TENDER DOCUMENT

e-TENDER No.: ERO/MMD/731/1125

Tender for the “Supply, Installation, Testing, Commissioning & Handing Over of Modular Operation Theatre for Medical College and Hospital at Sundergarh Odisha”.

VOLUME – II

Additional Purchase Condition (APC), List of Approved Make, Technical Specification & Drawing

ENGINEERING PROJECTS (INDIA) LIMITED
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Additional Purchase Condition (APC)

1.0 General

The Additional Conditions shall be read in conjunction with General Purchase Conditions. Where the provisions of these Additional Conditions are at variance with the provisions of the General Purchase Conditions of Contract, the provisions of these Additional Conditions shall take precedence.

2.0 Commencement and Completion of Project

The Contractual Completion Period shall be Three (3) months from the Seventh (07th) day of issue of Letter of Intent of Acceptance of Tender

3.0 Suppliers Confirmation

The Supplier(s) / tenderer(s) whose tender(s)/bid(s) are accepted hereinafter are called the supplier(s).

4.0 Language

All correspondence, drawings and notations relating to this Contract must be in English.

5.0 References

In case of conflict, the more stringent requirement will apply unless ruled otherwise by EPI/NTPC

6.0 Order of Precedence

In case of ambiguity in Bill of Quantities, Additional Conditions of Contract, Specifications, General Purchase Conditions, the following order of precedence will prevail.

1) Bill of Quantities
2) Additional Purchase Conditions / Corrigendum
3) Specifications
4) General Purchase Conditions

7.0 Conflict in Documents

If there are varying or conflicting provisions made in anyone document forming part of the contract, the Engineer-in-charge of EPI shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the Supplier.

8.0 Price: The following shall be also read with clause no 03 of GPC:

The rates/amount quoted in the Schedule/Bill of Quantities shall be inclusive of all taxes, duties, cess, levies, fees, royalty, etc, except Goods and Service Tax (GST).

The percentage of rate for Freight Charges and Insurance for all BOQ items shall be quoted separately in the respective quoting sheet.
9.0 Security Deposit Cum Performance Guarantee

Clause 9.0 & 18 of GPC stands deleted and shall be read as below.

“Within 10 (ten) days from the date of issue of letter of Intent or within such extended time as may be granted by EPI in writing, the supplier shall submit to EPI a Security Deposit cum Performance Bank Guarantee in the form appended, from any Nationalized bank / Scheduled Bank equivalent to five percent only (5%) of the Contract Value for the due and proper execution of the contract. This bank guarantee shall remain valid up to ninety (90) days after the end of defects liability period.

In case the supplier fails to submit the Security Deposit cum Performance Guarantee of the requisite amount within the stipulated period or extended period, letter of intent shall stand withdrawn and EMD of Supplier shall be forfeited.

10.0 Registration

The SUPPLIER confirms that it holds EPF Code number, GSTN registration at the state of Odisha, PAN (Permanent Account Number of Income Tax) etc. and shall be responsible for depositing EPF subscription and contribution for labour and staff employed by it on the works and GST, other taxes, duties and dues etc. as per statutory requirements and documentary evidence of same shall be provided to EPI. The SUPPLIER shall also be responsible for labour welfare and for arranging labour and other licenses/permits/clearance etc. for the project at their own. The SUPPLIER shall comply with all the requirements as per labour laws/acts. All the records in this regard shall be maintained by the SUPPLIER as per statutory requirements and rules and shall be produced by the SUPPLIER on demand if required. In case, the suppliers do not have PF Registration No. &GSTN (in the state of Odisha) registration, the same shall be obtained by successful suppliers within one month from the date of LOI or before release of First RA Bill.

11.0 Taxes and Duties

The award of the Contract shall be on ‘Work Contract’ as defined in section 2 (119) of the CGST Act, 2017. The rates/amount quoted in the Bill of Quantities shall be inclusive of all taxes, duties, cess, levies, fees, royalty, etc. except Goods and Service Tax (GST). The Goods and Services Tax (GST) applicable on all items of Works described in the Bill of Quantities, shall be quoted separately in attachment entitled “Annexure- I - Taxes & Duties” in Vol. III.

The GST quoted by the bidder shall be as applicable in India as on seven (7) days prior to the deadline for submission of Techno-Commercial Bids. Due Input Tax credits under GST as per the relevant Govt. Policy, wherever applicable, shall be taken into account by the Bidder while quoting his price. Income Tax and other Deductions of Taxes as applicable shall be deducted from Bills / due payment of the Supplier.

EPI shall bear and pay/reimburse to the bidder Goods and Services Tax (GST) applicable on the value of Works Contract described in the Bill of Quantities. However, the taxes, duties & levies as may be applicable on the materials used for Works Contract shall be to the bidder’s account and no separate claim in this regard will be entertained by EPI. Further, in case of any variation in the rates of the GST after the date seven (7) days prior to deadline set for submission of the Techno-
Commercial bids, the same shall be paid/ reimbursed to/ recovered from the bidder subject to submission of documentary evidence.

If a new tax, duty or levy is imposed under statute or law in India after the date seven (7) days prior to date of Techno-Commercial bid opening and the successful bidder becomes liable there under to pay and actually pays the said new tax, duty or levy for bonafide use on the Works contracted, the same shall be reimbursed to the successful bidder against documentary evidence of proof of payment.

The Supplier shall, within a period of 30 days of the imposition of any such new tax, duty or levy give a written notice thereof to the Engineer-in-Charge of EPI that the same is given pursuant to this condition, together with all necessary information relating thereto.

The payment/reimbursement of statutory variations in the rates of tax and/or of new tax, duty or levy imposed under statute or law in India as per above, would be restricted only to direct transactions between the EPI and the successful bidder.

a. It shall be incumbent upon the successful bidder to obtain a registration certificate under the GST Law, and other law(s) relating to levy of tax, duty, cess etc. and necessary evidence & GSTIN number to this effect shall be furnished by the successful bidder to the EPI.

b. The successful bidder must submit as an compliances of GST Act, the invoices in GST compliant format failing which the GST amount shall be recovered / adjusted by EPI without any prior notice from the next invoices or available dues with EPI.

c. The successful bidder should update /upload the GST/Taxes data periodically so as to avail ITC credit by EPI failing which it shall be recovered / adjusted by EPI without any prior notice from the next invoices or available dues with EPI.

d. The rates/amount quoted in the Schedule of Quantities shall be inclusive of all taxes, duties, cess, levies, fees, royalty, etc, except Goods and Service Tax (GST).

e. Bidder while quoting the rates in the tender must also consider the ITC Credit applicable for the works, if any.

12.0 Insurance
Clause 5 of GPC stands deleted and shall be read as below.

Supplier is required to take Contractor’s All Risk Policy or Erection All Risk Policy (as the case may be) including Marine Insurance from an Approved Insurance Company in the joint name with EPI and NTPC and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of contract against all loss or damage from whatever cause arising for which he is responsible under the terms of the contract and in such manner that EPI and the Supplier are covered during the period of execution of works and/or also covered during the period of defect liability for the loss or damage as under:-

a) The work and the temporary works to the full value of such works.

b) The materials and other things brought to the Site for their full value.
Supplier shall submit to EPI copies of all such insurance policies and receipts for payment of current premium and also whenever required by EPI the Supplier shall produce the original policy or the policies of insurance and the receipts for payment of the current premiums.

**INSURANCE UNDER WORKMEN'S COMPENSATION ACT**

Supplier is required to take insurance cover as per requirement of the Workmen’s Compensation Act, 1923 amended from time to time from an Approved Insurance Company and pay premium charges thereof. Supplier shall submit to EPI copies of all such insurance policies and receipts for payment of current premium and also whenever required by EPI the Supplier shall produce the original policy or the policies of Insurance and the receipt of payment of the current premiums.

**THIRD PARTY CONTRACTOR INSURANCE**

Supplier is required to take third party CONTRACTOR insurance cover for an amount of five percent (5%) of Contract Value from an Approved Insurance Company for insurance against any damage, injury or loss which may occur to any person or property including that of EPI, and NTPC arising out of the execution of the works or temporary works. Supplier shall submit to EPI copies of all such insurance policies and receipts for payment of current premium and also whenever required by EPI the Supplier shall produce the original policy or the policies of insurance and the receipt of payment of the current premiums.

In case of failure of the Supplier to obtain insurance for works, insurance under Workman Compensation Act and Third Party CONTRACTOR insurance as described above within one month from the date of commencement of work, running account payments of the Supplier shall be withheld till such time the aforesaid insurance covers are obtained by the Supplier.

13.0 **Compliance to statutory rules**

The SUPPLIER shall ensure compliance with all Central, State and Local Laws, Rules, Regulations etc. as applicable or may be applicable during the course of execution, maintenance etc. of the works and shall indemnify against any claim or damages whatsoever on such accounts. The SUPPLIER shall also keep EPI/NTPC indemnified at all times against infringement of any Patent or Intellectual Property rights.

14.0 **Measurement of Work Done**

Engineer-in-charge shall, except as otherwise provided, ascertain and determine measurement and the value in accordance with the contract work done.

All measurement of all items having financial value shall be entered in Measurement Book so that a complete record is obtained of all works performed under the contract.

All measurements shall be taken jointly by EPI and by the Supplier or his authorized representative and such measurements shall be signed and dated by EPI and the Supplier in token of their acceptance. If the Supplier objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

If the Supplier or his authorized representative does not remain present at the time of measurements after the Supplier has been given a notice three (3) days in advance or fails to countersign or to record objection within a week from the date of the
measurement then such measurements recorded in his absence by EPI/NTPC shall be deemed be accepted by the Supplier.
The Supplier shall, without extra charge, provide all assistance with every appliance labour and other things necessary for measurements and recording.
EPI/NTPC may cause to check the measurement recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurement.

It is also a term of this contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Supplier from liabilities from any over measurement or defects noticed till completion of the defects liability period.

15.0 **Documents to be submitted along Bill/Invoice**
Following documents shall be enclosed along with each bill for submission otherwise the same shall not be accepted by EPI for checking and certification of payment.

a) Monthly progress reports in the format as issued by EPI/NTPC— the Sample report is available with EPI/NTPC for Supplier’s reference.

b) Safety measurement certificate.

c) Manufacturer’s Test Certificates.

d) All the information/documents contained in relevant checklists.

Formats shall be provided to the Supplier by EPI.

16.0 **Payment Terms**
Clause 4.0 of GPC stands deleted and shall be read as below.

Unless otherwise agreed upon between the parties payment on receipt of materials at site / store and on submission of separate bills/invoice for each stage/part payment as below by a cheque or demand draft or RTGS in accordance with the following procedure.

16.1 Seventy-five percent (75%) of the BOQ rate of the item/ equipment/ material shall be paid on receipt of the same at site, and on production of Inspection Report issued by the Inspector / Engineer In Charge of EPI (in case inspection is done at manufacturing unit), Manufacturer’s Test Certificate, consignment note, and Interim Joint Inspection report after proper Storage at site and submission of Indemnity Bond in the prescribed pro-forma.

16.2 Fifteen percent (20%) of the BOQ rate of the item/ equipment/ material shall be released after assembling, installation, testing & commissioning and final inspection.

16.3 Balance five percent (5%) of the BOQ rate of the item/ equipment/ material shall be released within 30 days after expiry of the DEFECTS LIABILITY PERIOD as per Clause No. 36 of APC

17.0 **Price Escalation**

No Price Escalation is admissible.

18.0 **Additional / Extra Items**
The following procedures shall be meticulously adopted in case of any additional / extra items.
a) EPI shall issue a Contemplated Change Notice (CCN) in the format enclosed as Annexure-VII.

b) Based upon the requirement stipulated in CCN Supplier shall submit analysis to reflect financial implications if any, within seven (7) days from issue of CCN. The price analysis shall be based upon rates given in bill of items for the similar works or can be derived on the basis of basic rate of material and labour appended with annexure.

c) After review and approval of analysis by Engineer In-charge of EPI / NTPC, Change Order shall be issued by EPI in the Change Order format enclosed as per the Annexure-VIII to enable Supplier to execute item.

d) For substitute items Supplier shall produce price analysis for the approval of EPI / NTPC and adjustment in the contract amount accordingly. No overheads and profits shall be applicable against substituted items.

19.0 Variation

The variation limit shall be ± 10% of the Total Contract Value for Contract Items and of similar nature and specification at the same accepted rate. The limit of variation for individual BOQ item is ± 25%.

20.0 Alterations, Additions and Omissions

EPI / NTPC can make any variation of the form, quality or quantity of the works or any part thereof that may, in their opinion be necessary and for that purpose, or if for any other reason it shall in his opinion be desirable, they shall have power to order in writing to the Supplier to do and the Supplier shall do any of the following:

a) Increase or decrease in the quantity of any work included in the contract in which case the value of contract may be increased or decreased.

b) Omit any such work.

c) Change the dimension of any part of the works and

d) Execute additional work of any kind necessary for the completion of the works and no such variation shall in any way vitiate or invalidate the contract, but the value, if any of all such variations shall be taken into account to ascertain the amount of the Contract Price.

e) The Supplier shall not affect any of the aforementioned changes without the written order of EPI / NTPC.

21.0 Deviation, Extra items pricing

In the case of extra items, the rate analysis submitted by the Supplier as per above Clause 18.0 of APC, the Engineer-In-Charge of EPI shall within one (1) month of the receipt of the claims supported by analysis, shall determine the rates on the basis of the market rates/other prevailing codes as approved NTPC in consideration to the analysis of the rates submitted by the Supplier, and the Supplier shall be paid in accordance with the rates so determined and approved.

22.0 Deviation, Substituted items, Pricing

In the case of substituted items, the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the aforesaid para.
a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted) the rate payable to the Supplier for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted) the rate payable to the Supplier for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

23.0 Deviation, Deviated Quantities Pricing

a) In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in Clause -19.0, the Supplier may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis, for the work in excess of the above mentioned limits; provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities the Engineer-In-Charge of EPI shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Supplier, determine the rates on the basis of the market rates/other prevailing codes as approved by NTPC and the Supplier shall be paid in accordance with the rates so determined.

b) The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Clause-19.0 and the Engineer-in-Charge of EPI shall after giving notice to the Supplier within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of receipt of the notice, revise the rates for the work in question within one month of expiry of the said period of fifteen days having regard to the market rates or current schedule of rate or other prevailing codes as approved by NTPC.

c) The Supplier shall send to the Engineer-In-Charge once every three months an up to date account giving complete details of all claims for additional payments to which the Supplier may consider himself entitled and of all additional work ordered by the Engineer-in-Charge of EPI which he has executed during the preceding quarter failing which the Supplier shall be deemed to have waived his right.

24.0 Compensation for delay

Clause 13.0 of GPC stands deleted and shall be read as below.

If the Supplier fails to maintain the required progress as committed/ or to complete the work and clear the site on or before the date of completion or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to EPI on account of such breach, pay compensation as agreed the amount calculated at the rates stipulated below as EPI may decide (whose decision in writing shall be final and binding) on the amount of tendered value of the work for every completed day/month (as applicable) for which progress remains below that specified in schedule or that the work remains incomplete.
Compensation for delay of work is at the rate of One percent (1%) per week of delay to be computed on per day basis.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed ten percent (10%) of the contract amount.

25.0 Work subjected to audit

The work executed by the SUPPLIER shall be subject to audit and quality control checks from Quality Control Division & Technical audit of EPI/NTPC, inspecting Agency of the Client and Chief Technical Examiner of Central Vigilance Commission, Govt. of India. In the eventuality of any defect/sub standard works as brought out in the report or noticed otherwise at any time during execution, maintenance period etc., the same shall be made good by the SUPPLIER without any extra cost. In case the SUPPLIER fails to rectify the defect/sub- standard work within the time period stipulated by EPI/NTPC, necessary action as deemed fit shall be taken by EPI/NTPC and decision of EPI/NTPC shall be final and binding on the Supplier.

26.0 Action in case work not done as per Specifications

All works under or in course of execution or executed in pursuance of the contract shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his authorized representative in charge of the work and all the superior officers, officer of the Quality Control Department of EPI / NTPC and of the Cabinet (Technical) Vigilance, the Supplier shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Supplier either himself be present to receive orders and instructions or have a responsible agent duly authorized in writing, present for that purpose. Orders given to the Supplier's agent shall be considered to have the same force as they had been given to the Supplier himself.

If it shall appear to the Engineer-In-charge of EPI or his higher authority or his authorized subordinates in charge of the work or to the Cabinet (Technical) Vigilance or his subordinate officers, that any work has been executed with unsound, imperfect or unskilful workmanship, or with materials or article provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract the Supplier shall, on demand in writing which shall be made within the period specified by the Engineer-in-charge of EPI/NTPC all such materials or articles under complained of notwithstanding whether or not the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost.

In the event of the Supplier, failing do so within a period specified by the Engineer-in-Charge of EPI in his demand aforesaid, then the Supplier shall be liable to pay compensation at the same rate as under Clause -24.0 of APC of the contract (for non-completion of the work in time) for this default. In such case the Engineer-in-charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the competent authority may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure and incidental items rectified, or removed and re-executed at the risk and cost or Supplier. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the Supplier.
27.0 Supplier Liable for Damages, defects during maintenance period

If the Supplier or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road curb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wired, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within defect liability period after a certificate final or otherwise of its completion shall have been given by the Engineer-in-charge of EPI as aforesaid arising out of defect or improper materials or workmanship the Supplier shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-charge of EPI cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the Supplier, or from his security deposit or the proceeds of sale thereof or of a sufficient option thereof.

28.0 Schedule of Completion

Successful suppliers shall submit supply, assembly and placement schedule for all BOQ items within fifteen (15) days. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of supply of items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-In-Charge and the Supplier within the scheduled completion period (i.e. 3 Months).

29.0 Time Essence of Contract & Extension for Delay

29.1 The time allowed for execution of the Works as specified in “Memorandum” to the “Form of Tender” or the extended time in accordance with these conditions shall be the essence of the contract. If the Supplier commits default in commencing the execution of the work as aforesaid, EPI/NTPC shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the security deposit money absolutely.

29.2 If the work(s) be delayed by:
   
a) force-majeure or
b) serious loss or damage by fire, or
c) civil commotion of workmen, strike or lockout, affecting any or the trades employed on the work, or
d) delay on the part of other Suppliers or tradesmen engaged by Engineer-In-Charge in executing work not forming part of the Contract,
or
e) any other cause which, in the absolute discretion of EPI, is beyond the Supplier’s control, then, upon the happening of any such event causing delay, the Supplier shall immediately give notice thereof in writing to the Engineer-In-Charge but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-In-Charge to proceed with the works.

Request for extension of time, to be eligible for consideration, shall be made by the Supplier in writing within fourteen (14) days of the happening of the event causing delay on the prescribed form and at least fifteen (15) days before the completion date. The Supplier may also, if practicable, indicate in such a request the period for which extension is desired. In any such case EPI may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Supplier.
by the Engineer- In-Charge in writing, within three (3) months of the date of receipt of such request. Non application by the Supplier for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-In-Charge and the extension of time so given by the Engineer-In-Charge shall be binding on the Supplier.

30.0 Codes

In the absence of definite provision on particular issue in the specification / codes, reference may be made to relevant latest Codes recommended to be used and good engineering practices and / or as per instruction / suggestion of EPI / NTPC.

31.0 Supplier’s Responsibilities during Inspections

a) Furnish labour and facilities to:
   i) Provide access to work to be inspected and tested.
   ii) Facilitate inspections and tests.
   iii) Make good work disturbed by inspection and test.
   iv) Provide all test equipment required for carry out field tests.

32.0 Inspection and Testing

Clause 6.0 of GPC stands deleted and shall be read as below.

The stores/material covered as per this Work Order / Agreement shall be subject to preliminary inspection and testing at any time prior to shipment and /or dispatch and final inspection within a reasonable time after arrival at the place of delivery. The Inspector / Engineer In Charge shall have the right to carry out the inspection and testing which include raw materials at manufacturing unit and the material at the time of actual dispatch before and after completion of packing.

The supplier shall inform the EPI at least twenty one (21) days in advance, place, date and time of offering the stores/material for required inspection, provide free access to Inspectors during normal working hours at manufacturing unit and places at their disposal, internal test reports, material/component test certificates, approved drawings and all useful means of performing, checking, marking, testing, inspection and final stamping to be made available at his own expenses. Stores/material offered without internal testing and quality documents shall be treated as not ready for inspection.

If, after receiving inspection call from the Supplier, the inspector on reaching the works finds that the equipment /materials offered for inspection is not ready or fails to meet quality parameters, the inspection call will be considered to be a cancelled and material offered under the inspection call are treated rejected / disqualified.

The material shall be offered in lots and the inspector has liberty to choose randomly Inspection Samples from each lot for inspection. In the event of rejection of Inspection Samples due to defective workmanship /material /design, the entire lot is treated as rejected and should be offered for re-inspection at the earliest. EPI shall have the right to deduct the cost of re-inspection from the supplier's invoices/bills.

Final inspection shall be carried out after unpacking, assembly (if any) and placing of the items/material.

Even if inspections and tests are fully carried out, supplier shall not be absolved to any degree from their responsibilities to ensure that stores/material supplied, comply
strictly with requirements, of the purchase order at the time of delivery, inspection on arrival at site, after its erection or start-up and guarantee period.

In any case, the stores/material must be strictly in accordance with the Work Order / Agreement failing which EPI shall have the right to reject goods/material and hold the supplier liable for non-performance of contract.

EPI reserves the right to test any item or number of items to any government testing laboratory in India and the total cost for forwarding and testing of these materials will be borne by the bidder.

33.0 Testing Laboratory Services

All the inspection & testing charges to be carried at testing laboratory designated EPI/NTPC shall be borne by the supplier.

34.0 Manufacturer's Test Certificate

Clause 7.0 of GPC stands deleted and shall be read as below.

Manufacturer's test certificate shall be submitted by the Supplier along with invoice / challan. Failure to comply may cause delay in release of payment.

35.0 Sub-standard Material

Any material/item/fitting/fixtures rejected by EPI / NTPC shall be removed from the site within forty eight (48) hours of issue of instructions to this effect by EPI. Failing this, the EPI shall have the rights to get these removed and the Supplier shall have no claim whatsoever in this regard.

36.0 Defects Liability Period

The Supplier shall be responsible for the rectification of defects in the works for a period of 12 (Twelve) months from the date of taking over of the works in totality by the Owner/Client. Any defects discovered and brought to the notice of the Supplier forthwith shall be attended to and rectified by him at his own cost and expense. In case the Supplier fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by EPI at the cost and expense of the Supplier.

37.0 Dispatch Instructions

Clause 10.0 of GPC stands deleted.

38.0 After sales service and training

Clause 11. of GPC stands deleted and shall be read as below.

The supplier shall provide necessary "After Sales Service" (for items supplied) free of cost to the satisfaction of the end user.

39.0 Approval of Engineer-in-charge

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects by the Engineer-In-Charge who shall be entitled
to specify time and the manner they are to be commenced, and from time to time carried on.

40.0 Approval from Client

The Supplier shall be responsible for obtaining all approvals from EPI/Client with regard to quality of materials & workmanship and measurements etc.

41.0 Suppliers Use of Sites

The Supplier is restricted to use the site without permission and shall obtain prior permission for entering the work premises or for use as per contractual works.

42.0 Storage of Material

The bidder shall make his own arrangement for storage of all materials at site including its safe custody, watch and ward, & damages etc. at his own cost till completion of the work and handing over of the same to EPI/NTPC.

43.0 Association with EPI

If desired by EPI, the Supplier shall be available / associate with EPI in meetings with Client for its portion of work at their own cost. The Supplier shall furnish all information and clarifications as and when required by EPI/NTPC.

44.0 Co-ordination with other agencies

This is a Percentage Rate base contract. Therefore, it shall be the Supplier's responsibility to ensure complete co-ordination between works of various agencies such as Civil, Electrical, Utilities, etc. It is deemed that the Supplier have considered this aspect carefully while quoting tender.

45.0 Site Meetings

Site meetings shall be held at regular intervals and in addition to other meeting required by EPI/NTPC. There shall be at least one site meeting per fortnight in the presence of EPI/NTPC to discuss and co-ordinate the work. The Supplier shall provide responsible member of his organization who is authorized to commit and bind the Supplier to any agreement reached during said meeting.

46.0 Non-interference with other works

The Supplier shall plan and execute the works in his scope of work in such a manner that the other works, connected with the works of the Supplier, but not included in the Supplier's scope of work, do not get affected/delayed.

47.0 Local Manpower

Successful suppliers shall ensure maximum utilization of local manpower as far as possible.

48.0 Preservation of tree/vegetation

Existing trees and other forms of vegetation to be preserved by avoiding disturbance / damage due to activities.
49.0 Supplier to indemnify Govt. against Patent Rights

The Supplier shall fully indemnify and deem indemnified EPI/NTPC against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under the action brought against EPI/NTPC in respect of any such matter as aforesaid the Supplier shall be immediately notified thereof and the Supplier shall be at liberty, at his own expenses, to settle any dispute or to conduct any litigation that may arise there from, provided that the Supplier shall not be liable to indemnify EPI/NTPC if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge of EPI/NTPC in this behalf.

50.0 Recovery

Any amount found recoverable from the Supplier shall be recovered without prejudice to any other mode of recovery.

51.0 Release of Security Deposit

The entire Security Deposit (SD) amount shall be released to the Supplier after Ninety (90) days of expiry of defect liability period if all the defects are rectified by Supplier, raised during defect liability period.

52.0 Water Supply

The Supplier shall make their own arrangements for water required for construction as well as for drinking and other purposes for their staffs and labour and the personnel of EPI / NTPC.

53.0 Electricity

a) Supplier shall obtain temporary power connection from Local Authorities at his cost.

b) Supplier shall make his own arrangements for further distribution as per their requirement and cost of cables switches, fuses, meters etc. shall be borne by Supplier. It is to be noted that power from local authority may not be continuous and there may be possibilities of disruption of power. Hence Supplier shall install sufficient number of generators of adequate capacity duly approved by EPI/NTPC bearing all operating and installation.

c) EPI/NTPC reserves the right to supply power at mutually agreed rates as and when sufficient availability of same is attained.

54.0 Gate keeper & Watchman

The Supplier shall provide, maintain at his own expense gate keepers and watchmen to ensure at all times effective protection of the works, materials and workmen, until completion of the project, at his own risk and cost.

55.0 Safety Measures

It shall be the sole responsibility of the Supplier to ensure all safety measures giving
proper, prior notices etc. and obtaining prior permission from concerned local authorities as per bye-laws or directions issued by them at his own cost. No claim of the Supplier in this regard shall be entertained.

56.0 Recovery against Labour Safety

In respect of all labour directly or indirectly employed in the work for the performance of the Supplier’s part of this contract, the Supplier shall at his own expense arrange for the safety provisions as per CPWD Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. Failing which, necessary action as deemed fit shall be taken by EPI/NTPC.

57.0 Sanitation/safety facilities for workers

The Supplier shall adhere to guidelines laid down in the National Building Code of India 2005 for constructional practices and safety of workers Health and Sanitation facilities for workers/working residing on site. This shall include, but not limited to, safety equipment (safety helmets, jackets, boots, gloves etc), safety nets/harnesses, appropriate warning/safety signs, fire extinguishers, adequate light for working during evenings/night, regular maintenance and repairs of machinery / equipments and adequate sanitation/potable drinking water facilities. The Acts and rules as stipulated by Govt. of India, enforced by the Chief Labour Commissioner (Central) (refer web site clc.gov.in) and revised time to time shall be applicable in case of any violations with respect safety.

58.0 Supplier’s risks

All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the contract other than the excepted risks are the responsibility of the Supplier.

59.0 Warranty

Clause 17. of GPC stands deleted and shall be read as below.

The supplier shall warrant that every material /plant, machinery and equipment to be supplied be new and free from all defects and faults in design, material, workmanship and manufacture and shall be of the highest quality.

The items should be consistent with the established, recognized or stipulated standards for material of the type usually used for the purpose and in full conformity with the specifications and drawings or samples, if any. Equipment offered must be capable, during operation, of withstanding extreme dusty, wet, humid and sultry conditions. The warranty shall continue not withstanding inspection, payment, acceptance of tendered equipment and shall expire except in respect of complaints notified to supplier prior to such date within 12 months from the date of Taking Over.

60.0 House Keeping

General:

a) Conduct cleaning and disposal operations to comply with local authority and antipollution Laws.

b) Store volatile waste in covered metal containers and remove from premises at the end of each working day.

c) Provide adequate ventilation during use of volatile or noxious substances. Use
of building ventilation systems is not permitted for this purpose.

Materials:
For surfaces Use only cleaning materials recommended by manufacturer and as recommended by cleaning material manufacturer.

Cleaning:
  a) Provide on-site containers for collection of waste materials and debris.
  b) Dispose waste materials and debris off site.
  c) Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

Final Cleaning:
  a) Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials, from finished surfaces including glass and other polished surfaces.
  b) Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

61.0 Brand Name
The specific reference in the Specifications and documents to any material by trade name, make or catalogue number shall be construed as establishing standard or quality and performance and not as limited competition.

62.0 Submission of Manuals / Catalogues
Maintenance manuals, product catalogues, all warranties and guarantees against each section of work shall be submitted hardbound in triplicate on completion as per direction of EPI.

63.0 Shop Drawings
Clause 21. of GPC stands deleted and shall be read as below.

The Supplier shall submit detail drawings with dimension for all items etc as required and desired by EPI/NTPC. Nothing extra shall be paid on this account.

64.0 CONCILIATION AND ARBITRATION
Clause 23. of GPC stands deleted and shall be read as below.

Before resorting to arbitration as per the clause given below, the parties if they so agree may explore the possibility of conciliation as per the provisions of Part III of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015. When such conciliation has failed, the parties shall adopt the following procedure for arbitration:

64.1 Except where otherwise provided for in the contract, any disputes and differences relating to the meaning of the Specifications, Design, Drawing and Instructions herein before mentioned and as to the quality of workmanship or materials used in the work or as to any other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the Contract, Designs, Drawings, Specifications, Estimates, Instructions, or these conditions or otherwise concerning
the works of the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the Sole Arbitrator appointed by the Chairman & Managing Director (CMD) of Engineering Projects (India) Limited (EPI) or any other person discharging the functions of CMD of EPI. The person approached for appointment as Arbitrator shall disclose in writing circumstances, in terms of Sub-Section (1) of Section (12) of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015 as follows:

(i) such as the existence either direct or indirect, of any past or present relationship with or interest in any of the parties or in relation to the subject matter in dispute, whether financial, business, professional or other kind. Which is likely to give rise to justifiable doubts as to his independence or impartiality; and

(ii) which are likely to affect his ability to devote sufficient time to the arbitration and in particular his ability to complete the entire arbitration within a period of twelve months. The Arbitrator shall be appointed within 30 days of the receipt of letter of invocation of arbitration duly satisfying the requirements of this clause.

64.2 If the arbitrator so appointed resigns or is unable or unwilling to act due to any reason whatsoever, or dies, the Chairman & Managing Director aforesaid or in his absence the person discharging the duties of the CMD of EPI may appoint a new arbitrator in accordance with these terms and conditions of the contract, to act in his place and the new arbitrator so appointed may proceed from the stage at which it was left by his predecessor.

64.3 It is a term of the contract that the party invoking the arbitration shall specify the dispute/ differences or questions to be referred to the Arbitrator under this clause together with the amounts claimed in respect of each dispute.

64.4 The Arbitrator may proceed with the arbitration ex-parte, if either party, in spite of a notice from the arbitrator, fails to take part in the proceedings.

64.5 The work under the contract shall continue as directed by the Engineer-In Charge, during the arbitration proceedings.

64.6 Unless otherwise agreed, the venue of arbitration proceedings shall be at the venue given in the ‘Memorandum' to the ‘Form of Tender’.

64.7 The award of the Arbitrator shall be final, conclusive and binding on both the parties.

64.8 Subject to the aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015 or any statutory modifications or re-enactment thereof and the Rules made there under and for the time being in force shall apply to the arbitration proceedings and Arbitrator shall publish his Award accordingly.

Note: Not withstanding anything contained herein above, this clause shall not be applicable where the dispute is between EPI and another Public Sector Enterprise or Govt. Department for which a separate Arbitration Clause is provided vide Clause No. A given below:-
A.  ARBITRATION BETWEEN PUBLIC SECTOR ENTERPRISES INTERSE/ GOVERNMENT DEPARTMENTS.

1. In the event of any dispute of difference relating to the interpretation and application of the provisions of the contracts, such dispute or differences shall be referred by either party for Arbitration to the sole Arbitrator in the Department of DLI/C&E/WM-675/306 ADDITIONAL PURCHASE CONDITIONS (APC) Page 8 of 8 Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 and The Arbitration and Conciliation Act, 2015 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law-Secretary or the Special Secretary/Additional Secretary, when so authorized by the Law-Secretary, whose decision shall bind the Parties finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator”.

2. Subject to any amendment that may be carried out by the Government of India from time to time the procedure to be followed in arbitration shall be as is contained in F. No. 4(1)/2013-DPE(PMA)/FTS-1835 Dated: 11/04/2017 of Department of Public Enterprises, Ministry of Heavy Industries & Public Enterprises or any modification issued in this regard.

65. Court Jurisdiction

Clause 24.0 of GPC stands deleted and shall be read as below:

Disputes of any nature that may arise in connection with the execution of the contract shall be subjected to the jurisdiction of courts situated in Kolkata only.
CONTEMPLATED CHANGE NOTICE

To
Submit Quotation to:
Project No.:
Supplier
CCN No:
Date:

Sub:

It is proposed to make the following change in the work. You are requested to quote a firm price for any revision to the contract amount arising from the change. No work should be undertaken on this change until a change order / written authorization has been signed and issued.

Quotation to be submitted within seven (7) days of the date of this notice.

The work shall conform to the contract documents where applicable unless otherwise stated.

Initiator Reasons for Change
CHANGE ORDER

Project No.: Change Order No.: 

Location:

Description: Construction of Medical College & Hospital at Sundergarh, Odisha

Project Management & Execution Consultant :-

Architect :-

Suppliers Name and Address

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Description of Change – Refer CNN No.

Recommended by: M/s EPIL

Approved By:

Signature of Contractor
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TECHNICAL SPECIFICATION

1. Modular Operation Theatre (SS)

Wall & Ceiling Cladding using SS Puff Panels with Imported Bacteriostatic Polymer Material

The Pre-fabricated modular construction is designed and constructed for exact size, easy field installation and future disassembly, enlargement or relocation. The Pre-fabricated operating room will be a free standing insulated SS wall panels.

The room wall will have two independent surfaces with a minimum opening in between. The external walls of the room will be constructed with solid bricks with cement plastering. The inner surface walls will be constructed with Puff Panels made of SS Panels.

These panels are produced in a double band laminator in which two continuously moving belts of 120 Gsm galvanized steel sheets of (1mm inside wall and 0.8mm backsider wall) are firmly bonded together by the sprayed-in insulating foam, which hardens during this process. The core has consists of rigid polyurethane foam, which has been injected under high pressure, with a minimum density of 40kg/m³. The wall & ceiling surface is finished with Polycarbonate based blend (PVC free) EU certified EN 13823 &EN ISO 11925-2 bacteriostatic surface for medical usage Equivalent.

The inner surface walls will be fixed to the brick wall with essential supports. There will be minimum possible cavity/gap in between the solid and steel walls. The total distance between the inside and outside surfaces of the operating room will be variable to suit the architects’ layout, but will be sufficient for the flush mounting of equipments.

The wall panel design and construction will allow for the installation and support of all equipment and the provision of openings required for the installations, without affecting rigidity and strength.

Access boxes will be fitted to the rear of all wall-mounted equipment to enable maintenance to be carried out from outside the operating room.

1. Laminar Air Flow System with Mini Pleat Filters:

The ceiling filtration system should be designed to ensure unidirectional distribution of sterile air of the surgical theatre to ensure the cleanliness of all the area covered by the airflow.

The Laminar flow system should comprise of thick extruded aluminum profiles frame and sealed gasket. The filters installed in the plenum should be suitable for application for laminar flow and clean rooms.

These filters should meet following specification.

Separators: continuous thermo plastic chord
Sealant: Polyurethane
Gasket: One-piece polyurethane
MPPS average efficiency: > 99.95%
3 Micron DOP efficiency > 99.99%
Final Pressure drop: 600 pa(max) Maximum Operating Temp : 60 degree Celsius
Maximum RH: 40-50
Filtration Ceiling System holding structure, Filter frames and top plenum should be made of Aluminum/Stainless Steel. The ceiling system should be equipped with “H 14” class HEPA filters position in the ceiling to achieve 0.25m/sec flow at the diffuser. The supplier should provide test certificate for HEPA filter and laminar airflow systems from the original manufactures.

The filtration ceiling system should have diffuser/flow equalizer to achieve uniform & constant air distribution over the whole surface. The positive pressure should be maintained inside the OT to prevent contamination due to air from outside the OT.

**The laminar Air Flow System should have CE compliance under Class 1 Medical devices directive/Equivalent.**

2. **Dimmable Peripheral LED lights**

To provide peripheral lighting and clean room luminaries with intensity min 500 Lux, it should be 8 in numbers for each OT.

The Peripheral lighting should be done according to **IP65** (International protection rating65)/Equivalent

3. **Automatic Hermetically Sealed Sliding Door**

Automatic hermetically sealed sliding door with single leaf for use in controlled bacteria environments; the door can be installed in conventional masonry walls or prefabricated self-loading systems.

The controller should be capable of being operated by elbow switches/foot switches as well as touch less sensor. The track should be of stainless steel/Aluminum and the running surface for the top rollers should be suitably angled to reduce resistance to movement. The door leaf should be hung by means of hard plastic rollers of high quality with double bearing at the top. Rollers should be provided under the stainless steel track to enable smooth and noiseless movement. Opening and closing of the door should be microprocessor controlled electromechanical movement.

The door material should be of antibacterial SMS should match the interior of OT. One should be able to open and close the door effortlessly incase of failure of automatic mechanism. Door opening handle should be strong and sturdy. Material should be of SS (gloss finish). Should be provided with high quality cylindrical lock. Door leaf should have high quality synthetic rubber gasket with long life to ensure hermetic sealing (to maintain air pressure differential).

The finished floor on either side of the door should be perfectly level (maximum permissible difference +1mm).

The overall thickness of the finished door should be 45 to 55mm. The inner part of the door should be filled with CFC free polyurethane foam thickness of 48mm or nearby. (Sealed airtight to prevent further ingress of any microbial organism).

The door and controls should comply with IEE regulation. All motors used should be DC brushless motors with essential isolation from mains Door should be with vision window 300 mm x 300 mm with double glazed panels. Noise level should not exceed 60 db. The starting time after receiving the signal should be adjustable between 0.5 to 20 seconds.

**The Automatic hermetically sealed sliding door should have CE compliance under Class 1 Medical devices directive /Equivalent.**
4. **Surgeon Control Panel**

The OT Surgeon's Control Panel should be designed to cope with changing technology and equipment in operating environments. Control panel should be user friendly and ease of operating and maintaining purpose.

The panel should be Touch screen type; configured to incorporate all the services that Operation room staff required. The fascia should be made with superior quality UV resistance membrane with Sterilisable feature.

The panel should contain services as below:-

a. Time Day Clock  
b. Time Elapse Day Clock  
c. General Lighting Controls  
d. Medical Gas Alarm Panel  
e. Hand Free Telephone set with memory card  
f. Temperature & Humidity Indicator & Controller.  
g. HEPA filter status

Time Day Clock should be digital type and clocks having high brightness characters.  

Time Elapsed Day Clock should be digital type and clocks having high brightness characters.

**The Surgeon Control Panel System should have CE compliance under Class 1 Medical devices directive / Equivalent**

5. **Two Plate LED X-Ray - Dimmable**

The Two (2) plate viewing, LED type high frequency fluorescent lamps

**X-Ray Viewing** Screen should be designed to provide flicker free luminance for clear film viewing. Each plate should be able to illuminate films upto 14"x17" size. Dimming to be controlled using dimming ballast and PCB mounted inside the box. The mounting of the Screen should be installed flushed with Operation theatre wall to avoid dust accumulation and microbial growth and ease of cleaning.

The diffuser should diffuse the light evenly and to provide adequate luminance for film viewing. Body should be of extruded aluminum powder coated black with bacteria and disinfectant resistant finish.

Proper spring loaded film clip with rollers should be provided to holes of the films firmly and to remove the film without scratches.

The X-Ray Film viewer should comply with relevant Electrical Safety Codes for High and Low voltage system.

**The X-ray Viewer should have CE compliance under Class 1 Medical devices directive / Equivalent**

6. **Pressure Relief Damper**

Pressure Relief Dampers should be provided in each room to prevent cross contamination of air from clean and dirty areas. Suitably sized air pressure relief damper should be
strategically placed, enabling differential room pressure to be maintained and ensure that when doors are opened between clean and dirty area. Counter-weight balancing system should be provided in the PRD to maintain positive pressure inside the operation room. Air pressure stabilizers should have unique capability of controlling differential pressure to close tolerance. The PRD should remain closed at pressure below the set pressure and should open fully at pressure only fractionally above the threshold pressure.

First class electrolyzed steel plate should be used for body and with high grade SS-304 Stainless Steel for blades.

**The Pressure Relief Damper should have CE compliance under Class 1 Medical devices directive /Equivalent**

7. **Integrated Storage Unit**

Storage Unit shall be made out of AISI-304 Stainless steel sheet. The storage unit shall be divided into 2 or more parts and each part shall have individual glass doors with high quality locking system. The doors should be installed on the storage units with the help of imported fittings allowing an opening allowance of 160degree.

Each part should be provided with steel racks, which should be completely detachable type.

The storage unit should be fitted with 5mm thick toughened glass door and mounted flush with the theatre wall.

The dimensions of each storage unit should not be less than height 2100mm x width 800mm x depth 350mm.

The storage units should be designed in a way that they are flush with the OT wall panels and the units should be air tight, not allowing any leakage between units and the wall panels.

**The Storage Unit should have CE compliance under Class 1 Medical devices directive /Equivalent**

8. **Writing List Board**

*Writing Board as operating list Board of size-1000x700x60 deep should be made of white board having magnetic properties and should be flushed to the wall of the operating Room*

**The Operating List Board should have CE compliance under Class 1 Medical devices directive/Equivalent**

9. **Conductive Flooring with Self leveling**

Providing and Laying of 2.00 mm thick approved permanently conductive ESD tiles of size 615 mm x 615mm as per EN 427. The tiles should be manufactured from PVC chips coated with a conductive substance. The tiles should offer guarantee a long life conductivity independently from humidity and temperature. Tiles should be highly compressed with a compact surface. These conductive tiles should be completely free from volatile antistatic chemicals, and ensures a permanent and stable conductive performance of the floor over its entire life time. The Electrical Resistance offered by the tiles is as per IEC 61340-4-1, EN 1081(100v) ANSI/ESD 7.1. The laying of Copper tape and conductive adhesive has to be laid before the tiles are laid. The flooring should be resistant against non-oxidizing organic and mineral acids in any concentration (except Sulphuric acid). The floor finish should terminate at the room perimeter passing over a concealed cove former and continuing up the wall for 100mm.

Signature of Contractor  Page 26 of 31  EPIL
Modular Operation Theatre
For Electro Conductive resistance - $5 \times 10^4 \, \Omega \leq R \leq 10^6 \Omega$. The laying of the tiles has to be done using Conductive adhesive and copper tape.

Slip Resistance as per DIN 51130: R9  
Indentation Residual as per EN433: 0.035mm  
Light fastness as per EN ISO 105 B02: $\geq 6$

The tiles are to be laid on the smooth sub floor done with a suitable self leveling conductive tiles should also have following test done to meet out the standards.

Airborne particle emission test and clean room suitability (ISO 14644-1).  
Adhesion of microorganisms, chemical resistance (ISO 2812-1).  
Out gassing analysis and classification(ISO14644-8).

Self Leveling Compound

Providing and laying of cementations based Self Leveling Compound in average 2-3 mm thickness. The leveling compound must be mixed with water as per the manufacturer’s recommendations using mixing paddle attached to drilling machine or equivalent to make the lump free mortar. The existing subfloor where the self leveling compound is to be laid, should be treated with one or more coats of primer (Diluted or Undiluted) as per the manufacturer’s recommendations to create a seal so that the subfloor does not absorb water from the leveling compound thus reducing the formation of air bubbles.

The Conductive Flooring should have CE compliance under Class 1 Medical devices directive /Equivalent.

10. **View Window**

The view window of specified size should be provided consisting of:

Double insulated fixed glazing with not less than 6 mm thick toughened glass. Window frame should be powder-coated aluminum of approved shade flush mounted with wall paneling.

11. **Pendants**

**Single Arm Moveable Pendant – Indigenous**

The Ceiling Pendant Systems designed to provide convenient positioning of medical equipment, medical gas terminal units, electrical and specialty services. The Ceiling Pendants should comply with NFPA 99/HTM 01-028. The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position.

The Pendant should be available as follows:
- 1000 mm moveable arms each with 340 deg. Horizontal movements.
- The weight carrying capacity of the arm should be more than 150 kg
- Each arm should be capable of 330 to 340 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.
- The arms may be fitted with electromagnetic brakes to prevent inadvertent movement.
- The Pendant Service Heads should have modular head. The head should be capable of accepting a range of shelves, drawers and infusion poles or other accessories. The Pendant Head should support the range of Physiological Monitor Mounting Solutions.
- The Pendant Service Head should be supplied with medical gas terminal units and 5/15 Amps. Sockets.
- Provision for Gas Outlets
  - Oxygen Outlets – 2
  - Nitrous Oxide Outlet - 1
  - Air (4 bar) Outlets – 1
  - Air (7 bar) Outlets - 1
  - Vacuum Outlets – 2
  - Electrical Sockets - 6 nos.
  - Shelf with two rails one on each side – 1 no.
  - Monitor input & Output – 1 no.

**Double Arm Moveable Pendant – Indigenous**

The Ceiling Pendant Systems designed to provide convenient positioning of medical equipment, medical gas terminal units, electrical and specialty services. The Ceiling Pendants should comply with international standards / guidelines. The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position.

The Pendant should be available as follows:
- 1000 mm + 800mm moveable arms each with 340 deg. Horizontal movement
- The weight carrying capacity of the arm should be more than 200 kg
- Each arm should be capable of 330 to 340 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.
- The pendant should be CE/ UL Listed Mark
- The arms may be fitted with electromagnetic brakes to prevent inadvertent movement.
- The Pendant Service Heads should be modular with 400mm head. The heads should be capable of accepting a range of shelves, drawers and infusion poles or other accessories. The Pendant Heads should support the range of Physiological Monitor Mounting Solutions.
- The Pendant Service Heads should be supplied with medical gas terminal units and 5/15 Amps. Sockets.
- Provision for Gas outlets
- Oxygen Outlets – 2
- Nitrous Oxide Outlet - 2
- Air (4 bar) Outlets – 2
- Vacuum Outlets – 2
  - Electrical Sockets - 6 nos.
  - Shelf with two rails one on each side – 1 no.
  - Monitor input & Output – 1 no.

12. **Surgical Scrub Station**

(A) Compact Surgical 2 Bay Scrub sink shall be designed for use in Operation theatre complex providing surgeons with a convenient sink for pre-OT scrub up.

The Scrub Sink should be made of 1.5mm thick AISI-304 Stainless Steel. The scrub sink should be provided with a front access panel, which should be easily removed for access to the water controlled valve, waste connections, stoppers and strainers. Hands free operation should include infra-red sensors with built-in range of adjustment.

Thermostatic mixing, valve control should be located behind the access panel and maintain constant water temperature.
User defined time 1,3,5,10 min. are available. This timing should be adjustable to meet individual application requirements, provided with infrared sensors, thermostatic control taps with fail-safe temperature controls.

All units should have reduced anti splash front. It should have manual foot and operation mode. The station should also have inbuilt soap dispensers.

**The Scrub Station should have CE compliance under Class 1 Medical devices directive/Equivalent.**

13. **Electrical Wiring and Conducting**

Wiring with low leakage Current wires of FRLS wires as per requirements including providing and fixing of conduit and boxes etc to complete the work in all respect. Wiring for 250Volts single phase and neutral 6/16 amps switched socket outlet with 4sqmm PVC insulated copper Conductor 1100 volts grade stranded flexible wires in concealed or surface mounted 25mm dia PVC conduit including providing and fixing of 6/16 Amps 5 pin switched sockets of approved make and design in thick GI box with grid plates and earthing the third pin of each socket outlet with 4 sq.mm PVC insulated copper conductor stranded flexible wire.

14. **Aluminum Ducting with Nitril Insulation**

Ducting shall be made of Aluminum for supply & for return with curves and bends where indicated for easy flow of air and ensured to be air tight by applying Silicon sealant after fabrication. Hanger shall be provided to ducts & shall be suspended by means of GI coated rods& these shall not be more than 2.5mtrs apart. Thermal Insulation with 12mm XPE with Aluminum foil for supply & return air ducts. Joints should be lapped with Nitrile rubber tape for better insulation.

15. **HATCH BOX**

A hatch should be provided in each operation theater to remove waste materials from the operation theater to dirty linen area/corridor just adjacent to Operation Theater.

Each hatch box should be equipped with two doors and the door should be operated electrically.

The hatch should be designed in such a way that only one door should be opened at one time.

The UV light should be so installed that it is kept on while both the doors are closed. This UV light has to be automatically turned off in case of opening of either of the doors.

Indicators should be provided on both sides of the OT so that door open / close status can be monitored from both sides.

Hatch Box material should be SS304.

**The Hatch Box should have CE compliance under Class 1 Medical devices directive.**

17. **OT LIGHT WITH IN LIGHT CAMERA**

- Imported
Dual Dome LED Surgical Lighting System with one dedicated Spring Arm Suspension for Progressive Scan High Definition Flat Panel with an Integrated In-light Camera system. It should at least have the following features.

**OT LIGHT:**
Operating Room Surgical lighting system should provide an ideal combination of brightness, maneuverability, and shadow resolution without sacrificing color accuracy through a consistent LED technology with a unique faceted reflector design technology. Such lighting should have the following technical specifications:

- **FDA Clearance:** Yes
- **UL Approvals:** Yes
- **Number of Light heads:** Up to two per suspension
- **Number of LEDs:** minimum 80-90 LEDs
- **LED Lifetime**\(^*\) L70: \(50,000\) hours
- **Color Temperature:** \(4300\) K- \(4700\) K (+-10%) (white LED)
- **Color Rendering Index:** \(\geq 90\)
- **CRI R9:** \(85+/-10\%\)
- **Field Size Diameter:** 80-20cm-25-27 cm
- **Depth of Field:** 80-30 cm-120-60 cm
- **Illumination Level:** minimum 160,000 Lux major dome & 120000 lux
- **Ratio of Irradiation to Illuminance:** 3.3 mW/m² x lux
- **Controls:** Wall control, voice capable, touch panel capable
- **Rotation:** 330 degrees
- **Vertical Adjustment Range:** + 20in (55.9cm), -25in (63.6cm)
- **Reflector Material:** Reflector surface is aluminum
- **Task Lights:** Yes (Perilite)
- **Sterilizable Handle:** Yes
- **Light head Diameter:** 65-70 cm
- **Mounting Type:** Ceiling
- **Supply Voltage:** 230V AC 50Hz
- **Dimming Range:** 30 – 80%
- **Power (without camera):** \(< 110\) Watts
- **Bulb Type:** LED
- **Life of Light Source:** \(>40,000\) hrs
- **Operating/ Storage Humidity:** 10 – 95%

Such surgical light system should be compliant with relevant European/US standards.