TENDER DOCUMENT

e-TENDER No.: ERO/MMD/731/1103

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), Approved Make, Technical Specification & Drawing

ENGINEERING PROJECTS (INDIA) LIMITED
(A GOVT. OF INDIA ENTERPRISE)
9th Floor, 50, Chowringhee Road,
Kolkata – 700071
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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 Five (5) months from the tenth (10th) 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 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 Workmen 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 (incase 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 subject 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. 4 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 Suppliers 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- DLI/C&E/WI:675/306 ADDITIONAL PURCHASE CONDITIONS (APC) Page 7 of 8 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/WI-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: Supplier

Submit Quotation to: Project No.:

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

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TECHNICAL SPECIFICATION

Turn Key Job -

1. Commissioning and installation of Stainless Steel wall-paneling and PVC flooring.
2. Installation of laminar flow.
3. False ceiling in all areas.
4. All cable trenches and railings wherever required.
5. All electrical accessories like cable wire, electrical outlets, switches, etc. should be fireproof, of reputed make, certified for electrical safety.
6. Bidder has to provide hatch box, storage shelves, scrub basin and other service areas as mentioned in the bid.
7. Installation and commissioning of all equipment.
8. Installation of Pendants.
9. Any other necessary work required for satisfactory working of the Modular OT and not mentioned.

1 WALL PANELING SYSTEM-SS
1.1 The prefabricated Operating Room should be Cladding structure insulated Stainless steel wall panels.
1.2 It should be 0.8mm 304 Grade Stainless Steel sandwich panel with core consisting of rigid polyurethane foam, which has been injected under high pressure, with a minimum density of 40 kg/m3.
1.3 The individual wall panels shall use the tongue and groove technology for joining two panels, no welding should be allowed.
1.4 The gaps between panels shall be suitably filled with metal filler/epoxy and sanded flush.
1.5 Stainless Steel plate finished to fine grain surface, treated properly to take antifungal paint.
1.6 Paneling should be easy to maintain, durable, antistatic/conductive and fire retardant.
1.7 Clearance between inner panel and outer wall should be sufficient to allow the maintenance personnel for service. This closed space should be flushed continuously to eliminate dust and bacterial accumulation.
1.8 Anti-bacterial paint should be coated on the wall.
1.9 Bidder should maintain anti-bacterial paint during warranty and CMC period.
1.10 Wall elements should be resistant to all standard cleaning agents, disinfectants and fumigation agents.
1.11 Panel should be covered with protective sheath to prevent scratch during installation.
1.12 It should have minimum number of junction. The junction should be seamless and should be sealed with suitable sealants.
1.13 Wall paneling should have proper fire protection.
1.14 Bidder should provide factory test certificate for all the material used for wall.
1.15 The wall panels should be CE/UL Listed/BIS certified.

2 CEILING SYSTEM
2.1 The ceiling plates /cassettes should be made up of Stainless Steel sheets, 0.8 mm thick with matt finish and should be coated with antibacterial paint. The ceiling suspension should be as follows.
2.2 Support elements: Suspension bracket with tension spring. Material: High quality galvanized or powder coated steel.
2.3 Room lighting, air supply inlet, ceiling service units, return air outlets, etc should be integrated with SS metal ceiling system.
2.4 The individual panels except those at the edges should be removable individually.
2.5 The ceiling material should be CE certified according to EN standards.

3 LAMINAR AIR FLOW SYSTEM
3.1 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 air flow.
3.2 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 %
3.3 The ceiling system should be equipped with “H 14” class HEPA filters position in the ceiling to achieve 0.25m/sec flow.
3.4 The complete filtration ceiling system should be factory assembled. Its holding structure, Filter frames and top plenum should be made of Aluminum.
3.5 The filtration ceiling system should have flow equalizer to achieve uniform & constant air distribution over the whole surface. It should also have connection for surgical lamp to be fitted in place of any filter.
3.6 The air management system should be designed to achieve class 100 with the following parameters:
   Bacteriological class = B (5 CFU/m3)
   Particle decontamination kinetics CP = 5 min
   ISO 14644/1 classification = ISO 5
   Third party validation by Govt. approved environment lab.
3.7 The positive pressure should be maintained inside the OT to prevent contamination due to air from outside the OT.
3.8 The supplier should provide test certificate for HEPA filter and laminar air flow systems from the original manufactures.
3.9 Should be CE certified.

4 EXHAUST AIR CABINETS
4.1 Return air exhaust grill should be provided in the OT.
4.2 The exhaust air cabinets should be openable and cleanable.
4.3 These cabinets should have suction from bottom.
4.4 Designed flow rate should not be less than 1000 m3/hr. Distribution of exhaust air volume should be divided between fluff strainers to maintain the required pressure within the theatre without causing turbulence.
4.5 The Exhaust air cabinet should be manufactured and supplied by the supplier of wall and ceiling system supplies.
4.6 Specification of materials and aesthetic should match perfectly with the ceiling system.
5 PVC FLOORING

5.1 It should be with 2mm antistatic seamless PVC flooring

5.2 Floor should be smooth, non-slip, impervious material conductive enough to dissipate static electricity but not conductive enough to endanger personnel from electric shock.

5.3 Electrostatic charge dissipation combat PVC seamless flooring of very high quality should be provided.

5.4 Thickness not less than 2 mm. Continuous roll should be used and joints should be welded by special PVC thermal welding units using PVC welding bars of same colour.

5.5 The sheets should be highly durable with resistance to shock and indentation. It should be scratchproof also. The conductive material should be uniformly impregnated as grains.

5.6 It should be inert to body fluids, chemicals and disinfectants. Should not be affected by temperature variation within the OT.

5.7 The floor should efficiently discharge electric charges up to 2 kV

5.8 Flooring should be done by skilled workers of accredited agencies authorized by the supplier of PVC sheets. The electrical resistance (point to ground) should be within 2.5x10^4 to 5x10^6 ohms. The floor should not allow buildup of electrical charge beyond 100 volts due to antistatic effect. The corners should not be terminated sharply and concealed cove former (aluminum) should be used to overlap the wall panel to a height of approx.25mm and sealed perfectly and uniformly. Self-leveling compounds should be used.

5.9 The conductive copper grid laid underneath the PVC sheet should be supported by liquid epoxy compounds allowed to set as a uniform and level surface. The copper strips to be made visible by grinding and no copper strip should project more than 0.5mm above level surface to avoid damage to the PVC sheet. One earthing lead should be brought out from every 150sq.ft area and attaching it to the main earthing strip/ground.

5.10 Copper grounding strips (0.05 mm thick, 50 mm width) should be laid flat on the floor in the conductive adhesive and connected to copper strip of grounding. The connection from copper grid should be brought out uniformly at places to form equipotential grid.

5.11 Flooring should be mechanically shock proof, scratch proof, flame retardant and antimicrobial

5.12 Corners should be uniformly curved

5.13 Final surface should be non-corrosive to biological fluids and detergents.

5.14 Colour should be uniform pleasant and matching with ambience

6 HERMETICALLY SEALED DOORS

6.1 This should be a hermetically sealed, single sliding door of 2.1 (H)X 1.8 m(W)

6.2 The controller should be capable of being operated by elbow switches/foot switches as well as touch less sensor.

6.3 The track should be of stainless steel and the running surface for the top rollers should be suitably angled to reduce resistance to movement.

6.4 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.

6.5 Opening and closing of the door should be microprocessor controlled electromechanical movement.
6.6 The door material should be high quality stainless steel. Color should match the interior and care should be taken to make the leaf strong and light weight.
6.7 One should be able to open and close the door effortlessly in case of failure of automatic mechanism.
6.8 Door opening handle should be strong and sturdy. Material should be of SS (gloss finish). Should be provided with high quality cylindrical lock.
6.9 Door leaf should have high quality synthetic rubber gasket with long life to ensure hermetic sealing (to maintain air pressure differential). Air tightness 99.99% at a pressure of 100KPa.
6.10 The finished floor on either side of the door should be perfectly level (maximum permissible difference ±1mm).
6.11 The overall thickness of the finished door should not exceed 60mm. 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).
6.12 The door and controls should comply with IEE regulation and BS 7971 standardization. All motors used should be DC brushless motors with essential isolation from mains.
6.13 Door should be with vision window 300 mm x 300 mm with double glazed panels and hermetically sealed motorized roller blind inside.
6.14 Noise level should not exceed 60 db.
6.15 The starting time after receiving the signal should be adjustable between 0.5 to 20 seconds.
6.16 Door should provide X ray protection as per AERB regulation (Lead equivalent at 100kV is 0.27mm).
6.17 The complete door assembly should be CE marked.
6.18 Test certificate for hermetically sealed door frame (factory test certificate) should be enclosed with the pre dispatch documents.

7 TOUCH SCREEN CONTROL PANEL
7.1 The control panel should be touch screen panel. This control panel should work as the central control panel for the HVAC controls, instruction board, communication interfaces - both audio and video etc.
7.2 The panel should accommodate all necessary controls for the correct operation and monitoring of the equipment and services within the operating room (OR).
7.3 The touch screen should be wall mounted, stationed in the visibility line of the surgeon and OT staff. The access height should be convenient for the nurse to operate and help/assistant when in need.
7.4 The panel should accommodate digital clock and the elapsed time indicator.
7.5 The medical gas alarm should indicate high and low gas pressures for each gas service present in the OT including vacuum. This should be supported by audible alarm also. The panel should have an alarm mute (fault annunciation) facility. The sensors (pressure switches) should be at the nearest isolation valve.
7.6 Control for general lighting: ON/OFF and dimming controls organized in groups to provide uniform illumination
7.7 Control of the operating light (major and satellite and camera control (on/off and intensity control) should be provided.
7.8 Hand free telephone set with memory should be located at one side.
7.9 Temperature and humidity control for the room connected to the AHU. (Adjustable...
7.10 Digital room pressure indicator in cm of H2O or equivalent (signal from pressure sensor)

7.11 HEPA filter bank differential pressure indicator

8 PRESSURE RELIEF DAMPERS

8.1 Pressure relief dampers should be provided in each room to prevent contamination of air from clean and dirty areas.

8.2 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 areas.

8.3 Counter-weight balancing system should be provided in the PRD to maintain positive pressure inside the operation room.

8.4 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 a pressure only fractionally above the threshold pressure.

8.5 The body should be epoxy powder coated as per standard BS colors. High grade electrolyzed steel plate should be used for body and high grade SS304 stainless steel for blades.

9 HATCH BOX

9.1 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.

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

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

9.4 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.

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

10 DISTRIBUTION BOARD

10.1 All high voltage equipment should be installed in a separate enclosure.

10.2 The remote cabinet should house the operating lamp transformers, mains failure relays, UPS, electrical distribution equipment & circuit protection equipment for all circuits within the operating theatre.

10.3 All internal wiring should terminate in connectors with screw & clamp spring.

10.4 Connections of the clip-on type mounted, on a CE approved rail & labeled with indelible proprietary labels.

10.5 Individual fuses or miniature circuit breakers should protect all internal circuits.

10.6 Complete schematic drawing with description should be enclosed with the equipment.

11 OPERATING LIST BOARD

11.1 One operating list board should be provided in each operating theater.

11.2 It should be made of ceramic having magnetic properties and should be flushed to the wall of the operating room.

12 X RAY FILM VIEWER

12.1 LED type flat panel X-ray viewing panel should be supplied.

12.2 This should comply with relevant electrical safety codes.
12.3 This should be a 3 panel viewing screen.
12.4 Mounting should be flush with the wall to avoid dust accumulation and growth of organisms between wall and panel.
12.5 Body should be of extruded aluminum powder coated black with bacteria resistant and disinfectant resistant finish.
12.6 The diffuser on the front panel should be a uniformly lit screen.
12.7 Dimming electronic control should be enclosed at the bottom of the cabinet.
12.8 Proper spring loaded film clip with rollers should be provided to hold the films firmly and to remove the film without scratches.
12.9 Each panel should be able to illuminate films up to 14"x17" size. (Total 3 panels)

13 SCRUB STATION
13.1 Compact surgical scrub sink should be designed for use in OT complex providing for pre procedural scrub up. (Double sink combination as suitable)
13.2 Each fixture should be fabricated from heavy gauge type 304 stainless steel and should be seamless welded construction, polished to a satin finish.
13.3 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.
13.4 Hands free operation should include infra red sensors with programmable adjustment.
13.5 Thermostatic mixing, valve control should be located behind the access panel and maintain constant water temperature.
13.6 Timing should be adjustable to meet individual application requirements.
13.7 Provided with infrared sensors, thermostatic control taps with fail safe temperature controls.
13.8 All units should have reduced anti-splash fronts.
13.9 Knee operated switch should be provided additionally.

14 STORAGE UNIT
14.1 The storage unit should be made with 1.50 mm thick stainless steel panels.
14.2 It should be continuously ventilated by positive air in the room through ventilation holes provided at the bottom and top of opposite sides.
14.3 The shelves should be of welded SS mesh of size 3 mm and grid size 30 mm x 30 mm removable for cleaning.
14.4 The storage unit should be divided 2 or more parts and each part should have individual glass doors with high quality locking system
14.5 The overall size should be approx 180 cm x 60 cm x 45 cm

15 PENDANTS FOR ANESTHETIST AND SURGEON
15.1 Double arm moveable Pendant for Anesthetist
   a The Pendants should comply with NFPA 99C/HTM 02-01. 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
   b The Pendant should have the following specification: 900 mm + 900mm moveable arms each with 330 deg. horizontal and vertical movements. Vertical movement should be motorized and allow movement to a height greater than 6.5 feet above floor level.
   c Weight carrying capacity of the arm should not be less than 125 Kgs. should have electromagnetic brakes.
Each arm should be capable of 300-340 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.

The pendant should be European CE Certified or US FDA listed under Medical Devices Directive.

The Pendant Service Heads should be modular with 400mm head. The heads should be capable of accepting a range of shelves, 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 15 Amps. Sockets.

Each pendant should have:
- Oxygen Outlets – 2 nos,
- Vacuum Outlets – 2 nos, Nitrous oxide – 2 nos, Air(4 bar) Outlets - 2 nos AGSS outlet - 1 no Electrical sockets - 6 nos
- Shelf with two rails one on each side – 3 no. Data socket RJ-45 -1 no

**Double arm moveable Pendant for Surgeon**

The Pendants should comply with NFPA 99C/HTM 02-01. 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 have the following specification:
- 900 mm + 900mm moveable arms each with 330 deg. horizontal and vertical movements. Vertical movement should be motorized and allow movement to a height greater than 6.5 feet above floor level.

Weight carrying capacity of the arm should not be less than 200 Kgs. should have electromagnetic brakes.

Each arm should be capable of 300-340 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.

The pendant should be European CE Certified or US FDA under Medical Devices Directive.

The Pendant Service Heads should be modular with 400mm head. The heads should be capable of accepting a range of shelves, 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 15 Amps. Sockets.

Each pendant should have:
- Vacuum Outlets – 2 nos,
- Air(7bar)/Nitrogen Outlet- 02nos (for Ortho OT / Neuro OT (Optional)
- CO2 Outlet - 02 no’s(Optional)
- Electrical sockets - 6 nos.
- Shelf with two rails one on each side – 3 no. Data socket RJ-45 -1 no

**PERIPHERAL LIGHTING AND CLEAN ROOM LUMINARIES**

16.1 To provide peripheral lighting and clean room luminaries with intensity min 500 Lux, it should be 8 in numbers for each OT. Should be with highly specular anodized aluminum reflectors and optical antiglare system.

16.2 Luminaries cover should be made of highly resistant, disinfectant proof laminated safety glass with stylish fine grained surface, glass pane with white coated steel frame.

16.3 The reflectors should be of high quality, cleanable and non-deteriorating.
16.4 The white luminaries body should be made of sheet steel/ perfectly powder coated, supplied ready for connection optionally for individual or series circuit with digital electronic control gear in multi lamp technology.

16.5 Recess frames should be gas tight. The fitting should be flush with the ceiling and should be removable from top or bottom. The light fitting should be uniformly and aesthetically distributed on the ceiling to provide uniform illumination in the OT. Light should not interfere when green mode endoscopy is performed.

16.6 Peripheral lighting should be done according to IP65 (international protection rating 65). Control equipment for the general lighting and the light dimming should be provided in the theatre control panel.

17 ELECTRICAL INSTALLATIONS

17.1 Power distribution within "the departments should be "provided" from distribution boards located local to each theatre. Sub mains power to these panels should be by the general electrical contractor. From these panels all distribution services within the departments should be run. Isolated power supply, insulation measuring and protection as per IEC standards should be provided. Complete details and BOQ to be furnished. Complete schematics should be supplied along with the offer.

17.2 Earthed equipotent bonding of all exposed metalwork should be provided.

17.3 Power sockets within the Operating Theatres ancillary areas should be matched to the rest of the hospital.

17.4 Light fittings within the clinical areas should be recessed LED type with control gear.

17.5 Fittings should be sealed In accordance with the standard IP54.

17.6 All equipment should be fully and permanently labeled to identify and describe the function, operation and voltage of the apparatus concerned. Throughout and upon completion of the electrical installation, tests in accordance with relevant sections of the local wiring regulations should be carried out and the results recorded.

17.7 Medical grade isolation transformer of suitable capacity should be provided for every operation theatre which ensures the safety of staff and patient. System should have automatic fault monitoring & isolators provided through leakage relays etc according to IEC recommendation. To be arranged through specialists.

18 MEDICAL GAS LINE INSTALLATION

18.1 The bidder should ensure that all works carried out are to the recommendation made in the Department of Health and Social Security Health Technical Memorandum number 02-01 /NFPA 99C.

18.2 Bidder should provide Oxygen, Air, Vacuum, AGSS, and Nitrous Oxide supply to Operation Theatres from the existing lines terminated outside the OT.

18.3 Bidder shall be responsible for supply, installation, testing and commissioning of complete MGPS system inside the operation theatre including Distribution piping, Pendants, outlets and other essential accessories.

18.4 Terminal units should be gas specific and only accept the correct Medical gas probe. Gas specific components shall be pin indexed to ensure that a correct gas specific assembly is accepted.

18.5 Each terminal unit should be identified by the appropriate recognized name or symbol, colour, coding and shape as per HTM 02-01 /NFPA 99C. Outlets should be CE certified/UL listed.
18.6 Copper pipes should be of solid drawn, seamless, deoxidized, non-arsenical, half hard, tempered and degreased copper pipe. All copper pipes should be degreased & delivered capped at both ends. The pipes should be accompanied with manufacturers test certificate for the physical properties & chemical composition. The copper pipe should comply with EN 13448. Copper pipe must have reputed third party inspection certificate (Eg. Lloyd’s, TUV, SGS).

Fittings should be made of copper and suitable for a working Pressure of up to 17bar and especially made for brazed socket type connections.

The copper fitting should comply with EN 1254-1
The Brazing filler material should comply with EN 1044

19 DEMOLISHING, RECONSTRUCTING, WATER PROOFING, PLUMBING, REPAINTING AND REPLACEMENT

19.1 Any demolition, reconstruction, water proofing, necessary plumbing, anti-microbial painting, replacement of any door or windows to provide structured design for modular OT should be carried out by the bidder.

20 CENTRAL UPS

20.1 Bidder should provide central sine wave based UPS to support all modular theatre equipment's.

20.2 Bidder should supply two 200 KVA UPS one for equipment and one for lighting.

20.3 Bidder should provide required electrical wiring from UPS to all modular OTs.

21 VIEW WINDOW

'Supply, Installation, Testing and commissioning of VIEW WINDOW with 6mm toughened glass on both sides. Motorized Blinds of reputed make sandwiched in both glasses. The window will be recessed into wall. View Window size: 1800 x 1500 mm. View Window should be CE certified and in compliance under Class 1 Medical device.
OT LIGHT WITH CAMERA

A. OT Light – LED
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 System should have the following technical specifications:
- Number of Light heads: Two per suspension
- Color Temperature: 4300 k - 4700 (±10 %) (White LED)
- Field Size Diameter: 18 - 20 cm – 25 - 27 cm
- Depth of Field: 80 - 30 cm – 120 - 60 cm
- Illumination Level: 160000 Lux Major Dome & 120000 Lux
- Controls: Control Panel (wall and on dome)
- Rotation: 360 - 330 degrees
- Sterilizable Handle: Yes
- Light head Diameter: 65 - 70 cm
- Mounting Type: Ceiling
- Supply Voltage: 230 VAC 50 Hz
- Bulb Type: LED
- Dimming Range: 30% - 80%
- Operating/Storage Humidity: 10 – 95%
- Life of Light Source: > 40,000 Hrs

There should be a provision to mount the camera in the satellite dome/ third arm.

Surgical Light System Should be compliant with relevant European CE /US FDA standards

B. HD Camera System – HD1080i

Description: Integrated In-Light Camera System should be integrated at the centre of one of the domes of this lighting system/ third arm in order to capture images & video sequences of the open cases. Such a autofocus – Locable camera should have the following specifications

- Signal to Noise Ratio (S/N Ratio): > 50 dB
- CCD: 1/3"
- Optical Zoom: 10X
- Digital Zoom: 12-15X
- Video Output: S-Video & Composite Video
- White Balance & Gain: Automatic/Manual

Light and Integrated Camera should have a control through Touch Panel of the control equipment placed inside the operating room.
C. HD LCD Flat Panel Monitor

Should be 24” High Definition Progressive Scan Flat-panel Monitors with ceiling mounted spring arm suspension to support high-definition/HDTV progressive Scan images and should be able to support and display DVI/HDTV, RGBHV, S-Video, Composite video signals. Aspect ratio 16:9/16:10. Resolution – 1920X1200.

The flat Panel suspension should be ready with the cables for integration of High Definition Digital (DVI/HDTV), RGBHV (High Resolution), SVHS (S-Video), Composite video signals to travel from the various sources of video like endoscopic camera, room camera, in light camera, high definition flat panel monitors, while assuring native resolution / signal.

D. Recording system to be offered separately

Recording system should be full HD medical grade monitor LCD 19” and having the one TB storage space.