

国大医院与拉萨尔艺术学院跨界合作

创新设计优化医疗细节践行绿色理念



现有手术托盘（左）的摆放逻辑混乱，不仅拖慢手术节奏，也容易造成不必要的材料消耗。拉萨尔艺术学院社会未来设计应届生陈怡静数月的深入采访后设计出改良版托盘原型（右），减少包装垃圾的同时，缩短护士的准备时间。（郑一鸣摄）

合作项目共有六名社会未来设计应届毕业生参与，各自从不同角度剖析医疗系统在可持续性方面的盲点。项目负责人说，现正逢国大医学组织重新设计和发展阶段，多个机构都对设计概念表现出浓厚兴趣。

生生不息

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新加坡国立大学医院与拉萨尔艺术学院跨界合作，让应届毕业生深入医院环境进行田野调查，从设计视角出发，为医院各环节提出切实可行的可持续优化方案。

一个放置手术器械的托盘，看似微不足道，却可能是医生失误、材料浪费，乃至手术室效率低下的源头之一。拉萨尔艺术学院社会未来设计（Design for Social Futures）应届毕业生陈怡静在国大医院手术室蹲点观察数月后发现，现有手术托盘的设计并不理想，器械摆放逻辑混乱，不仅拖慢手术节奏，也容易造成不必要

的材料消耗。

“棉球等消耗品与锋利的手术器械混杂在同一个空间，使托盘非常杂乱和拥挤，医生在手术过程中甚至须要翻找所需器械。”

她在重新设计后提议，将托盘的深度与高度调整得更贴合医生的工作流程和习惯，使医生可以精准地抓取所需工具。她也建议，将原本须要单独拆封的多个工具和耗材重新组合，设计为两个预先打包的套袋，护士只须撕开外包装，医生即可直接使用。

重新设计手术器械托盘可减少58公斤包装垃圾

据她估算，这一看似小小的改变每年可减少约58公斤的包装垃圾，护士准备的过程也从3分15秒大幅缩短至约41秒。

另一名女生英达（Inda Kiranthie）发现不少人有囤积药物



陈怡静（左一）和英达（右一）以及其他应届生展出各自的毕业项目，国立大学医院眼科顾问医生林晓红（右二）和林丰隆（左二）是这个跨界项目的主要负责医生。他们认为，这六名学生的设计让他们看到了许多医疗流程中被忽略的人性细节。（郑一鸣摄）

的习惯。她提议打破传统药板单线性排列，采用能直观呈现每周服药剂量的创新包装结构。这不仅帮助患者轻松追踪进度和认清标签，更能有效避免因遗忘或看错有效期而导致的重复服药。

国大医院与拉萨尔艺术学院跨界合作的“可持续医疗设计实验室”项目共有六名社会未来设计应届毕业生参与，各自从不同角度剖析医疗系统在可持续性方面的盲点。

学生的训练从医院实习开始，继而展开长达九个月的密集田野工作，深入观察医疗程序，访谈对象涵盖医生、护士、药剂师、管理层、清洁工，甚至负责手术器械消毒的后勤人员。

国立大学医院眼科顾问医生林晓红和林丰隆是这个跨界项目的主要负责医生，他们不仅在拉萨尔执教，还为学生们牵线搭桥到各个科室。他们说，几名学生的设计让他们看到医疗及可持续流程中许多被忽略的人性细节，而这些细节恰恰能通过设计被重新理解与改善。

医生：会将学生设计考虑在新医院建设中

林丰隆说，现在正好是国大医学组织重新设计和发展的阶段，不少新空间正在规划中。学生们最终展示成果时，包括兴建中的登加综合与社区医院在内的多个机构，都对他们的设计概念

表现出浓厚兴趣。“我们很欣慰看到，这些作品不只是毕业论文，而是真正有机会应用到现实医疗环境，发挥作用。”

拉萨尔艺术学院社会未来设计课程是本地首个专门培养设计师在非设计领域工作的本科课程。2026年的首届毕业生中，除参与医院项目外，也涉足租赁屋等其他社区空间的设计。

课程负责人蔡议宽说，随着人工智能（AI）的发展，AI将会接管许多传统设计中的特定技

能，因此她在课程中极力培养学生的跨领域技能。她指出，有过半的设计工作需求其实存在于“非设计领域”，但绝大多数的学生依然只想去传统设计岗位，缺乏进入非设计领域的信心。

社会未来设计这门2024年才开始的新课程，正是致力于教授学生跨领域的视角和思维，让学生在设计发挥真实的社会影响力。“在如今就业的大环境下，拥有这种横跨多个领域的技能是被雇主看中的要点。”

National University Hospital and LASALLE College of the Arts collaborate to innovatively optimise healthcare details and adopt green practices

The National University Hospital (NUH) and LASALLE College of the Arts collaborated to allow recent graduates to conduct in-depth field research in the hospital environment, proposing practical and sustainable optimisation solutions for various aspects of the hospital from a design perspective.

A surgical instrument tray, seemingly insignificant, can be a source of medical errors, material waste and even operating room inefficiency. Tan Yee Jing, a recent graduate from the BA (Hons) Design for Social Futures programme at LASALLE College of the Arts, observed the operating room at the National University Hospital for several months and found that the existing surgical tray design was less than ideal. The instruments were arranged illogically, slowing down the surgical process and leading to unnecessary material waste.

"Consumables like cotton balls were mixed with sharp surgical instruments in the same space, making the tray very cluttered and crowded. Doctors even had to rummage through the trays to find the instruments they needed during surgery."

After redesigning the tray, she suggested adjusting its depth and height to better suit doctors' workflow and habits, allowing them to accurately grasp the necessary tools. She also recommended repackaging the multiple tools and consumables that previously required separate unpacking into two pre-packaged sets, so nurses could simply tear open the outer packaging for doctors to use directly.

Redesigning surgical instrument trays can reduce packaging waste by 58 kilograms

She estimates that this seemingly small change can reduce packaging waste by approximately 58 kilograms annually and the nurse preparation time is significantly reduced from 3 minutes and 15 seconds to approximately 41 seconds.

Another student, Inda Kiranthie, discovered that many people have a habit of stockpiling medications. She proposed breaking away from the monotonous linear arrangement of traditional medicine blister packs and adopting an innovative packaging structure that visually displays the weekly dosage. This not only helps patients easily track progress and recognise labels but also effectively avoids duplicate prescriptions due to forgetting or misreading expiration dates.

The Sustainable Medicine Design Lab project, a cross-disciplinary collaboration between the National University Hospital and LASALLE College of the Arts, involved six recent graduates in the field of social design, each analysing blind spots in the sustainability of the healthcare system from different perspectives.

The students' training began with hospital internships, followed by nine months of intensive fieldwork, deeply observing medical procedures and interviewing doctors, nurses, pharmacists, management, cleaners and even logistical staff responsible for sterilising surgical instruments.

Consultant ophthalmologists Dr Blanche Lim and Dr Chris Lim from the National University Hospital are the main physicians in charge of this interdisciplinary project. They not only teach at LASALLE but also connect students with various departments. They say the students' designs allowed them to see many overlooked human details in healthcare and sustainable processes, details that can be reinterpreted and improved through design.

Physicians: Student designs will be considered in the new hospital construction

Dr Chris Lim said that this is currently a phase of redesign and development for NUS's medical organisation, with many new spaces under planning. When the students presented their final results, several institutions, including the under-construction Tengah General and Community Hospital, showed great interest in their design concepts. "We are pleased to see that these

works are not just graduation theses but have a real opportunity to be applied to real-world healthcare environments and play a role."

The BA (Hons) Design for Social Futures programme at LASALLE College of the Arts is the first undergraduate programme in Singapore specifically designed to train designers for work in non-design fields. Among the first graduates in 2026, in addition to participating in hospital projects, they have also been involved in the design of other community spaces such as rental flats.

Programme Leader Wendy Chua said that with the development of artificial intelligence (AI), AI will take over many specific skills in traditional design. Therefore, she strives to cultivate students' interdisciplinary skills in the course. She pointed out that more than half of the demand in design jobs actually exists in non-design fields but the vast majority of students still only want to work in traditional design positions and lack the confidence to enter non-design fields.

The new programme, BA (Hons) Design for Social Futures, which only began in 2024, is dedicated to teaching students interdisciplinary perspectives and thinking, allowing their designs to have a real social impact. "In today's employment environment, having this kind of cross-disciplinary skill is a key point that employers value."