



**EXTENDED
ABSTRACT**

**Design
Innovation
Academic
Show 2025**





DIAS 2025 (Design Innovation Academic Show) is all about "Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st Century Education." This vibrant program shines a spotlight on how creativity and innovation are reshaping modern education.

It consists of three key components. First up is the Mindareka Design Show, an exhibition that showcases students' final year projects and creative designs, giving them a chance to connect with industry professionals and the wider community. Next, we have the Northern Innovation Academic Tour (NIAT), which takes participants on an academic adventure to select institutions and innovation centers in the northern region, aimed at promoting knowledge sharing and building strong academic and professional networks.

Finally, there's the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID), a global competition that recognizes outstanding practices in teaching and learning by blending art, technology, and innovative design. But DIAS 2025 is more than just a talent showcase; it's a powerful platform for empowering both students and educators, while also strengthening collaborations between universities, creative industries, and global communities. With its inclusive and interdisciplinary approach, this initiative strives to spark relevant, competitive, and impactful ideas and innovations that truly benefit society and push the future of education forward.



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Design
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Show 2025



Prof. Dr. Roshima Haji Said
Acting Rector
UiTM Kedah Branch

Rector's Message

I am delighted to extend my heartfelt congratulations to the College of Creative Arts, UiTM Kedah Branch, for bringing MINDAREKA 2024 - Unleashing Your Visual Creativity to fruition. The triumphs of past MINDAREKA editions undoubtedly fueled the organization of this year's event, making MINDAREKA 2024 a reality.

MINDAREKA 2024 - Unleashing Your Visual Creativity stands as a testament to the dedication of students at the College of Creative Arts, UiTM Kedah Branch, providing them with a platform to showcase their final art projects. Beyond serving as a space for the exploration of fresh, innovative, and entrepreneurial concepts, this exhibition is poised to connect aspiring talents with potential clients and employers.

I extend my sincere gratitude to all participants whose enthusiasm and support have contributed to the success of MINDAREKA 2024 - Unleashing Your Visual Creativity. Their unwavering belief and commitment have truly brought this event to life, marking it as a resounding triumph!





Head of Faculty Message

It is an honour to introduce DIAS 2025 – Design Innovation Academic Show, held under the theme “Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st-Century Education.” This significant event reflects the faculty’s ongoing commitment to fostering a culture of innovation, critical thinking, and creative exploration among our students and academic community. As we navigate the complexities of the 21st century, it becomes increasingly clear that education must go beyond traditional boundaries to embrace multidisciplinary approaches that are both relevant and future-forward.

The three core components of DIAS 2025, Mindareka Design Show, Northern Innovation Academic Tour (NIAT), and the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID) which is serve as vital platforms to highlight the convergence of design, technology, and pedagogy. These initiatives not only empower our students to showcase their talents and ideas, but also create opportunities for engagement with industry leaders, academic peers, and global collaborators. The Mindareka Design Show celebrates student creativity and innovation through compelling final year projects. NIAT fosters knowledge sharing and institutional partnerships through academic visits and exchanges, while InViCCAID offers international recognition for excellence in integrating art and design into teaching and learning.

I would like to express my deepest appreciation to the organising committee, faculty members, students, and strategic partners who have worked tirelessly to bring this programme to life. Your dedication and collaborative spirit have made DIAS 2025 a reality and a reflection of our shared vision for transformative education. It is my hope that this platform will continue to inspire meaningful dialogue, cultivate groundbreaking ideas, and spark a new wave of innovation that enriches both education and society.



Mohamat Najib Mat Noor
Head of Faculty
Faculty of Arts & Design
UiTM Kedah Branch





***Industrial
Design
(Diploma)***





RELIVE | Disposable Toilet System

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ABSTRACT

The RELIVE Disposable Toilet System is a modular, portable, and user-focused sanitation solution designed to address the urgent hygiene needs of displaced communities during flood crises. In temporary shelters across Malaysia, people often face overcrowding, limited access to clean water, and a lack of safe toilet facilities—leading to open defecation, disease spread, and loss of dignity. RELIVE provides a compact, easy-to-use, and sustainable alternative to traditional sanitation. It features biodegradable waste bags, a lightweight structure, and optional privacy enclosures. Designed with circular principles, the system uses compostable materials, minimizes water use, and supports fast mass production and local distribution. It aims to restore dignity, hygiene, and safety in humanitarian emergencies.

Keywords: Flood Crisis, Portable Toilet, Humanitarian Design, Sanitation, Privacy, Circular Design

INTRODUCTION

Floods in Malaysia—caused by monsoon rains, climate change, poor drainage, and deforestation—often displace thousands of people, especially in states like Selangor, Kelantan, and Pahang. These victims are relocated to temporary shelters (Pusat Pemindahan Sementara) that frequently lack safe, functional toilets. In such overcrowded environments, privacy, hygiene, and sanitation become critical but unmet needs. The RELIEF Disposable Toilet System is a practical response to this



humanitarian issue. It offers a compact and hygienic sanitation solution with a user-friendly design that prioritizes privacy, ease of use, and sustainability. Unlike conventional toilets, it requires no plumbing and uses minimal water—ideal for flooded areas. Its goal is to improve health, restore dignity, and reduce environmental impact during disaster response.



Figure 1 RELIEF Disposable Toilet System

MATERIALS AND METHODS

The RELIVE system consists of several core components. The structure is made from lightweight and foldable materials such as bamboo, recycled cardboard, or durable ABS plastic, ensuring easy transport and storage. Waste bags are made from biodegradable or compostable plastic liners infused with absorbent materials like rice husks or sawdust to trap odors and solidify waste. A privacy tent is included as an optional foldable enclosure to provide gender-safe and culturally respectful privacy. The system operates without plumbing, relying on waterless sanitation methods to minimize water use. A sealing mechanism using zip-lock bags and odor-proof coatings ensures hygienic disposal and reduces the spread of disease. Production methods focus on flat-pack design, local sourcing, and low-cost materials. Mass manufacturing can be achieved through injection molding for hard plastic parts or pressing for cardboard structures, with kits bundled for rapid deployment.



RESULTS AND DISCUSSION / FINDINGS

In a real flood crisis, users receive RELIVE kits upon arrival at evacuation centers. The toilet is easily assembled, lined with a waste bag, and used privately within a foldable tent. After use, the bag is sealed and placed in a designated bin for proper disposal. Research and simulations highlight several findings. Privacy remains a major concern, especially for women, children, and the elderly. The enclosure provides much-needed safety and dignity. The hygiene aspect is addressed through the dry system, which eliminates the need for flushing and minimizes disease transmission in overcrowded shelters. Waste management benefits from compostable materials, although designated waste collection points are essential for effectiveness. With clean water often scarce during floods, waterless toilets offer a critical advantage over traditional flush systems. The use of recyclable and modular materials supports durability and reusability, aligning with circular design values. However, challenges remain, especially in managing waste disposal logistics during extreme flooding. Coordination with local authorities is necessary to ensure safe collection and transport.

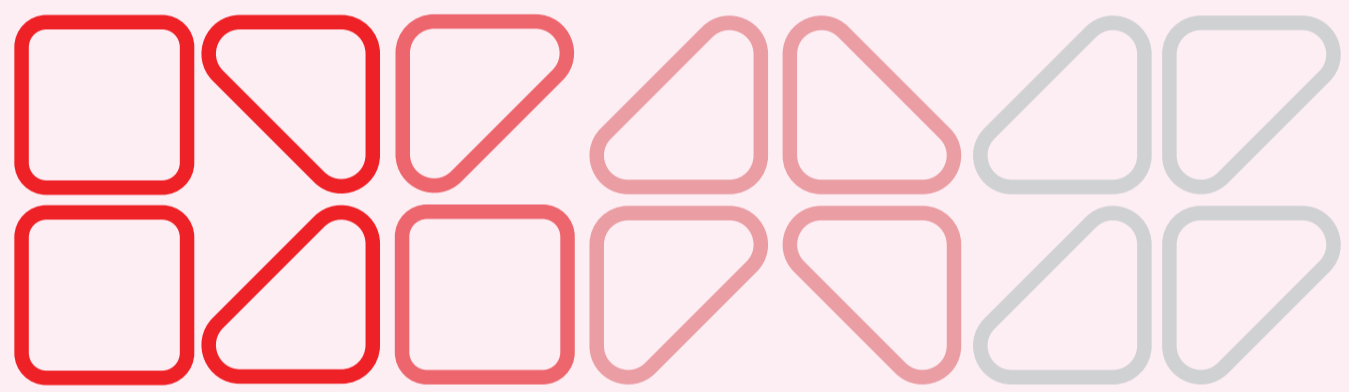
CONCLUSION & RECOMMENDATION

The RELIVE Disposable Toilet System is a functional, dignified, and sustainable solution for sanitation in flood-prone temporary shelters. It addresses key issues such as privacy, portability, hygiene, and waste reduction while being adaptable to various crisis settings. It is recommended that RELIVE kits be integrated into national disaster response stockpiles and distributed during emergency deployments. Shelter managers should be trained in proper setup and disposal protocols. The design can be further expanded to include variations for long-term camps, disabled users, and high-volume areas. Partnering with local manufacturers will enable rapid, low-cost production. With its thoughtful balance of functionality, affordability, and empathy, RELIEF represents a vital step toward improving humanitarian sanitation through design.



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