



UNIVERSITI  
TEKNOLOGI  
MARA

Cawangan Perak



## **BUILDCON2023**

**COMPILATION OF PROJECT INNOVATION IDEAS  
SEMESTER MARCH – AUGUST 2023**

*EMBRACING SMART CONSTRUCTION TRANSFORMATION*

# **BUILDERS' CONVENTION DAY 2023**

**Department of Built Environment Studies and Technology  
College of Built Environment  
Universiti Teknologi MARA Perak Branch**

**BUILDCON 2023**  
**COMPILATION OF PROJECT INNOVATION IDEAS**  
**SEMESTER MARCH – AUGUST 2023**



**Organised by**  
Department of Built Environment Studies and Technology  
College of Built Environment  
Universiti Teknologi MARA Perak Branch  
Malaysia

# **BUILDCON 2023**

## **COMPILATION OF PROJECT INNOVATION IDEAS**

### **SEMESTER MARCH – AUGUST 2023**

#### **Editors**

*Siti Akhtar Mahayuddin*

*Noor Rizallinda Ishak*

*Nor Asma Hafizah Hadzaman*

*Sallehan Ismail*

© Unit Penerbitan UiTM Perak, 2024

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise; without permission on writing from the director of Unit Penerbitan UiTM Perak, Universiti Teknologi MARA, Perak Branch, 32610 Seri Iskandar Perak, Malaysia.

Perpustakaan Negara Malaysia

Cataloguing in Publication Data

No e- ISBN: 978-967-2776-24-6

Cover Design: Muhammad Naim Mahyuddin

Typesetting : Siti Akhtar Mahayuddin

e ISBN 978-967-2776-24-6



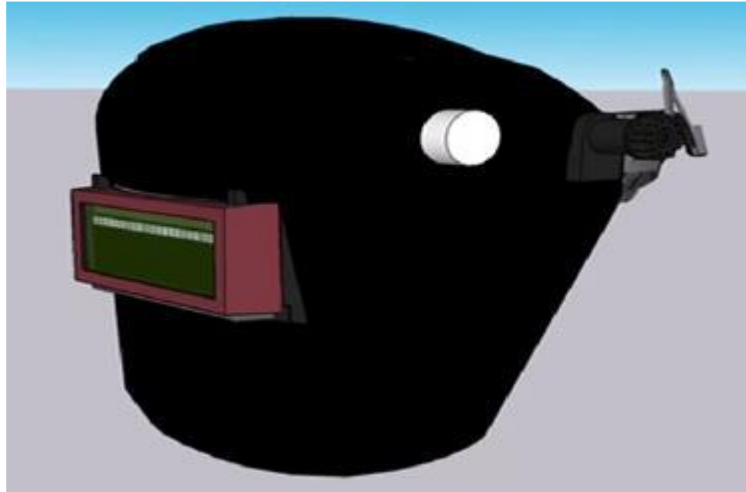
## VISION AND SAFETY WELDER HELMET

Faiz Syazwan Hishamudin<sup>1</sup> and Nor Asma Hafizah Hadzaman<sup>2</sup>

<sup>1,2</sup>Department of Built Environment Studies and Technology, College of Built Environment, Universiti Teknologi MARA Perak Branch,

32610 Seri Iskandar, Perak

*Email:* 2020834194@student.uitm.edu.my<sup>1</sup>, asmahafizah@uitm.edu.my<sup>2</sup>



Vision And Safety Welder Helmet

### **Innovation Idea:**

This innovation report presents a comprehensive study on the development and commercialisation of the vision and safety welder helmet, focusing on safety, comfort, and cutting-edge technology integration. The research addresses key questions and objectives to advance welding safety and efficiency. Investigating advanced technology for the shotcrete method, the study explores its application in designing the vision safety welder helmet. Additionally, it assembles and effectively demonstrates a simulation of the helmet while exploring marketability strategies. The primary aim is to create a vision and safety welder helmet surpassing current safety standards, providing enhanced user comfort. Research objectives guide the project, encompassing innovative helmet design, simulation assembly, performance demonstration, and market evaluation. Employing various research methodologies, including design exploration, engineering simulations, user testing, market research, and marketing strategy development, the helmet integrates advanced vision technology, auto-darkening lenses, and ergonomic headgear to enhance safety and productivity. The assembled simulation effectively showcases the helmet's performance, demonstrating seamless welding and non-welding state transitions and overall effectiveness in various welding processes and environments. Regarding marketability, potential users such as professional welders, industrial workers, metalworkers, and Do It Yourself (DIY) enthusiasts were identified. The marketing strategy emphasises the helmet's unique selling points, highlighting its safety, comfort, and compatibility with diverse welding tasks. This innovation project has significant implications for both the welding industry and sustainable development. The vision and safety welder helmet contributes to workplace safety and economic growth which align with Sustainable Development Goal 8 (SDG 8), fostering better working conditions and productivity. The integration of advanced technology aligns

with Sustainable Development Goal 9, promoting innovation and infrastructure development within the welding sector. In conclusion, this innovation report highlights a groundbreaking vision and safety welder helmet revolutionising welding safety and efficiency. By addressing key research problems and achieving defined aims and objectives, this project contributes to a safer, more sustainable, and technologically advanced welding industry. The impact of the helmet goes beyond welding, contributing to global sustainable development goals.

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim  
Rektor  
Universiti Teknologi MARA  
Cawangan Perak



Tuan,

**PERMOHONAN KELULUSAN MEMUAT NAIK PENERBITAN UiTM CAWANGAN PERAK  
MELALUI REPOSITORI INSTITUSI UiTM (IR)**

Perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa pihak kami ingin memohon kelulusan tuan untuk mengimbas (*digitize*) dan memuat naik semua jenis penerbitan di bawah UiTM Cawangan Perak melalui Repositori Institusi UiTM, PTAR.

3. Tujuan permohonan ini adalah bagi membolehkan akses yang lebih meluas oleh pengguna perpustakaan terhadap semua maklumat yang terkandung di dalam penerbitan melalui laman Web PTAR UiTM Cawangan Perak.

Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

**SITI BASRIYAH SHAIK BAHARUDIN**  
Timbalan Ketua Pustakawan

*nar*

*Setuju.*

*27.1.2023*

PROF. MADYA DR. NUR HISHAM IBRAHIM  
REKTOR  
UNIVERSITI TEKNOLOGI MARA  
CAWANGAN PERAK  
KAMPUS SERI ISKANDAR