

# 建築機械人挑戰賽



**建築機械人挑戰賽為學生提供了一個獨特的機會，透過機械人技術塑造建造業的未來！**

第一階段，參賽團隊需要設計一套機械人系統，以完成建築工地相關的特定操作。

進入第二階段的入圍團隊，需要利用主辦方提供或自行預備的機械人系統，製作及編程機械人系統，於比賽日完成預設的七項建築工地相關的挑戰任務

勝出團隊將有機會在**2025年7月31日至8月2日**於建築機械人展覽上，展示機械人的設計，將團隊努力的成果及創造力展示給公眾。

**參賽資格** 全日制中四至中六學生

**團隊人數** 每組人數不多於5人

**截止報名日期：**

**2025.3.12**



**挑戰賽模式** 參賽團隊需要設計並創建一個能夠完成以下挑戰任務的機械人系統：

- ✓ 在斜坡道上行走
- ✓ 撿起垃圾並將其放入垃圾箱
- ✓ 疊起箱子
- ✓ 沿著彎曲的路線行駛
- ✓ 上落樓梯
- ✓ 拍攝建築瑕疵的照片
- ✓ 越過障礙物

## 挑戰賽將分為兩個階段

## 提交報告形式

## 評審準則

### 第一階段

參賽團隊必須提交一個機械人設計方案報告。設計會基於大會借出的機械人套件或自創的機械人系統。

### 機械人系統設計方案報告

- 不超過5張投影片 (PPT)，文件大小不超過 1GB
- 不限於文字、圖片或視頻

- 創造力
- 功能性

### 第二階段

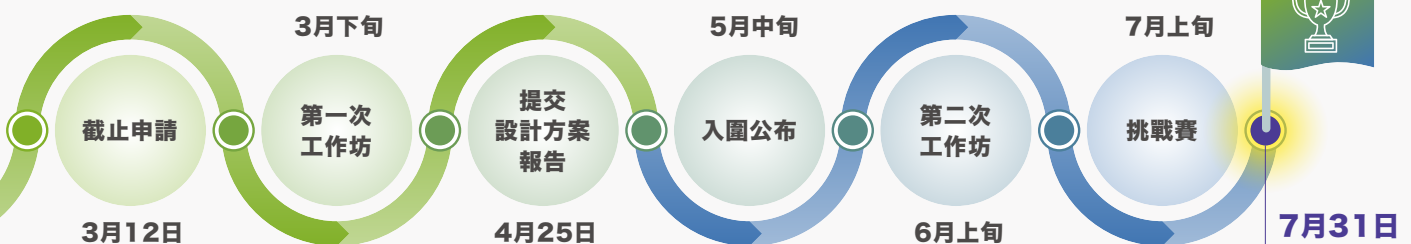
- 入圍的團隊將進入第二階段。
- 使用主辦方借出的機械人套件構建機械人系統，主辦方會提供培訓課程和指導。
- 而採用自己設計的機械人系統（不是基於大會借出的機械人系統）的團隊將不提供培訓課程或指導，但這些團隊在創新設計將獲得額外分數。

### 最終挑戰賽

- 構建和編程一隻機械人
- 團隊將在七月上旬於主辦方提供的比賽場地，使用自己構建的機械人系統進行比試。

- 外觀
- 速度
- 任務完成的質素
- 採用非大會借出的機械人以外的機械人系統

## 挑戰賽時間表





# CONSTRUCTION ROBOT CHALLENGE



## The Construction Robot Challenge offers students a unique opportunity to shape the future of our construction industry through robotics !

In the first phase, participating teams are required to design a robotic system to execute specific tasks related to construction sites.

Teams that advance to the second phase utilise either the robotic system provided by the organisers or one they independently prepared. They will need to develop and program the robotic system to successfully complete seven predefined challenges related to construction sites on the competition day.

Winners will have the exciting chance to showcase their designs at the Construction Robot Exhibition on **31 July - 2 August 2025**.

This is a fantastic opportunity to gain recognition for your hard work and creativity!



<p><b>Eligibility</b> Form 4 – Form 6 Secondary Students</p>	<p><b>Team Size</b> Each team up to 5 teammates</p>	<p><b>Deadline for Application</b> <b>2025.3.12</b></p>
<p><b>Competition Format:</b> Each team is required to design and create a robotic system capable of performing the following tasks:</p> <ul style="list-style-type: none"> <li style="width: 33%;"><input checked="" type="checkbox"/> Walk through a slope</li> <li style="width: 33%;"><input checked="" type="checkbox"/> Take photo of a construction defect</li> <li style="width: 33%;"><input checked="" type="checkbox"/> Navigate stairs (up and down)</li> <li style="width: 33%;"><input checked="" type="checkbox"/> Stack boxes</li> <li style="width: 33%;"><input checked="" type="checkbox"/> Pick up rubbish and deposit it in a rubbish box</li> <li style="width: 33%;"><input checked="" type="checkbox"/> Navigate across obstacles</li> <li style="width: 33%;"><input checked="" type="checkbox"/> Follow a curved path</li> </ul>		

### There will be Two Stages of Competition

### Submission

### Judging Criteria

STAGE 1

Each team must submit a robot design proposal. The design can be based on the robotic kits provided by the organisers or can be an entirely original robotic system.

#### Design Proposal of Robotic System

- No more than Five (5) Powerpoint Slides under 1GB file size
- Not limited to words, pictures or videos

- Creativity
- Functionality

STAGE 2

- Teams will be shortlisted to advance to Stage 2.
- Teams using the robotic kits as the basis for their robotic system will be provided with a robotic kit along with training sessions and mentorship.
- Team adopted their own robotic system (not based on the robotic kits provided by the organisers) will not receive training sessions or mentorship. However, these teams will be awarded additional marks for their innovative designs.

#### Final Competition

- Build a robot to compete
- Teams will compete with their robotic systems at an organiser-provided competition field in early July

- Appearance
- Speed
- Quality of task completion
- Adoption of robotic system other than robotic system provided by organisers

### Timelines

