NATIONAL INSTITUTE OF TECHNOLOGY CALICUT

BUILDINGS WORKS COMMITTEE MEETING 2023:03

Minutes of the Building Works Committee meeting held in the Board Room, Admin. Block A, NITC on 15.12.2023, 04:00 PM.

Members Present:

Prof Prasad Krishna	Director, NIT Calicut
Cdr (Dr) Shamasundara M. S.	Registrar, NIT Calicut and Member Secretary
Prof Priya Chandran	Dean (P&D), NIT Calicut
Mr Pawan Kumar	Under Secretary (NIT-I), Department of Higher Education, MoE, GoI (via Online)
Smt. Shaji Sudhakaran	Deputy Chief Engineer, Electrical Circle, Kozhikode (via Online)
Prof Sajith A. S.	Professor, CED and Nominee of BoG (Invitee)
Dr George K. Varghese	Associate Professor, CED and Nominee of BoG (Invitee)
Mr Sreenesh S.	Superintending Engineer, Engineering Unit, NIT Calicut (Invitee)

The Director, NITC, welcomed all members to the BWC meeting. The Director welcomed the new BOG members, Dr. Sajith A. S., Professor, CED; Dr. George Varghese, Associate Professor, CED; and the new Superintending Engineer, Sreenesh S., to the meeting as invitees. He also informed the committee that Dr. George Varghese will be the BOG nominee for BWC and Dr. Sajith A. S. will be the BOG nominee for the Finance Committee.

2023:03:01 Confirmation of the minutes of the BWC meeting held on 27-06-2023

The minutes of the meeting of the BWC held on 27-06-2023 were circulated, and no comments were received from any of the members. The committee approved the minutes of the BWC meeting held on 27-06-2023.

2023:03:02 Consideration of the proposal for re-tarring of roads in the residential area of the campus from the main gate to the Children's Park near the swimming pool and from the central library to the OHT near B-type quarters and adjacent areas

The internal roads in the residential campus connect the various institute buildings and campus amenities. The roads from the main gate to the swimming pool and Central Library to the OHT near B-type quarters and a crossroad connecting them are some of the most important roads on campus. Both the roads are flexible bituminous roads. Since most of the buildings besides these roads are quarters, guest houses, and hostels, a majority of the students as well as faculty members use these roads regularly. It is also the only access to the guest house for VIPs visiting the campus. Due to the climatic conditions, potholes have formed on these roads. These potholes create difficulties for vehicle users as well as for pedestrians. Even after a small shower of rain, water stagnates in these holes. Moreover, these roads have not been maintained since their construction over the past 15 years. Therefore, a proposal for re-tarring these roads is made.

The estimate includes levelling undulations of existing roads (total length of 1.75km) with a bitumen levelling course of 36mm, 12mm, and 6mm stone aggregate with a power roller and providing a bituminous concrete layer with hydrostatic paver finisher after applying rapid setting track coat bitumen emulsion. Also, some token provision for Bituminous Macadam for levelling is given. A pedestrian walkway is proposed on one side of the road, laid with chamfered-edge concrete paver blocks. The sides of the roads are proposed to be provided with precast cement concrete kerbs with channels for protecting the earth from erosion on the road surface. For traffic safety, provisions for reflective road studs with lens reflectors, rubber humps, and retro-reflectorized mandatory and informatory sign boards are proposed.

An estimate amounting to Rs. 151.34 lakhs is prepared based on the MoRTH specification, with a cost index of 28.57% for Calicut.

The BWC deliberated over the estimate and recommended the approval of the estimate for Rs. 151.34 lakhs under OH-31 for the re-tarring of roads in the residential area of the campus from the main gate to the Children's Park near the swimming pool and from the central library to the OHT near B-type quarters and adjacent areas. The committee also reviewed the suggestion of BWTAC for providing duct provisions for service lines under the footpath and its expenditure amounting to Rs. 213.36 lakhs. The committee also recommended the approval of the service line ducts under OH-31 and suggested that in all future road works, provisions for service lines shall be ensured.

2023:03:03 Consideration of the proposal for providing gallery, false ceilings, and interior decor finishing in seminar hall at the Department of Architecture and Planning

The Department of Architecture and Planning is one of the highly recognised departments of NIT Calicut. The department has been in the second position in architecture in the recent NIRF ranking, maintaining the previous year's rank. The department is offering undergraduate and postgraduate degree programmes in architecture. A dedicated building was provided to the department with a total area of 8700 m2. It was facilitated with drawing halls, lecture halls, faculty rooms, etc.

The seminar hall in the department lacks essential amenities. The faculty in charge of the seminar hall of the department had forwarded a proposal to transform the hall into a state-of-the-art facility tailored to meet the specific needs of the students in the Department of Architecture and Planning. The proposed upgrade encompasses acoustic improvements, seating arrangements, multimedia integration, lighting enhancements, an HVAC system, and accessibility features.

Taking all these into account, an estimate amounting to Rs. 71.88 lakhs is prepared for the above work based on the DSR 2021 of CPWD with a cost index of 28.57% for Calicut.

The BWC deliberated over the estimate and decided to recommend the approval of the estimate for Rs. 71.88 lakh under OH-31 for providing galleries, false ceilings, and interior decor finishing in the seminar hall at the Architecture Department.

2023:03:04 Consideration of the proposal for provision of covered walkway from MBH II Main gate to MBH II entrance and interlocked walkway in front of food court

The entrance of the Mega Hostel II is very distant from its main gate. This considerable distance and the uneven terrain make it difficult for students to travel on sunny and rainy days. The Chairperson of the Council of Wardens has requested the provision of a covered pedestrian walkway from the main gate to the Mega Hostel II entrance and a pathway at the entrance of the food court.

An estimate incorporating a GI sheet roof-covered pathway with interlocking tiles from the Mega Boys hostel main gate to the hostel entrance and an interlocking tiled walkway leading to the food court area. The estimate includes an RR wall, a GI roof supported over a GI tubular structure, and interlocking over the pedestrian walkway. An estimate amounting to Rs. 41.49 lakhs is prepared based on the CPWD DSR 2021 with a cost index of 28.57% for Calicut.

The BWC deliberated over the estimate and decided to recommend the approval of the estimate for Rs. 41.46 lakhs, but under OH-35, being a new infrastructure, for the provision of a covered walkway from MBH II Main Gate to MBH II entrance and an interlocked walkway in front of the food court. During the discussions, the provision of aluminium sheets in place of GI sheets was also discussed, but the proposal was finally accepted as submitted—to provide precoated galvanised iron profile sheets with zinc

coating, epoxy primer on both sides of the sheet, and a polyester top coat, ensuring that the self-tapping screws are provided at the hip of the sheet profile—considering the cost factor and the suggestions from the CPWD team based on their experience.

2023:03:05 Consideration of a proposal for urgent renovation of the remaining blocks of the MBA hostel, including the conversion of 16 rooms to accommodate International students, executed in a package-wise mode.

Currently, the MBA hostel building needs urgent maintenance work owing to fading paint and leakages in the toilet, causing dampness and creating unhealthy living conditions in the rooms. It may also be noted that the hostel had been handed over to the district administration for about two years and was functioning as a CoVID First Line Treatment Centre (CFLTC). As a first stage, the third block of the hostel was renovated based on an estimate amounting to Rs 98.49 lakhs approved in the BWC meeting 2022:02.

Now, it is proposed to complete the renovation of the remaining two blocks and the curved front portion. The estimate consists of repair work on toilets, including dismantling all the wall and floor tiles, all the fittings, etc., and providing vitrified floor tiles over a concrete layer and a water-proofing coat; maintenance of the rooms, which includes providing aluminium-framed shutters for the wardrobes instead of existing damaged shutters; and interior and exterior painting.

The Centre for International Relations and Foreign Languages was formed in 2022 to establish a mechanism for the attainment of global standards among the NITC fraternity. The centre has requested that a few rooms in the MBA hostel first block be modified to meet the needs of international students. This arrangement would provide international students with a place to live while also offering a shared cooking facility to meet their culinary needs. The estimate consists of repair work on 8 toilets, dismantling all the wall and floor tiles, all the fittings, etc., providing vitrified floor tiles over a concrete layer, applying a waterproofing coat, and providing dry and wet areas in the toilet. The maintenance of 16 rooms includes providing marine plywood wardrobes, cots, and tables. Among the 16 rooms, one is renovated as a modular kitchen and one as a guest room. The estimate also includes interior and exterior painting.

These four estimates for providing adequate facilities are prepared based on the DSR 2021 of CPWD, with a cost index of 28.57% at Calicut.

Initially, two estimates were submitted for approval for emergency execution, but as directed by the concerned authorities in the earlier BoG meetings, all works of similar nature are to be accorded single approval, and the same has been initiated. The details of the estimates for four various works are as follows:

1. Maintenance work and toilet renovation work for the MBA Hostel first block:
   : Rs. 78.87 lakhs

2. Maintenance work and toilet renovation work for MBA Hostel second block:
   : Rs. 93.34 lakhs

3. Renovation of fourth floor of MBA Hostel first block for accommodating international students, including kitchen facilities : **Rs. 62.80 lakhs**

4. Maintenance work and toilet renovation work to MBA Hostel front courtyard (curved portion) : **Rs. 70.50 lakhs**

It was proposed to execute these works separately and parallelly, as directed by the concerned authorities in the earlier BoG meetings, to ensure speedy completion.

The committee deliberated over the estimate and decided to recommend the approval of the work in principle. Based on the detailed estimate and approvals following due procedures, the work is to be executed under OH-31. Package-wise execution can be followed. As suggested, a parallel execution of all the work is to be ensured for speedy execution.

2023:03:06 Reporting of a proposal for renovation of guest house rooms (first floor), including attached bathrooms, the conference room, and open areas.

The Guest House building of the institute had been constructed to provide accommodation for Institute guests visiting the campus from the Government and external experts invited for various interviews and other events. The building is provided with twenty bath-attached bedrooms with a waiting lounge, conference hall, common dining block, kitchen, etc. The entire building has two floors with a total plinth area of 1544.54 m^2. At present, the interior of the guest rooms has only minimal facilities. Adding to that, dampness has been observed over the walls adjacent to the toilet, which gives it an unsightly appearance. The entire toilet tiling, fittings, and water closet are very old. The institute regularly conducts recruitments for various vacant posts and hosts VIPs and institute guests most of the time. Therefore, the guest house facilities are to be upgraded to befitting standards on an urgent basis.

As a first step, the ground floor except the common toilet was renovated based on an estimate amounting to Rs 42.60 lakhs approved in the BWC meeting 2022:01.

Now, it is proposed to complete the renovation of the first floor of the guest house, and an estimate for providing adequate facilities amounting to Rs 57.01 lakhs is prepared based on the DSR 2021 of CPWD with a cost index of 28.57% at Calicut.

Kindly note that, upon completion of the renovation of the first-floor rooms, it is proposed to take up the renovation of the conference hall and the open areas. This includes changing AC roof sheets to GI roof sheets, replacing damaged floor tiles, rectifying ceiling damages, interior and exterior painting, and other modification works. As an initial step, a preliminary estimate for the same was prepared, and it amounts to approximately Rs 50 lakhs.

The BWC deliberated over the estimate and noted that approval of the first floor renovation works of the guest house is requested after completing the ground floor renovation works, which is as per the earlier BOG decision. The committee also noted that the increase in estimate amount from that of the ground floor renovation is due to

the inclusion of furniture, the renovation of the office and common toilet, and the change of material for the ceiling work. In line with the approval and noting of BOG, the committee decided to recommend the approval of the estimate for Rs. 57.01 lakh under OH-31. It is also recommended to convert the existing office room on the ground floor (Room No. 1) to be renovated as a guest room.

The committee suggested taking up the balance work, which includes the renovation of the conference hall and the open areas, in parallel.

2023:03:07 Reporting of present issues with the 475 KLD STP near Mega Boys Hostel II and proposal for revamping

As a part of the infrastructure facilities enhancement, Mega Hostel II has been constructed by CPWD and is functional. As an integral part of the hostel, for sewage disposal, a 475 KLD STP in line with the capacity of the hostel is also provided. The construction was also part of the CPWD scope, and they had completed it. Even though there was a DLP period and a maintenance period by the contractor deployed due to COVID-19, post-COVID effect, as soon as the DLP period was completed, the agency left without attending the O&M period. In contractual terms, the contractual actions of the party were initiated by CPWD, and NITC was forced to take over the O&M considering the requirement of NITC.

The STP had started functioning in full capacity after the COVID, and as of date, it is showing overload and not functioning properly. Even though certain remedial measures, such as the construction of an additional septic tank, the construction of an overhead water tank to store the treated water, and laying pipelines in the residential campus for the usage of treated water for gardening purposes, have been adopted, they are not giving desirable and long-lasting results.

The major issues noted are the foul odour during peak hours (morning and evening) and the overflow of the tank storing the treated water from the STP on certain occasions. Furthermore, the wastewater from the hostel kitchen is overflowing from the inspection chambers and reaches the nearby drain, which then empties into a natural pond. This makes the water in the pond turbid, attracting complaints from locals, and has even attracted media attention, which may defame NITC.

To avoid the treated water outflowing outside, the arrangements as committed, including the renovation of the pond, the provision of an overhead tank to collect water, and the utilisation of the same for watering and gardening inside the campus, etc., are in progress.

During untimely heavy downpours, such issues are worsening due to the infiltration of groundwater into the STP tanks. As a part of the remedial measures, as an initial activity, a site visit in detail and an analysis of the issue were made by a start-up, namely M/s Blackfly Technologies Pvt Ltd (under the guidance of an expert approved by M/s WAPCOS), which is a registered organisation at the TBI of NITC.

A preliminary finding of the agency is that there are certain flaws and lapses on the design side that are resulting in the overloading of STP and, in turn, failing the system as a whole.

The flaws in design are:

- There are no separate lines for black and grey waters, and these lines are provided using concrete Hume pipes, where there is a chance of infiltration of groundwater or runoff water.

- The gravity flow adopted at the end of the collection system (at the entry portion of the STP) is not sufficient considering the volume and slope provided.

- The groundwater table is high, especially in rainy times, which affects the system.

- Separate oil and grease traps/chambers and a separate system for the kitchen are required, considering the present mode of operation in the kitchen.

Along with the above, as per the study, leakage of the manholes and collection pits is observed, and the importance of waterproofing is also emphasised. Based on these observations, a fix has been suggested that includes rerouting all the grey and black water to make it easier to separate them and replace the pipelines. The manholes and pits will also need to be waterproofed, and the kitchen will need an extra collection tank. There will also need to be pumping arrangements at the last stretch areas (at the entrance to the STP), and an estimate has also been given. The total project cost in these aspects is to the tune of Rs. 7.00 crore, as per the estimate provided by M/s Blackfly Technologies.

Meanwhile, considering the increased local complaints, media attention, and notice regarding the same by KHRC, as desired by the Director, the matter is in the process of being taken up with a highly qualified and expert team from IIT Madras, which is qualified to critically assess the existing STP conditions and recommend modifications as required.

Furthermore, NITC had intimated the issues and findings to CPWD and instructed an intervention, but the response was not favourable yet.

As a general practise, it has been observed that, in many STPs, a revamp is needed after 5 years. In place of the NITC-supplied manpower for operating the STP, an O&M service for a long period by a specialised agency, including a revamping of the unit, is required to resolve the issue in the prevailing context.

As the course of action is highly needed, it is requested to give advice in this regard, and along with the recommendation and comments, through BWTAC, the issue along with the expected expenditures may please be reported to BWC.

The BWC deliberated over the issue, and based on the gravity of the situation, the issue shall be settled expeditiously. It is noted that a decision based on a report from a single agency may be accepted after a review, preferably by experts. A committee comprising two experts from IIT Madras and an internal faculty member from NITC may be formed in accordance with the recommendation of BWTAC to conduct a critical analysis of the current issue. A further course of action will be based on the report from the expert committee.

2023:03:08 Reporting of the proposal for providing motorable pathway connecting Mega Hostel I to '100 numbers residential quarters'

The Mega Hostel II accommodates many students from the Department of Management Studies, the Department of Humanities, Arts, and Social Science (HAS), and the Department of Education.

Students find it very difficult to travel all the way through the public main road to commute between these two premises. Also, currently, there is no proper pathway connecting Mega Hostel I and the 100 residential quarters area. Hence, this work is proposed to be done urgently to connect these two premises.

An estimate is prepared for providing 80mm-thick cement concrete paver blocks for a motorable pathway and an RR retaining wall with pointing. The pathway also consists of precast curbs on both sides and a tubular GI handrail. Some other minor works are also proposed. The estimate amounting to Rs 33.38 lakhs is prepared based on CPWD DSR 2021 with a cost index of 28.57% for Calicut.

The BWC deliberated over the estimate and decided to recommend the approval of the estimate for Rs. 33.38 Lakhs under OH-35 for proposal for providing motorable pathway connecting Mega Hostel I to '100 numbers residential quarters'

2023:03:09 Reporting of the progress of ongoing works entrusted to CPWD by CPWD officials

CPWD officials informed them of the details and status of projects, for which CPWD is the execution agency.

As per CPWD, the works on the overhead water tank and the underground sump—both for the water supply works connected with the exclusive water line from KWA—are substantially completed, and handing over formalities have been initiated. Bills are under preparation with the agencies.

The construction of the compound wall is getting delayed due to various issues, both attributable to the contractor and other issues that are beyond the control of the agency. Even 90% of the works—in terms of the length of the compound wall—are pending, and CPWD is making follow-ups to complete them by December 2023. CPWD also informed that actions have already been taken to penalise the agency due to their poor performance, in line with contract conditions.

CPWD intimated that the foundation work is currently underway for the new academic block building; the completion of the foundation raft is anticipated by the middle of January 2024.

It was also informed that for the construction of the New Ladies Hostel (HEFA project), the new drawings are under preparation based on the conceptual plans approved, incorporating the latest building rules and norms. In parallel, the geotechnical exploration

and the activities like the estimates, the finalisation of the structural consultant, etc. for the project are in the finishing stage.

The committee expressed concern over the delay in work execution and advised following certain milestones for the project so that monitoring and billing can be associated with such milestones and control and accounting can also be ensured. CPWD informed that the same will be explored and followed.

CPWD was instructed to provide a stage-wise schedule of work for each project, with costs incurred at each stage, to expedite payment.

2023:03:10 Any other items with permission of the chair

a. Consideration of the proposal for installation of additional Wi-Fi Routers in Central Library

The NITC library urgently requires high-speed Wi-Fi connectivity for the entire building. Presently, only two Wi-Fi devices are serving a three-story building. In consultation with CNC and a detailed analysis of the requirements and area of the library building, seating, and rack layout in the stack rooms and reference, further Wi-Fi access points are proposed.

CNC submitted a detailed analysis and the required Wi-Fi device details and other networking items, along with an approximate cost of Rs. 31,96,000/-.

The BWC informed that the proposal does not come under the purview of the BWC.

The meeting came to an end at 05:30 PM, with a vote of thanks to the chair.

08/1/24

Registrar and Member Secretary