

Regional Study on Historic Monuments

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ABSTRACT

This paper consists of the regional study of few ancient structures located in Malda, West Bengal. The main spec to fit is to give an idea about the historical back ground as well as the current condition of the following structures. This paper also includes description of the materials such as bricks, construction techniques which had been used for the construction of these heritage structures. We have tried assembling the basic properties of the material that has been used in the selected site.

Keywords: Regional study, Ancient structures, Adina, Pandua, Brick, Monuments, Structures, Cultural Heritage

INTRODUCTION

The discussed structure; Adina Mosque is known to be considered under Indo-Islamic zone of construction. Adina Mosque at Pandua, in Malda district of West Bengal, was the largest mosque in medieval times not only in Bengal but also in the whole subcontinent of India. It was according to an inscription at its back wall, built in 1373 AD by Sikandar Shah. It is curious that the Adina Mosque compares with the mosques of many famous cities like Baghdad, Cairo, Damascus, etc. not only in size, but also in plan and standardizations; in fact, it rivals the masterpieces of the world. The construction of the mosque consisted of the reuse of materials from Buddhist and Hindu Structures. It was built with rubble masonry covered with brick, coatings of stucco, stone, concrete, plaster and lime smoothing. Stone flowers were integrated into the arches of the interior and exterior all around the building.

SPECIFICATION

The foundation of the mosque is made of stones on the lower parts of the walls, and of open bricks on other parts. Its measurement is approximately calculated as 155×87 m externally with fluted column on the corners and 122×46 m internally with the arcade cloisters by the sides of the open space. The 12 m wide cloisters on the north, east and south of the open space are three aisles deep.

It consists of a prayer chamber measuring 24 m in breadth with five aisles; dividing the prayer chamber through the middle. A wide vaulted nave runs perpendicular to the Qibla wall. It measures 21×10 m and was once approximately 18 m high, but due to weathering conditions it is now fallen. The domes of the mosque covering squares formed by stone columns are variously estimated to be 306 and 370. According to Crowe the number is 260. The columns are square at the base, rounded at the middle, and slanting towards the capitals.

The domes are carried by triangular pendentives are now fallen except some on the northern cloisters of the prayer chamber. They were of an inverted tumbler shape with an elliptical curve, typical of the dome used throughout the whole sultanate period. The nave, much higher than the cloisters, was covered by a barrel vault, which because of its loftiness dominated the whole structure, and was seen from a long distance. The front of the vault is much speculated: it hints a rectangular frame like a Persian Iwana or was it open to the apex.

RELATED WORK

The bricks that we have collected from Pandua has very distinct shape and are made of some special ingredients along with the regular brick making materials. The bricks consist of bark of the Babla tree (*Acacia nelotica*), Beatele nut, rice, pulses. May be these ingredients were used to increase the efficiency and improve the performance of the bricks; which has turned out to be true as these bricks can resist a much higher load and can bear the weathering process more effectively. Other than these things the other properties of the bricks when tested gave almost same result as the traditional bricks which we now use.

METHODOLOGY

Materials required-Brick Sample from the site.

Tests Conducted:-Physical tests of the collected samples: Dimension test, Water Absorption test, Strength test and Density test.

RESULTS

1. Average Dimension of the Bricks (cms) - 391.71
2. Average Water Absorption of the Bricks - 17.26 %
3. Average Compressive Strength of the Bricks(N/mm²) - 10.18

PHOTOGRAPHIC AFFIRMATION



ADINAMOSQUE, PANDUA, MALDA

CONCLUSION

As we can see from the above results, the bricks physical properties are similar as the traditional bricks. Instead the strength the old bricks on an avg. is **10.18 N/mm²** which is more than the avg. compressive strength of the traditional brick which is **7.5 N/mm²** when tested as per IS-3495 (Part- 1):1976. So we can conclude that the materials used in the manufacturing of the old bricks are efficient and are performing as expected even till date to keep the structure intact. Hence for the repair/ rehabilitation of these structures we can follow the ancient methods to keep the essence of the structure which surely will enhance its heritage.

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