NAME OF INNOVATION PROJECT	I.G.S (INTEGRATED GRATING SYSTEM) *" Smart Drainage, Stronger Future "* IMPACT OF FLASH FLOODS CAUSED BY INEFFECTIVE EXISTING SCUPPER DRAIN FUNCTION
NAME OF INNOVATION TEAM	SOLVE 3 DEPARTMENT OF ENGINEERING AND MAINTENANCE PUTRAJAYA CORPORATION
TEAM PARTICIPANT	The SOLVE 3 team participated in The 51st International Convention on Quality Control Circles (ICQCC) 2026 Dhaka, organised by the Bangladesh Society for Total Quality Management (BSTQM), on 19 November 2026 at Premiera Hotel Kuala Lumpur through online streaming demonstrates the team's commitment to innovation, continuous improvement and international knowledge sharing.
TEAM PROFILE	The SOLVE 3 team was formed based on the decision of Department of Engineering and Maintenance, Putrajaya Corporation management meeting on January 07, 2023 which decided an effort must be taken to address the issue of flash flood in Precinct 11, Putrajaya. The team aims to encourage the creation of environmental innovations to enhance the quality, efficiency and effectiveness of service delivery by Putrajaya Corporation as a local authority. The team comprises 9 members from the Department Department of Engineering and Maintenance, Putrajaya Corporation who was tasked to monitor day to day environmental safety and health situations in Putrajaya. The team is led by Mr. Faridz Amli bin Shaharudin, who also serves as the team facilitator.
PROJECT SUMMARY	This innovation project develops an *Integrated Grating System* (IGS) to address flash flood issues caused by blockages from rubbish and dry leaves accumulating on *grating scupper drains* during heavy rainfall, particularly when rainfall intensity exceeds the critical > of 60 mm/h. The IGS incorporates an improved *scupper drain* design integrated with a rainfall distribution indicator system and water-level sensors. Before critical conditions are reached, the Flash Flood Task Force will receive early warning notifications, enabling immediate preventive measures to be implemented.

MAIN CAUSES OF PROBLEMS	The lowest-lying areas of Putrajaya face a risk of flash floods during heavy rainfall due to the ineffectiveness of the existing *grating scupper drain* design. During intense rainfall, the drains fail to ensure smooth water flow as dry leaves and rubbish become trapped in the *grating*, obstructing drainage. This situation can lead to flash floods, posing risks to road users and nearby residents, causing property damage, and increasing maintenance, cleaning and compensation costs.
SELECTED PROPOSED SOLUTION	To develop a new *grating scupper drain* design integrated with a rainfall distribution indicator system and water-level sensors, capable of providing early warning notifications to the Flash Flood Task Force to enable immediate preventive action.
MONITORING OF THE PROPOSED SOLUTION	The IGS is continuously monitored by the Putrajaya Command Centre (PCC) team to ensure effective system operation and uninterrupted monitoring of water levels at the site. Real-time monitoring enables the team to track current water levels and system performance, allowing potential issues and abnormal conditions to be identified promptly. The effectiveness of the solution is monitored through weekly physical site inspections and during heavy rainfall.
PROJECT IMPACT	To provide a proactive and smart solution to address flash flood issues, enhance public safety, protect property, and strengthen Putrajaya's image as a world-class sustainable administrative city.
INNOVATION ACHIEVEMENT & RECOGNITION	The *Integrated Grating System* (IGS) has been registered on 04 June 2026, for Patent protection, demonstrating the innovation's originality and securing its intellectual property rights. This registration also supports the standardisation and potential wider implementation of the innovation.

AWARDS, ACCOLADES & RECOGNITION

The SOLVE 3 team's achievement in winning the Gold Award at the 51st International Convention on Quality Control Circles (ICQCC) 2026 Dhaka, organised by the Bangladesh Society for Total Quality Management (BSTQM) and 2nd runner up at Convention ICC Malaysia 2025 is a recognition of the team's excellence, creativity and commitment to continuous improvement and innovation.



Bangladesh Society for Total Quality Management (BSTQM)

51st ICQCC 2026

Dhaka, Bangladesh

This is to certify that

SOLVE 3

from Perbadanan Putrajaya, Malaysia

has successfully presented a case study at the 51st International Convention on Quality Control Circles (ICQCC-2026), held on 18–20 November 2026 at the University of Asia Pacific (UAP), Dhaka, Bangladesh.

Their presentation was rated in the "GOLD" category.

Theme of the Convention: "QCC for Sustainable Development"

Organized by
Bangladesh Society for Total Quality Management (BSTQM)

In association with
University of Asia Pacific (UAP)

A K M Shamsul Huda
Convener, 51st ICQCC-2026, Dhaka

M M Kabir
Co-Convener, 51st ICQCC-2026, Dhaka

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NAIB JOHAN
(Sektor Awam Persekutuan)

SOLVE 3
Perbadanan Putrajaya

Tajuk Projek
Impak Banjir Kilat Akibat Ketidakberkesanan Reka Bentuk 'Scupper Drain' Sedia Ada Ketika Hujan Lebat

HAJI MOHD HUSSAINI BIN HAJI MORID
CEO / Prinsipal Konsultan

TEAM PHOTO


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