



THE CLUBHOUSE PROJECT



Introduction

At the Annual General Meeting of the Royal Bangkok Sports Club held on Tuesday, 27th October 2020, it was reported that as the old Clubhouse decayed over time, the Club engaged STS Engineering Consultants Co., Ltd. to assess the structural integrity of such building by conducting a load test. The result revealed that the service live load capability in the service area was only 91 kg./sq.m. which was substantially below the acceptable standard.

For safety reasons, the General Committee resolved to temporarily suspend the usage of the Clubhouse and proposed 3 alternative solutions of the project as follows:

1. Minor Repair of Old Clubhouse

Repairing the damaged structure to restore live load capability to 250 kg./ sq.m. for the required usage.

2. Major Repair of Old Clubhouse

Repairing and strengthening the structure to achieve a live load capability of 400 kg./sq.m. as required by law.

3. Construction of New Clubhouse to Replace Old Clubhouse

In order to construct a new Clubhouse, the Club had to study and prepare the design and scope of work to assess the construction cost for further consideration.

Subsequently, the General Committee has been consulting with the Crown Property Bureau for the solution. The Fine Arts Department has informed the Club that the Clubhouse is a historical building that should be preserved. Therefore, the Club is considering the best solution to restore the Clubhouse so that it can be fully usable again.

The Old Clubhouse Physical Damage



Consideration on Fine Arts Department's Alternatives

The Clubhouse building at the RBSC is a building with historical significance for the country's development from His Majesty King Chulalongkorn, King Rama V, to early His Majesty King Phramongkutklao, King Rama VI. The Fine Arts Department views that this building should be preserved as its original design at the original location. The following alternatives can be proceeded:

1. Restoration is a suitable alternative to facilitate general recreational activities, e.g., functions, meetings, watching sports, which do not have many users at the same time.
2. Demolition and rebuilding of suitable alternatives to facilitate large recreational activities that need to facilitate many users at the same time.

The Fine Arts Department requested the Club to analyse the original architectural style and the modification of the Clubhouse to support the preservation process of both alternatives. Therefore, the Club produced and submitted such report for the Fine Arts Department's consideration, and the Fine Arts Department agreed with the Club's submitted report.

Result from Engineering Survey of Building Structural Integrity and Stability

1. Structural deficiency as reported by STS Engineering Consultant.

1.1 The building plane survey indicated that the building settlement profile is still within the limit of 1 to 300.

1.2 The concrete compressive strength test by Rebound Hammer (Schmidt Test) showed that the maximum concrete compressive strength of the floor is 233 kg./sq.cm.

1.3 The Ultrasonic Pulse Velocity Test showed that the concrete compressive strength of columns and beams is 138 kg./sq.cm. and 144 kg./sq.cm., respectively.

1.4 Floor Load Test showed that

1.4.1 Dancing area can sustain a load at 290 kg./sq.m. (equivalent to a live load of 150 kg./sq.m.)

1.4.2 Second-floor verandah can sustain a load at 310 kg./sq.m. (equivalent to a live load of 150 kg./sq.m.)

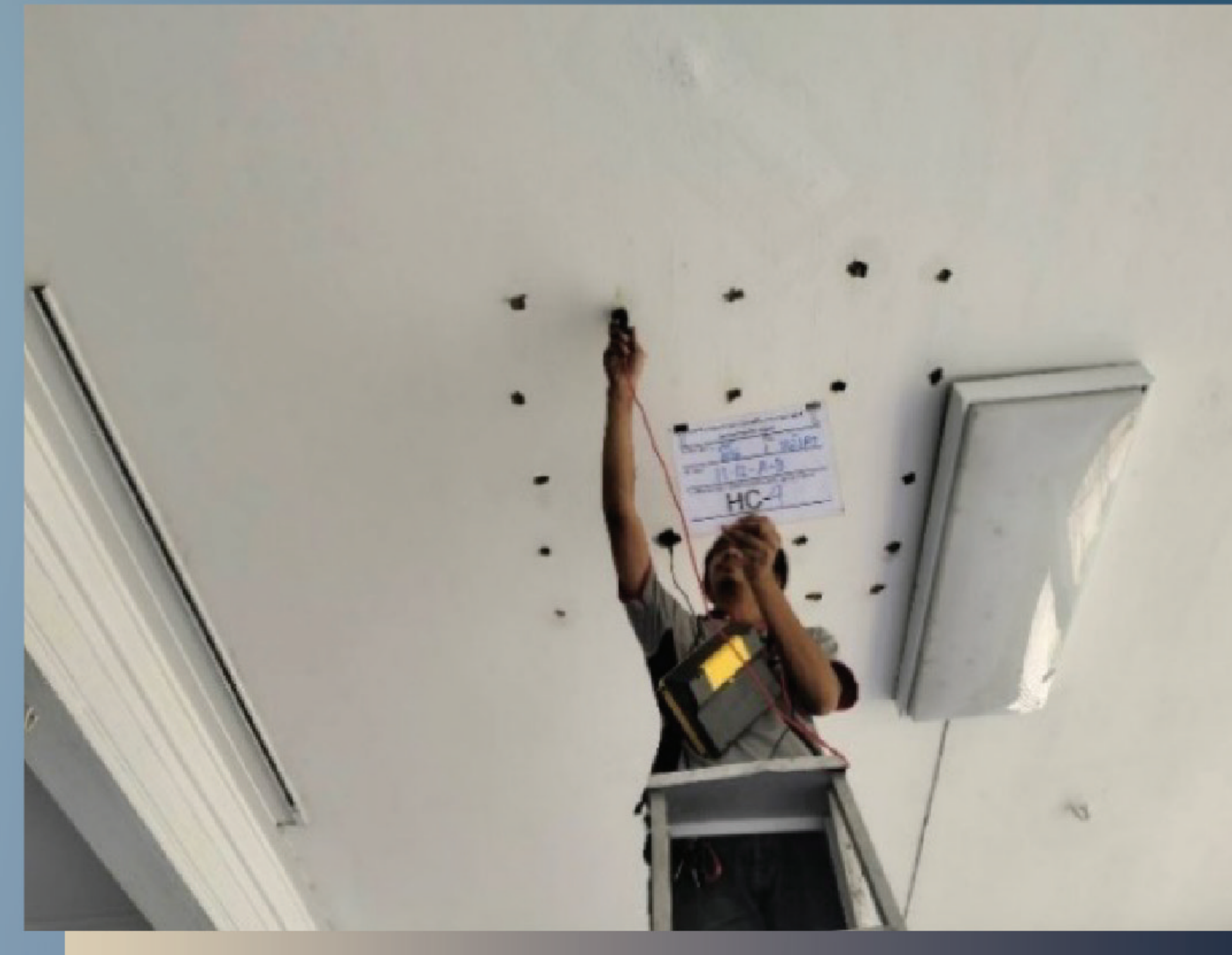
2. Reinforcement corrosion by Half-Cell Potential Method (10 locations)

- 90% probability of no reinforcement corrosion at 5 locations tested.
- Chance of having or not having reinforcement corrosion at 4 locations tested.
- 90% probability of having reinforcement corrosion at 1 location tested.

3. Structural damages reported from engineering visual inspection

The second-floor structure adjacent to the swimming pool area is severely damaged due to exposure to rain and mechanical heavy loading resulting in concrete deterioration and spalling off with reinforcement corrosion. The second-floor structure adjacent to the racing course is found to be moderately damaged with signs of concrete deterioration and reinforcement corrosion. The other areas underneath the roof shelter are found to have numerous water leakages.

Floor Load Test and Half-Cell Potential Test



Solution to Restore Clubhouse's Usage

The General Committee proposes the following 3 alternative options to restore the Clubhouse's usage for members' voting at the meeting as the basis for further operation:

Comparison Table for the 3 Options			
Option	Estimated Budget	Working Duration	Building's Useful Life
1. To Renovate the Clubhouse 250 kg./sq.m.	Baht 286 million	630 days (21 months)	Not less than 40 years
2. To Repair and Strengthen the Clubhouse (Retrofit) 400 kg./sq.m.	Baht 295 million	630 days (21 months)	Not less than 40 years
3. To Rebuild the New Clubhouse to Replace the Old Clubhouse 400 kg./sq.m.	Baht 278 million	600 days (20 months)	Not less than 80 years

Remark: The budget of all the above options excludes the budget for the main kitchen and equipment cost at Baht 50 million which requires Members' approval as well.

Option 1: To Renovate the Clubhouse

To repair the architecture and reinforce the structures, i.e. floor, beam, column, and foundation to be able to support the live load capacity at 250 kg./ sq.m. for the activities usage for the building, not a large gathering of people and limit the usage according to the design requirements for office and bank (Ministerial Regulation No. 6, B.E. 2527)

Estimated Budget	Working Duration	Building's Useful Life
Baht 286 million	630 days (21 months)	Not less than 40 years

Option 2: To Repair and Strengthen the Clubhouse (Retrofit)

To repair the architectural work and strengthen the structure, floor, beam, column, and foundation to support the live load capacity at 400 kg./sq.m. for the activities used in the Clubhouse, can assemble people as required by law to comply with the actual usage and the standard regulations according to the design requirements for assembly building, market, shopping mall building, auditorium, theater, restaurant, meeting room (Ministerial Regulation No. 6, B.E. 2527)

Estimated Budget	Working Duration	Building's Useful Life
Baht 295 million	630 days (21 months)	Not less than 40 years

Option 3: To Rebuild New Clubhouse to Replace Old Clubhouse

To demolish and rebuild a new one that maintains the original architecture and building structure to support the live load capacity at 400 kg./sq.m. for the activities used in the Clubhouse and can assemble people as required by law.

Estimated Budget	Working Duration	Building's Useful Life
Baht 278 million	600 days (20 months)	Not less than 80 years