生们在今后的研究生教育或职业生

涯中继续追求的潜在目标。

在过去的几年，我们探索了较为广泛的可供选择的研讨课程主题，涉及的题目包括“数字修复术：建筑的虚拟语法”、“隐秘的门槛：一个新的流动聚落”、“曼谷水文表现”、“回忆的形式”，以及“对于建筑学院的再思考”。学生们在与建筑相关学科的多样化范畴中进行实验，我们相信为他们提供这样的机会不仅拓宽了知识的范式，也使不同的设计过程和设计方法得以交替，从而为建筑学及其应用提供了一个更加广泛的定义。

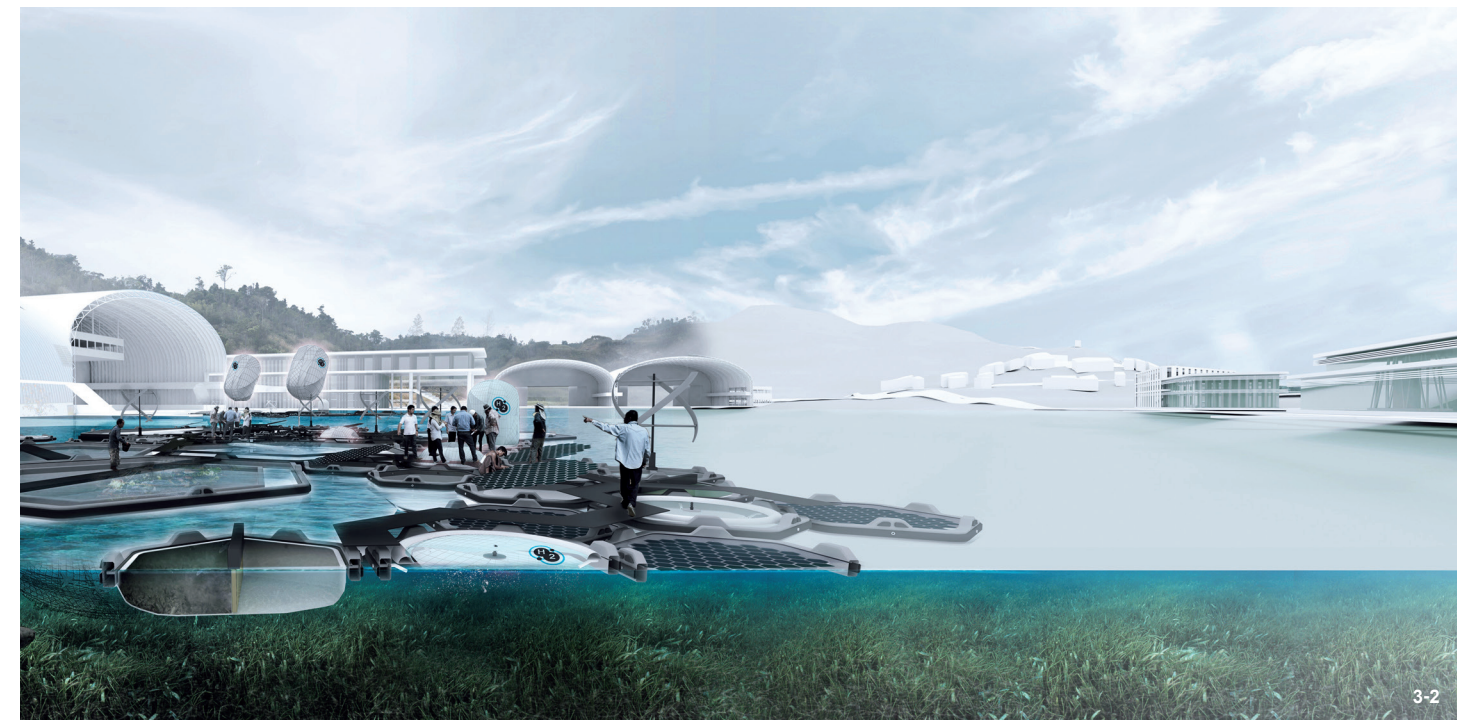
第四学年的可供选择的研讨课程也将学生们置身于国际化的背景之中。研讨课程所选择的场地不仅在泰国境内的地区，也遍布在世界各地的城市，例如迪拜、香

3. 第4学年H<sub>2</sub>Flow项目 © Pavin Banterngansha
3. H<sub>2</sub>Flow project, Year 4. © Pavin Banterngansha

Threshold: A New Fluid-Dynamic Settlement”, “Hydro Performative Bangkok”, “Forms of Recollection”, and “Reconsidering Architecture School”. We believe that the provision of opportunity for students to experiment with such a diverse spectrum of architecturally related disciplines exposes them not only to broaden paradigms of knowledge but also to alternate design processes and methodologies, thereby providing a broader definition of architecture and its applications.

Fourth year optional studios also engage students in international contexts. Studio sites include places within Thailand and from around the world such as Dubai, Hong Kong, Barcelona, Brussels, and Shenzhen. Students and instructors travel to the sites to investigate and document the physical context as well as to observe the local culture. Studio trips typically include sightseeing, visits to local architecture offices and schools, and lectures from local practitioners and academics. The trips provide students with firsthand experience in a foreign context and allow students to reflect on Thailand’s position in the globalized world.

Research plays a fundamental role in fourth year studios. With highly specific topics and sites that are largely foreign to the students, a large part of each studio is devoted to in depth research and analysis in order for the students to quickly construct a knowledge base from which to generate designs. Various research methods and tools are introduced in the process: GIS data mapping, real estate feasibility analysis, thermal and solar energy analysis. Research in this case is not only limited to data gathering and visualization but includes an intensive process of experimentation, which allows the students to deliver design proposals that are often direct results of their analytical studies. Landscape architecture studios in particular focus on hybridization of ecology, infrastructure, and design in structuring physical environment and reconciling temporal changes, unexpected disturbance, new programs, and events. The following examples of student projects illustrate the variety of topics, sites, design methodologies, and scope of research undertaken in fourth year optional studios.



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港、巴塞罗那、布鲁塞尔和深圳。学生和指导教师前往场地进行调研，记录物质环境，同时对当地文化进行观察。研讨课程的行程通常包括观光游览，参观当地的建筑事务所和院校，以及参加当地建筑师和学者的讲座。这样的旅行不仅使学生获得了国外环境的一手经验，而且促使他们对泰国在全球化世界中的位置进行思考。

研究在第四年的研讨课程中扮演了非常重要的角色。研讨课程通常有着非常具体的主题和对学生而言大部分位于国外的场地，因此大部分工作都要致力于深度研究与分析，以使快速构建一个知识基础，进而生成设计。在这一过程中，多样化的研究方法和研究工具被引入：地理信息系统数据制图、房地产可行性分析、热与太阳能分析。这里的研究不仅局限于数据的收集与可视化，而且包括了一个密集的实验性过程，并使学生在这个过程中推导出设计方案，而设计方案往往是分析研究的直接结果。景观设计研讨课程特别关注在构建物质环境时生态学、基础设施和设计的融合，以及时间变化、不可预见的扰动、新的项目与事件的调和。后文将

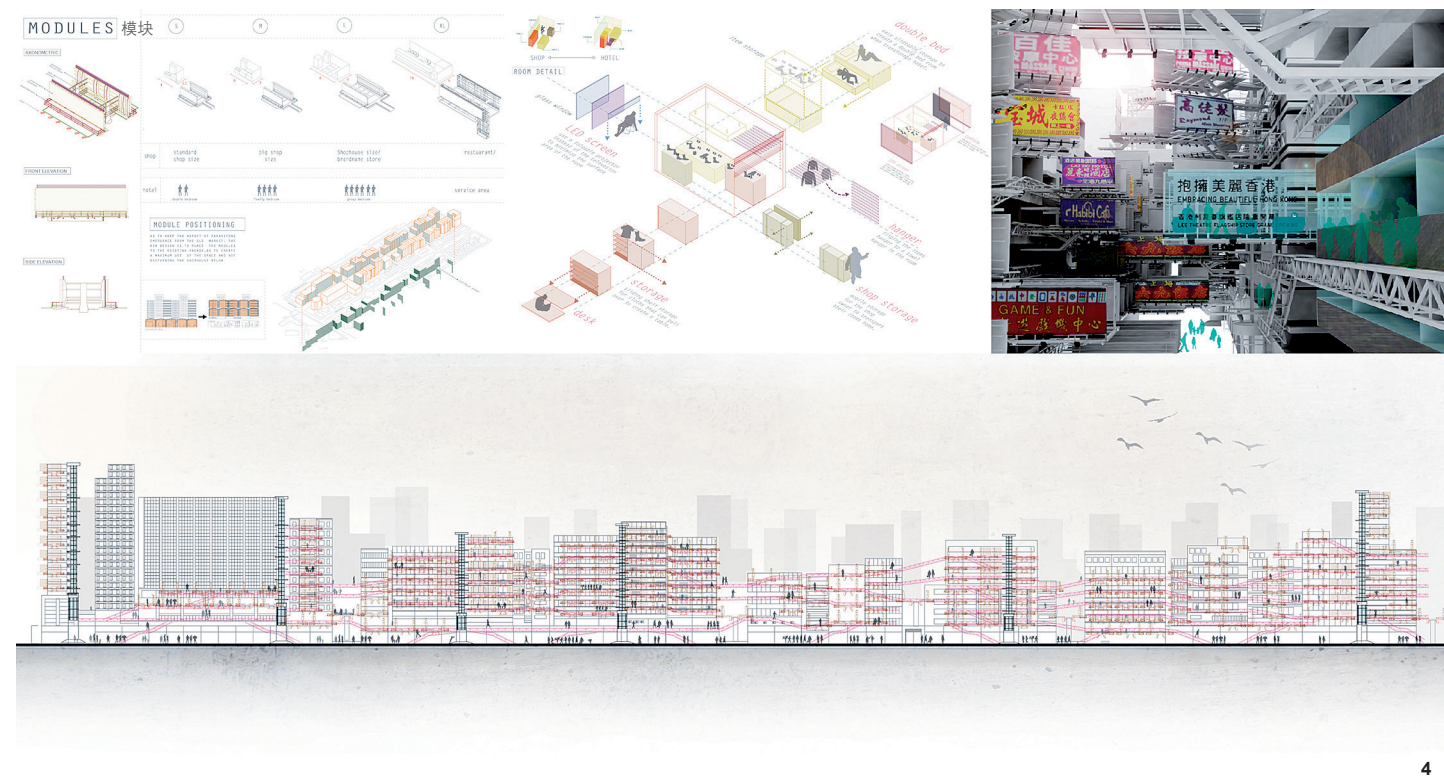
用学生项目案例来说明在第四学年可供选择的研讨课程的主题、场所、设计方法以及研究范围的多样性。

帕维·班腾汉莎（2014），H<sub>2</sub>Flow（研讨课程：塔科矿山：一个可操作的地形，指导教师：川·苏帕旺斯、陆小璇）

这一项目是景观都市主义研讨课程的一部分。H<sub>2</sub>Flow是一个自给自足的研究设施，它革新了中南半岛矿区内的现有能源网络并释放了氢能技术的潜能。这一跨国项目关注从水中提炼氢能，因为水是露天采矿过程中的副产品。塔科矿山是一个废弃的石英矿，拥有大量沉积的石英和氧化铁——石英和氧化铁是制氢的主要原材料——成为建立这一研究设施的最佳选址。H<sub>2</sub>Flow也为中南半岛地区引入了飞船物流交通系统和空气监测站（图3）。

科阿托·库卡威斯瑞（2013），标识建筑：垂直社区住宅与市场（研讨课程：洞穴城市——城市极端高密度

4. 第4学年“标识建筑”项目  
© Korrakot Kulkraisri
4. Signitecture project, Year 4.  
© Korrakot Kulkraisri



Pavin Banterghansa (2014), H<sub>2</sub>Flow (Studio: Tako Mine: An Operational Terrain, Instructor: Chon Supawongse, Xiaoxuan Lu)

This project was produced as part of a landscape urbanism studio. H<sub>2</sub>Flow is a self-sufficient research facility that revolutionizes off-the-grid energy and unlocks potential of hydrogen technology in Indo-China mineral region. This transnational project focuses on abstracting hydrogen energy from water, as water is one of the byproducts of the open-pit mining process. With its rich deposition of quartz and iron oxide — the main raw materials for hydrogen production — Tako Pid Tong, the abandoned quartz mine, serves as a perfect location to establish the research facility. H<sub>2</sub>Flow also introduces airship logistic transportation system, and air observatory for the Indo-China region (Fig. 3).

Korrakot Kulkraisri (2013), Signitecture: Vertical Community Residence + Market (Studio: DenCity — An Experimental Study of Extreme Urban Density, Instructors: Yarinda Bunnag, William Patera)

This project was produced as part of a studio researching extreme density in urban space, resulting in the projection of new urban typologies with mixed residential and civic programs. “Signitecture” is a speculative renovation proposal for the Ladies Market in Hong Kong. The Ladies Market was chosen based on tourism statistics and census data, where the surrounding blocks were highly populated residential buildings with street-level shops and temporary market spaces that bring a large influx of tourists during market hours. The project poses a difficult problem with three linked constraints: increase market space, increase of temporary residential accommodation, and improvement of existing residential spaces. The existing architecture and tectonics of advertising (signs) attempt to satisfy these constraints by creating a new vertical community of physically and programmatically transformable spaces. The spaces within the “signitecture” are shared temporally between transient residential and commercial user populations, and intended to grow over

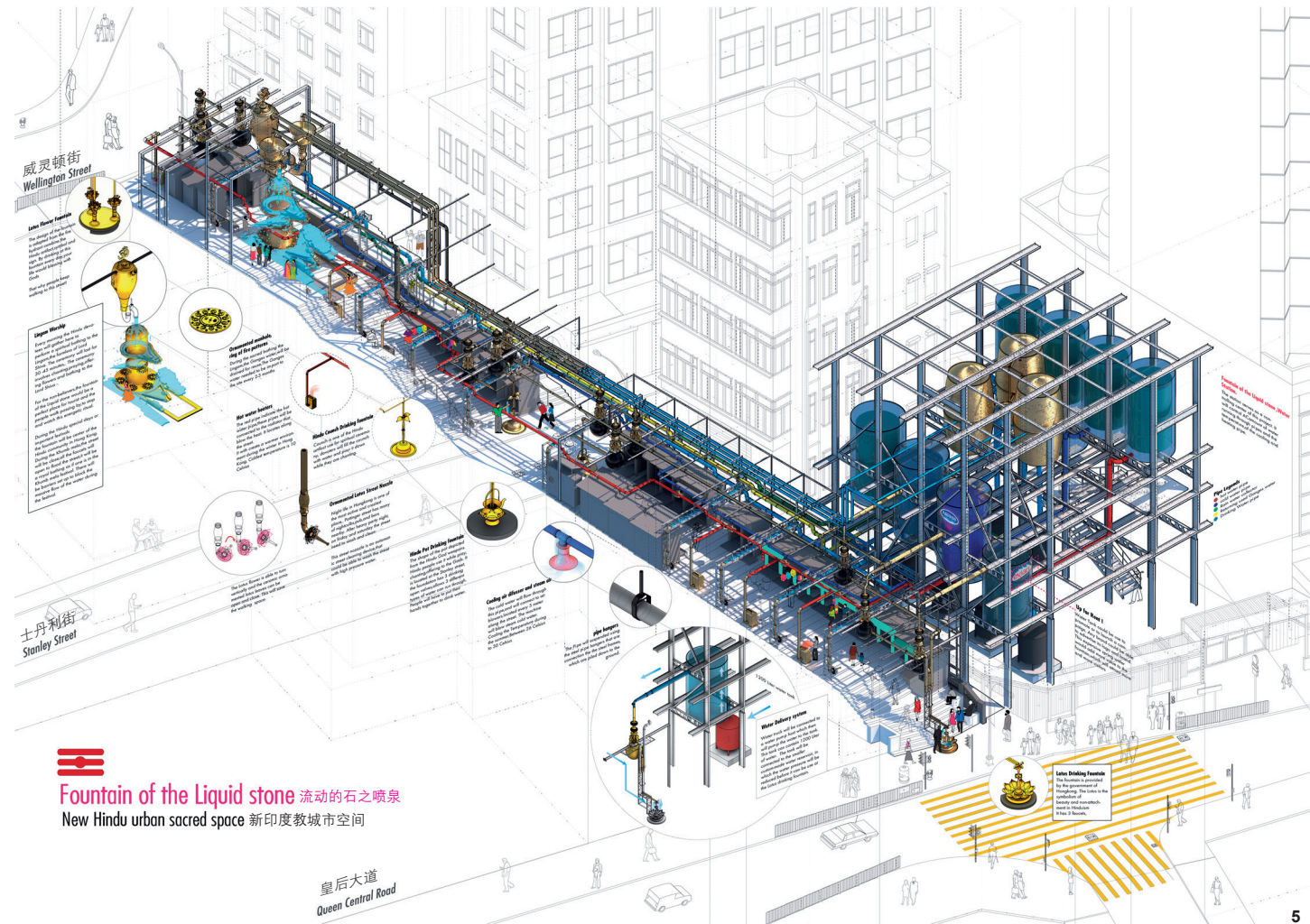
time from advertising and market revenue (Fig. 4).

Veerasu Saetae (2013), Fountain of the Liquid Stone (Studio: Visceral Intricacy, Instructor: Fredrik Hellberg)

In Hinduism, water is a significant ritual medium, and has the power to purify one’s soul. By bathing at the sacred river, Ganges, one’s lifetime’s sin could be absolved. It also has the power to unite people. Water, in urban environments, flows through the city’s infrastructure in various shapes and logics to the city inhabitants. Pipe systems are equivalent to our blood vessel that keep the city alive. “Fountain of the Liquid Stone” brings architecture to life; it is breathing, sweating, shivering, singing, chanting, praying, greeting and talking to you. It is a drinking fountain, a street cleaning machine, a heat and cold generator, and most importantly, a space for Hindu spiritual practice. All in the heart of one of the densest and most diverse cities in the world: Hong Kong. Each network of pipes running over busy streets carries water of specific types ranging from drinking water of various kinds to wholly Ganges water to be poured over the Shiva Lingam at the top of steep streets early in the morning. The Fountain of the Liquid Stone is a celebration of water as the giver of life and the city and its architecture as an active agent that can and should be interacted with (Fig. 5).

#### Year 4 Field Trips: Active Fields II

The Year 4 studio “Active Fields II” involved the design of a debating chamber that aims to portray the ever changing identity of the European Union. Students traveled to Brussels, Belgium, in February 2014 in order to study the current situation of the European Parliament chamber, which was closed while undergoing restoration after the collapse of its roof structure in 2012. Students then took the role of detectives as they were not allowed in the building, which is usually open to the public. Utilizing all resources and contacts they were finally able to obtain a special admission pass to the parliament and obtain architectural drawings of



下的实验研究，指导教师：雅琳达·邦恩纳克、威廉姆·帕特拉)

这一项目源自对都市空间极端高密度区域研讨课程的一部分，形成了混合居住和市民活动的新城市类型。“标识建筑”是一个为香港女人街提供的探索式的振兴计划。基于旅游统计数据 and 人口普查数据，项目选择女人街作为研究场地：其周边的街区由高人口密度的住宅构成，沿街的商铺和临时性市场空间在集市时间内吸引了大量的观光客。该计划在三个相互关联的限制条件——增加市场的空间、增加临时性居住场所以及提升现有的居住空间——下假设了一个难题。该项目试图通

过现有的建筑和广告标牌构成来满足这些限制条件，创造了一个新的垂直社区，其空间可从实体及功能上进行灵活转变。“标识建筑”项目内部的空间可供临时居住者和商业使用者之间在不同时段共享，并预计会因广告和市场利润得到不断扩张(图4)。

维尔苏·塞特(2013)，流动之石喷泉(研讨课程：内在的复杂性，指导教师：弗雷德里克·赫尔贝里)

在印度教中，水是一种非常重要的宗教媒介，可以净化人的灵魂。通过沐浴在神圣的河流——恒河——之中，一个人终生的罪过可以得到宽恕。水也具有凝聚

it, as well as a detailed briefing of the undergoing restoration scheme. In addition, students were able to discuss their projects and the studio agenda with professors and students at TU Delft and The Berlage Institute in Delft, Holland, just a few hours away from Brussels. The combination of field research and investigation together with being involved in local academic discussion resulted in a truly inspiring and informative experience that provided the students with broader research and discussion skills as well as a strong base for developing relevant design answers to the semester's brief (Fig. 6).

### INDA Exchange Program

An alternative to taking optional studios at INDA would be to participate in an exchange semester abroad. 30 students studied abroad in 9 different countries on 4 different continents in the past year. We sent students to some of our established exchange partners at Chu Hai University in Hong Kong and Tunghai University in Taiwan, China, Meiji University in Japan, the University of Hawaii, the University of Idaho in the USA, NUS in Singapore and the Ecole Nationale Belleville in Paris, France. We also sent some INDA pioneers to new programs at the University of Utah in the USA, the University of Oslo in Norway, Canberra University in Australia and the University of Sheffield in the UK. Our exchange programs ensure that our students gain exposure to foreign study and experience as part of their international education.

### Experiencing Architecture Tours, International Workshops and Design Experimentation Workshops

Throughout four years at INDA, students have multiple opportunities to engage in international projects and collaborations. Courses such as Experiencing Architecture Tours and International Workshops allow students to travel abroad to experience a foreign context and collaborate with our partner schools in other countries. Through Design Experimentation Workshops we also bring international visitors to collaborate with faculty and students in Bangkok (Fig. 7).

Typically, the workshops are structured as charrettes that require the students to work in teams with students from other universities and to engage directly with a foreign site / issue. From these workshops, students learn to be agile, creative, collaborative, and efficient in their design processes. Experiencing Architecture summer programs are short sightseeing and research trips, each with a unique destination and clear thematic. In 2013, a trip to Bali in Indonesia enabled students to visit a number of temples and resorts, as well researching bamboo construction techniques and visiting key examples bamboo architecture. Stone Pilgrims trips have taken students to Spain in 2013 and England in 2014, with the aim of studying dry stone constructions from both technical and ornamental points of view.

### Experiencing Architecture Tours: Stone Pilgrims

The interest in dry-stone masonry lies in its simplicity of means to achieve complex structural compositions. By giving each stone a specific shape, the whole composition is able to stand up as long as no piece is missing or misplaced. The absence of tension elements makes the structure a pure reflection of the way in which gravitational forces are

5. 第4学年“流动之石”喷泉项目  
© Veerasu Saetae
6. 第4学年临时贮藏室项目  
© Jariyaporn Prachasartta
5. Fountain of the Liquid Stone project, Year 4.  
© Veerasu Saetae
6. Repository of Temporal Identities project, Year 4.  
© Jariyaporn Prachasartta



人群的力量。在城市环境中，水通过城市基础设施以多种多样的形式和规律流向千家万户。管道系统等同于人体当中的血管，维持着城市的生命。“流动之石喷泉”将建筑带入生活：它可以呼吸、流汗、颤抖、吟唱、祈祷、问候以及对话。它是一个可以饮用的喷泉、一个清洗街道的机器、一个冷热发电机，最为重要的是其可以作为印度教修行的空间。所有的这些都位于世界上最具多样化且密度最高的城市之一——香港的中心。每一个管道网络携带着特定类型的水从繁忙的街道溢出，从不同类别的饮用水到每日清晨从陡峭的街道上方倾倒在湿婆林伽身上的恒河水。水是生命和城市的赐予者，液体石喷泉是水的欢庆，而在这个项目中建筑作为一个活性剂，可以也必须与水交织在一起（图5）。

#### 第四学年实地考察：激活场地II

第四学年中的研讨课程“激活场地II”涉及对一个议事厅的设计，旨在描绘欧盟不断变化的身份。2014年2月，学生们前往比利时布鲁塞尔，对欧洲议会大厦的现状展开调研。2012年其屋顶结构倒塌之后，大厦曾一度关闭以进行修复。通常情况下，大厦是对公众开放的，但现在不被允许进入建筑之中，于是学生们开始扮演起了侦探的角色。动用所有的资源与人脉，学生们最终获得了一份前往议会大厦的特殊通行许可和建筑图纸，以及正在进行的修复计划的详细介绍。另外，学生们还就他们的项目和研讨课程计划与荷兰的代尔夫特理工大学和贝尔拉格学院的师生们进行了讨论。这两所学校距布鲁塞尔仅有几个小时的路程。对场地的研究与调查，以及在本地开展的学术讨论结合在一起，形成了一种真正具有启发意义和充实内容的体验。这一体验为学生们提升了他们的研究与讨论技巧，同时为发展针对学期简报的相关设计答案提供了一个坚实的基础（图6）。

#### INDA交流项目

在INDA可供选择的研讨课程其中之一是参与一学期的海外交换。在过去的一年中，有30名学生前往四大洲的9个不同国家学习。我们将学生输送至我们已经建立了合作交流关系的学校，例如中国的香港珠海学院和台湾东海大学、日本明治大学、美国的夏威夷大学和爱达荷大学、新加坡国立大学以及法国巴黎国立高等贝尔

维尔学校。我们也指派了一些INDA的学术先锋参与美国犹他大学、挪威奥斯陆大学、澳大利亚堪培拉大学和英国谢菲尔德大学的新项目。我们的交流项目确保学生们能够获得海外学习的机会和经验，这些都成为了国际教育的一部分。

#### 体验式建筑旅行、国际化设计营以及实验性的设计营

经过在INDA的4年学习，学生们拥有多种机会参与到国际化的项目与合作之中。诸如体验式建筑旅行和国际化专题研讨会这样的课程使得学生们到国外游历去体验外国的氛围，并与我们在其他国家的合作院校展开合作。通过实验性的设计营，我们也邀请了具有国际背景

的访问者与曼谷的老师和学生一起合作（图7）。通常，这些设计营是按照研讨会的形式建立起来的。研讨会要求学生们与来自其他大学的学生分小组进行工作，并且直接参与到国外的场地或者议题之中。通过这些设计营，学生们学习如何在设计过程中成为灵敏、富有创造力、善于合作以及高效的一员。建筑体验的暑期项目是短期观光与研究之旅，每次旅行都拥有一个独特的目的地和清晰的主题。在2013年，学生们通过一段位于印度尼西亚巴厘岛的旅行参观了大量的庙宇和名胜古迹，同时也研究了竹建筑技术并参观访问了重要的竹建筑作品。“石之朝圣”之旅带领学生们在2013和

7. 2013年“编织纺织品”设计实验设计营  
7. "Manipulating Fabric" Design Experimentation Workshop, 2013.



traveling through it. The construction can, therefore, be read as a structural diagram. Carvings in the stones tell us stories of Gods and Devils, clerestory windows and glazed cinquefoils transform light and allude to heavenly realms.

The format of a pilgrimage not only gave the possibility of visiting a considerable amount of buildings in a relatively short period of time (fifteen to twenty days) but, more importantly, it provided the students with an overview of stone constructions across a country, becoming aware of external influences and evolution of techniques and styles in relation to geographical location and cultural realm. In these pilgrimages, INDA students have studied over 30 buildings in more than 25 different cities across Spain and England and are currently in the process of converting the information into stone-maps of both countries.

#### Design Build Projects

Each summer students select from a range of design build projects both within Thailand and abroad. In these projects, students are directly involved in all aspects of design from briefing and concept to final construction. Projects range from small scale installations to free-standing buildings. Many of the projects focus on community engagement, often in rural regions of Thailand, for example, providing assistance in the form of learning spaces for schools or meeting areas for local communities (Fig. 8).

#### Design Build Berlin 2011: “Bang”

In the summer of 2011, 24 INDA students travelled to Berlin to participate in a Design Build course. Berlin is a city that is rife with conflicts from the scars on the surfaces of its museums and monuments to the voids it bears in the heart of its urban landscape. Historically, Berlin has been a witness and host to some of the most significant socio-political conflicts in the modern world. Today, Berlin is actively rebuilding and reframing its identity through economic policy, architectonic revisions, and cultural initiatives.

Organized jointly with PROGRAM e.V., the course provided a platform for the students to research the existing

conditions of the city, to formulate a personal hypothesis toward the current condition of conflict, and to propose and physically test their ideas. The course was divided into two halves, in two different locations: the first part in the former East Berlin, and the second in West Berlin. The students began with a mapping project in Kreuzberg, and then moved to a site along the former Berlin Wall, in “Park am Nordbahnhof”, where they were asked to design an interface that expands the definition of a boundary. Students then moved to Preußen Park, known as “Thai Park”, where they designed and built pieces of outdoor furniture that both displayed and ameliorated the conflicts at work on the site. Park users — food vendors, diners, sunbathers, dog walkers, and tourists — participated in the pop-up installation. The event, Bang, was a great success, receiving several hundreds of guests as well as positive reviews by both German and Thai journals and newspapers. The word “Bang” in Thai translates to divide but also means to share, and was selected by the students as the title of their project. **LAF**

#### NOTE

① INDA instructors who have co-authored this article include Scott Drake (Academic Coordinator), William Patera (Year 1 Coordinator), Lara Lesmes (Year 2 Coordinator), Fredrik Helberg (Year 3 Coordinator), and Yarinda Bunnag (Year 4 Coordinator)

2014年分别探访了西班牙和英格兰，目的是学习干砌石建造技术和装饰艺术。

### 体验式建筑旅行：石之朝圣

对于砌石技术的兴趣存在于它能够通过简洁的途径实现复杂的建筑作品。每块石头被赋予一个特定的形状，只要没有一块石头缺失或者错位，整个建筑作品就能够经久耐用。建筑中没有充满紧张的元素，从而使得结构成为一种吸引人穿过的纯粹映射。因此，建筑可以被解读为结构的图式。石头上的雕刻讲述着上帝与魔鬼的故事，天窗玻璃和釉面装饰将光影转换并影射到神圣的领域。

这一朝圣之旅的设计不仅可以在相对较短的时间内（15~20天）能够参观大量建筑，而且更为重要的是，它为学生们提供了一种纵观整个国家石材建筑的机会，开始了解到外部的影响、技术的进步以及因地域和文化而形成的不同风格。在朝圣之旅中，INDA的学生们研究学习了遍布西班牙和英国超过25个不同城市中的30余座建筑，并正在将这些信息转化为两国的石材建筑地图。

### 设计建造计划

每个暑期学生们要在位于泰国和国外的一系列设计建造计划中进行选择。在这些项目中，学生们直接参与到设计的方方面面，从指示会议、到概念生成再到最终的建设施工。项目范围从小尺度的安装到平地起高楼。其中大量项目都关注社区参与，这些项目通常位于泰国的乡村地区。例如，以创造学校学习空间或者社区内集会区域的形式提供专业帮助（图8）。

### 设计建造柏林2011：“Bang”

在2011年暑假，24名INDA学生前往柏林参与一项设计建造课程。从博物馆和纪念碑上的伤痕到城市景观中心的空间可以看出，柏林是一个充满矛盾的城市。历史上，柏林曾经见证并主导了现代世界中的许多重要的社会-政治冲突。今天，柏林通过经济政策、建筑修复和文化创新，正在积极活跃地重新塑造和审视他的角色。

这一课程与PROGRAM e. V.组织联合主办，旨在为学生们提供一个平台，让学生可以针对城市现状展开研

究，针对现存的矛盾冲突表达个人假设，并提出和构建检验他们想法的物质实验。这一课程被划分为位于不同区位的两个部分：第一部分是历史上的东柏林，而第二部分位于西柏林。学生们的工作始于对克罗伊茨贝格的测绘，之后转移到沿着旧时柏林墙的一个场地，在火车北站公园学生们被要求设计一个能够拓展边界定义的界面。紧接着，学生们来到著名的普鲁斯公园，即“泰国公园”，在这一公园中，他们设计并建造不同的室外家具来进行展示并改善由于场地活动引发的冲突。公园的使用者们——食品摊贩、用餐者、日光浴者、遛狗者和观光者——都参与到这一突如其来的安装过程中。活动“Bang”收获了巨大的成功，接待了成百上千的观众，并收到了来自德国和泰国杂志与报纸的广泛好评。在泰语中“Bang”被译为分裂，但也意味着分享，这也正是学生们选择“Bang”作为这一项目的主题的原因。LAF

#### 注释

INDA的教员斯科特·德雷克（学术协调人）、威廉姆·帕特拉（第一学年协调员）、劳拉·莱斯梅斯（第二学年协调员）、弗雷德里克·赫尔贝里（第三学年协调员）、雅琳达·邦恩纳克（第四学年协调员）对本文亦有贡献。

8. 在泰国佩彻布里进行的社区设计建造项目。
8. Community design build project in Petchaburi, Thailand.

