

**SUBJECT NO:86**

**Sub: Works – Engg. – Construction of VUDA Children Arena at Siripuram – Certain modifications during execution – Revised Estimate submitted as per the recommendations of the Committee of Architects & Engineers – Subject placed before VUDA Board for consideration and approval – Reg.**

- Ref:
1. Administrative sanction accorded by Vice-Chairman, VUDA, Dt.28-09-2011.
  2. Approval of certain deviations during execution by Vice-Chairman, VUDA Dt.22-11-2012 .
  3. Revised Estimate submitted by Executive Engineer concerned on Dt. 04-05-2013.
  4. Note orders of Vice-Chairman, VUDA approving certain modifications as per revised design, Dt.25-5-2013 and 31-5-13.
  5. VUDA Board Resolution No.6, Dt.20-07-2013.
  6. Proc. No. Rc.No.51/2011-2012/EE-V/VUDA,Dt.29-07-2013 of Vice- Chairman, VUDA constituting the committee of Architects and Engineers
  7. Minutes of the Committee of Architects and Engineers held at 11.00 A.M on 07-08-2013 in VUDA office.

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**AGENDA NOTE:**

Earlier, the subject - Revised Project estimate for the work – “Construction of VUDA Children Arena” for Rs.25.00 Crores against the original estimate cost of Rs.9.50 Cores along with proposals for entrustment of Roofing system to M/s. KALZIP (only vendor for the proposed special and unique type of roofing solution) as suggested by the Architect was placed before VUDA Board for consideration and approval.

Thereupon VUDA Board resolved vide reference 5<sup>th</sup> cited above to postpone the subject since Model Code of Conduct due to Panchayat Elections in the state and directed to constitute a committee of Architects & Engineers to study the proposals and to examine the variation in cost whether there are changes in the designs and the same is justified or not and actual reasons for the variations in the proposal.

In accordance with the direction of VUDA Board, Vice-Chairman, VUDA constituted the Committee of Architects and Engineers with the following officers as Members vide reference 6<sup>th</sup> cited above.

1	Dr. S. Ramesh, Professor and Head, Department of Architecture, School of Planning & Architecture, Vijayawada	Member
2	Prof. G. Viswanadha Kumar, Head, Department of Architecture, Nominee of Vice-Chancellor, AU	Member
3	Dr. D.S.R. Murthy, Head of the Department of Civil Engineering ,AU , Waltair	Member
4	Sri B. Jayarami Reddy, Chief Engineer, GVMC	Member
5	Sri I. Viswanadha Rao, Chief Engineer, VUDA	Member & Convener

The members of the Committee inspected VUDA Children Arena under construction and a Meeting was convened on 07-08-2013 in the Meeting Hall, 3<sup>rd</sup> Floor, U.B. Complex, VUDA office. In the beginning, Chief Engineer, VUDA explained conception of the project initially and modifications / changes that were took place subsequently, during execution. Afterwards, the Architect has made power point presentation on the project covering all the salient features.

Further the Vice-Chairman, VUDA appraised the project proposals and outcome in utility point of view and revenue generation after construction and advised Committee Members to suggest proper methodology and explore ways and means to reduce the project cost, since the project cost arrived earlier has gone up considerably.

After examination of the project proposals, line estimates prepared earlier, modifications / changes made and present revised estimate according to BOQs furnished by the Architect and detailed discussions on possible ways to minimize the expenditure without changing or affecting the

character and form finalized by the Architect, the following conclusions are arrived:

- Modifications / Alterations were made time to time without any; conscious direction and collective integration of the components with proper documentation. The systematic approvals for the changing scope of work were not documented properly.
- The on line estimate would have been a plinth areas estimate instead of showing break up of detailed components on lump sum basis.
- Part of civil estimates is more or less in conformity with the project estimate earlier with a reasonable hike of Rs.1.11 Crores as the nature of the project is changed drastically.
- Air-conditioning components appears to be on higher side as compared to the volume of the space to be conditioned. Air Conditioning component of Rs.1.80 Crores may come down to Rs.1.00 Crores, provided to consider only Auditorium (first floor) and instead of all supporting spaces. The multipurpose hall in Ground Floor may be taken up in second phase with Rs.80.00 Lakhs. Similarly the lift component of Rs.24.00 Lakhs can be taken up in second phase.
- Landscaping component can be brought to Rs.50.00 Lakhs against Rs.1.00 Crore as foot print of the building has been increased as compared to earlier proposal.
- Roofing component seems to be critical and can be brought down to 50% of the cost i.e., Rs.3.24 Crores without changing the Architectural concept as it was projected to Rs.6.48 Crores excluding structural glazing. It is proposed to have roofing component of truss with coated G.I sheet along with appropriate insulation to achieve  $0.3 \text{ w/m}^2 \text{ C}^\circ$  (U-Value).
- Acoustic treatment to the auditorium and as well as to the multi-purpose hall in the ground floor can be reduced to Rs.50.00 Lakhs by identifying the suitable / functional material viz., Soft boards / Straw boards and curtains as practiced in theatres like INOX / PVRs etc.

- The sound system and projector equipment may also be brought down to Rs.1.25 Crores. The competitive bidding process with detailed specifications may be obtained from the market as these components are not available in SSR rates (AP).
- The items - Projector facility costing of Rs.50.00 Lakhs and Lifts for Rs.24.00 Lakhs may be avoided at present and same can be added as and when needed.
- Multipurpose Hall for Children in Ground Floor can be further strengthened by using this space for children exhibition in the form of photos of suitable size for all the internal walls except one wall which can be used for display of paints prepared by the children.

Incorporating the above, the expected reduction in the projected estimated cost is as noted below:

S. No.	Items	Proposed estimate by VUDA (Rs. Crs)	Suggested by the Committee (Rs. Crs)	Expected reduction (Rs. Crs)	Remarks
1	Air conditioning	1.80	1.00	0.80	May be taken up in 2 <sup>nd</sup> phase with 0.80 Crores.
2	Roof	6.48	3.24	3.24	
3	Landscaping	1.00	0.50	0.50	
4	Projector & Sound system	2.21	1.25	0.96	
5	Lifts	0.24	--	0.24	May be taken up in 2 <sup>nd</sup> phase with 0.24 Crores
6	Generator set	--	0.15	0.15	
7.	Acoustics	1.39	0.50	0.89	
<b>Total expected reduction amount</b>				<b>6.78</b>	

- As per the above, Rs.6.78 Crores can be reduced from the projected estimate of Rs.25.00 Crores, so that project estimate may come down to Rs.18.22 Crores.

- Architect may be advised to work out appropriate façade solution so that the projected estimate of Rs.1.00 Crores for structural glazing can be reduced moderately without affecting the architectural concept.
- Strict adherence to the proposed specifications and correctly estimated quantities would result in the above estimated reduction in the cost of the project. Further alterations if made, may again escalate the cost.
- Finally, it is suggested to have requisite approvals from the competent authority from time to time with proper documentation and to have full clarity from the concept to completion.

Copy of Minutes of the Meeting is enclosed herewith for kind perusal.

In accordance with the suggestions and recommendations made by the Committee and based on the design of roof along with structural arrangement suggested by Prof. S. Ramesh, School of Planning & Architecture, Vijayawada, the architect has furnished BOQs for the works yet to be taken up. Accordingly, Engineering wing has prepared detailed estimates for the balance items of works to complete the work in full shape and the details are as tabulated below:

Item of work	Amount as per sanctioned estimate (Rs. Lakhs)	Amount arrived as per BOQ furnished by the Architect (Rs. Lakhs)	Amount arrived as per execution and as per the recommendations of the Committee and detailed estimates worked out accordingly (Rs. Lakhs)
<b>I. Works taken up so Far</b>			
Cost of civil works(Main Building including internal water supply & Sanitary arrangements)	412.00	412.00	412.00
Provision for dismantling	10.00	---	---
Deviations – Excess quantities / Additional works of Earth work excavation, RR Masonry, Fal-G Brick Masonry, RCC elements, Steel reinforcement of Fe-415 and Fe-500 grade for foundations, columns, beams, slabs found necessary as per the modified design.	---	72.46	72.46
Providing Post Tensioned beams	---	24.65	24.65
Statutory provisions like VAT, Cess, ST, Insurance etc.,	43.22	55.83	55.83

A.S. Charges + 3 <sup>rd</sup> party QCC + Variation in rates	74.78	76.94	76.94
Excess tender premium	---	24.12	24.12
<b>Sub-Total:</b>	<b>540.00</b>	<b>666.00</b>	<b>666.00</b>
Consultancy/Architect fee @ 2.75%	12.00	15.00	15.00
<b>Sub-Total:</b>	<b>552.00</b>	<b>681.00</b>	<b>681.00</b>
<b>II. Works to be taken up</b>			
<b>A. Interiors &amp; Other finishes</b>			
Internal & External Electrification(54.00+88.00)	48.00	144.00	142.00
Air Conditioning System	100.00	180.00	137.00
Sound System + stage lighting + stage curtains(61.00+30.00+24.00)	50.00	221.00	115.00
Seating arrangements Silver Screen etc.	50.00	30.00	30.00
Elevation treatment & Architectural features including structural glazing	70.00	50.00	86.00
Greenery & Landscaping	20.00	100.00	50.00
Pathways, food courts etc.	10.00	---	---
<b>Sub-Total</b>	<b>348.00</b>	<b>725.00</b>	<b>560.00</b>
<b>B. Items not covered earlier</b>			
Standing Seam Roof Profile including roof trusses including structural glazing.	--	648.00	324.00
External water Supply & Sanitary arrangements	--	35.00	35.00
Fire Fighting arrangements	--	70.00	70.00
Providing acoustics	--	139.00	65.00
Providing lighting arrangements	--	90.00	90.00
Lifts	--	24.00	--
Other items – Entrance door	--	38.00	--
Architectural consultancy charges and Other Miscellaneous works	50.00	50.00	35.00
<b>Sub-Total:</b>	<b>--</b>	<b>1094.00</b>	<b>619.00</b>
<b>Grand Total (I + II.A+II.B)</b>	<b>950.00</b>	<b>2500.00</b>	<b>1860.00</b>

The amounts shown for balance works to be taken up in the last column of the above table are inclusive of statutory provisions.

As per the above, the total value of works to be taken up comes to Rs.1179.00 Lakhs including architectural consultancy charges. The total project Cost including building works taken up already works out to Rs.1179.00+ Rs.681.00 = Rs.1860.00 Lakhs Say Rs.18.60 Crores against the previous projected cost of Rs. 25.00 Crores.

To save delay and to complete the main building in full shape, sub estimates were prepared for the following ancillary works.

• Water supply & sanitary arrangements	-	Rs. 35.00 Lakhs
• Internal electrification	-	Rs. 54.00 Lakhs
• Fire fighting arrangements	-	Rs. 70.00 Lakhs
• Air-conditioning	-	Rs. 180.00 Lakhs
<b>Total</b>	<b>-</b>	<b>Rs.339.00 Lakhs</b>

The Vice Chairman, VUDA accorded Administrative Sanction for Rs.339.00 Lakhs and permitted to take up the above by way of 'e'-tenders to save delay pending finalization on decision on roofing. Accordingly, tenders were finalized for the first two items – water supply & internal electrification arrangements as there is no difference in costing and balance two are kept in abeyance.

With regard to the roofing, the Committee has concluded to go ahead with providing galvalume sheet in two layers along with suitable insulation material and to provide Alcopanel material on top of roof along with frame / additional purlins to maintain the architectural shape and form as per the design finalized. This decision was taken as alternate option for roofing instead of providing Standing Seam Roofing system with 0.90mm thick Aluminium alloy layers of Kalzip brand to minimise the cost of the project.

It is evident from the above, that the project cost has been enhanced considerably due to non inclusion of required items at the time of line estimate prepared and sanctioned earlier and modifications made during

execution of works and in adequate lump sum provisions provided towards certain major components.

The Committee has agreed for deviations i.e., excess quantities and supplemental items occurred amounting to Rs.129.00 Lakhs, in the Main Building work taken up so far as the same are found to be more or less in conformity, since the nature of project is changed drastically. The revised estimate worked out for Rs.681.00 Lakhs against the sanctioned estimate provision for Rs.552.00 Lakhs was approved and works are in progress now.

Altogether the total project cost including the works taken up so far considering the deviations and additional sanctions and balance works to be taken up comes to Rs.681.00 Lakhs + Rs.560.00 + Rs.619.00 = Rs.1860.00 Lakhs (including architectural consultancy charges to a tune of Rs.35.00 Lakhs) as per the modifications and suggestions recommended by the Committee for implementation in execution of the above project against the project cost arrived for Rs.2500.00 Lakhs previously. Thereby an amount of Rs.640.00 Lakhs has been reduced in the overall project cost and the savings resulted is substantial.

In view of the above it is requested

- a) To ratify the action taken by Vice Chairman, VUDA in approving the deviations to a tune of Rs.129.00 Lakhs for the building work in progress.
- b) To ratify the action taken by Vice Chairman, VUDA in according Administrative Sanction for ancillary works as noted above to a tune of Rs.339.00 Lakhs and to complete civil works including internal water supply & sanitary arrangements and internal electrification costing Rs.35.00+Rs. 54.00 = Rs.89.00 Lakhs



- c) To approve the revised project cost of construction of VUDA Children Arena for Rs.18.60 Crores against the earlier sanction of Rs.9.50 Crores as per SoR for the year 2012-13 and to sanction additional amount of Rs.9.10 Crores towards completion of balance works of the said project.
- d) To carry out the balance works with an estimated cost of Rs.1179.00 Lakhs component wise as per the estimates worked out based on the recommendations and modified specifications of the Committee as furnished by the Architect and permit to postpone the execution of works, Air condition to multi- purpose hall in ground floor and providing lifts for the time being.

Hence the matter is placed before VUDA Board for perusal and approval at A, B, C & D above.

Sl. No.	Subject No.	Subject	Resolutions
35	86	Construction of VUDA Children Arena at Siripuram – Certain modifications during execution – Revised Estimate submitted as per the recommendations of the Committee of Architects & Engineers – Subject placed before VUDA Board for consideration and approval – Reg.	<p><b>The Committee's report is perused.</b></p> <ul style="list-style-type: none"> <li><b>a. Ratified the action of VC, VUDA</b></li> <li><b>b. Ratified the Administrative sanction given</b></li> <li><b>c. Project cost as revised for 18.60 crores is agreed</b></li> <li><b>d. Balance works are to be executed as per Government Directions on EPC mode.</b></li> </ul> <p><b>The work should be started and completed at the earliest to avoid further escalation of the project cost and CE should directly monitor for early grounding and completion duly holding responsible for the same.</b></p>
36	87	Formation of 80'-0" wide Master Plan Road from Bakkannapalem to Old Adavivaram Junction via Sambhuvanipalem and Dabbanda Village (Phase –I) – Draft Subject placed before VUDA Board for perusal and approval – Reg.	<b>Agreed to take up the roads in non-forest areas. VC to work out the alternate alignment of road in non-forest government land, if any and send the proposal to government for early approval</b>
37	88	Protection of Government lands in GVMC limits - Proposals for construction of compound wall / providing fencing – Draft subject placed before VUDA Board for approval and ratification – Reg	<b>Ratified.</b>