



UNIVERSITI
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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**

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

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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



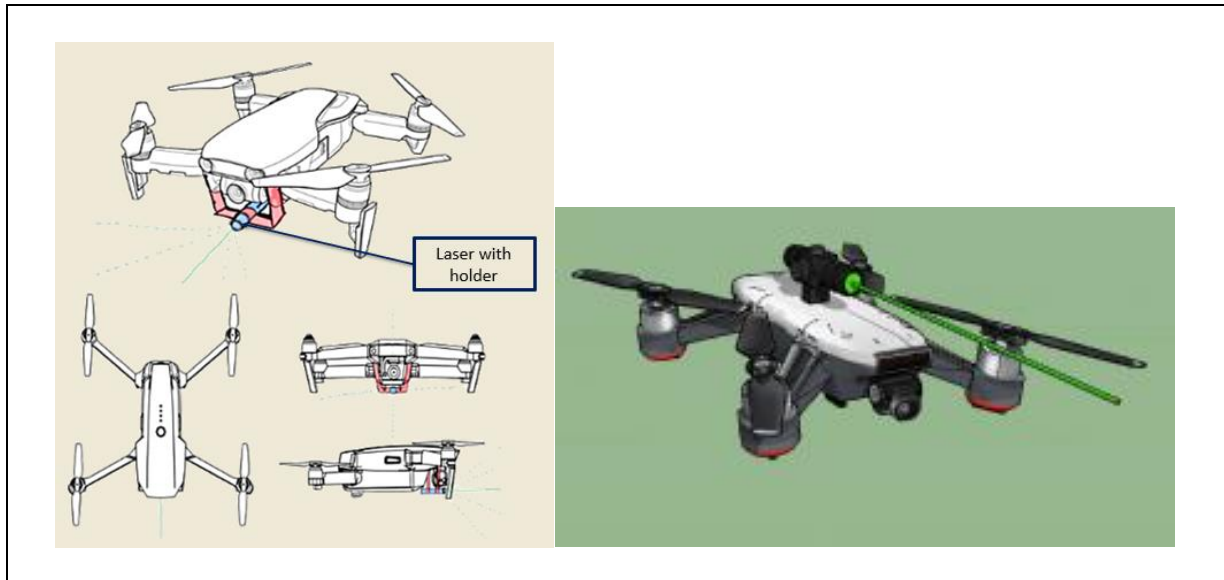
INSPEXDRONE: INSPECTION OF ARCHITECTURAL WORKS

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Inspexdrone: Inspection Of Architectural Works

Innovation Idea:

Routine inspection work is a critical event in each part of a construction project and must follow all requirements, standards, and regulations stated in contracts and laws. The purpose of the inspection work is to ensure everything is in good condition and progresses efficiently. However, the inspection work is time-consuming, costly, in need of manpower, and posing dangerous work environment for the inspection officer. Generally, there are a lot of innovative technologies that can identify defects in the construction industry, but none of them have a marking device. One of the technologies involves the use of drones, specifically Unmanned Aerial Vehicle (UAV), which are primarily employed for external building inspections. This drone can capture images of defects and check a project's progress. Therefore, this research proposes the use of InspexDrone to detect defects in architectural works with a marking device that can fly inside a building at a suitable size. InspexDrone can help the inspectors to do their job more quickly, save more time, and in need of lesser manpower. In addition, it can detect defects such as cracks, discolouration, uneven surfaces, and others by using an AI camera and marking them with a burning laser pointer. Using laser points to mark defects makes it easier for inspectors to identify and mark them, and subsequently repair them. Consequently, this research has demonstrated two simple experiments by using a prototype of the InspexDrone to check the time taken to do an inspection with and without the prototype. Additionally, an observation was made to learn whether drone can fly inside the building and narrow areas. The results from the observation indicate that the InspexDrone prototype effectively saves time and manpower, even while maneuvering inside buildings. In short, this research ensures that this innovation can be accepted by the construction industry and is marketable in Malaysia.

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

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
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Setuju.

27.1.2023

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