



Procedure on Effective Application of Force Account as a Method of Procurement for Renovation and Remodelling of Government Building Projects

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Abstract: This paper reports on the application procedure for force account for government building projects. The procedure was derived from case study undertaken for renovation and remodelling of three teachers' colleges and five secondary schools in different areas in Tanzania. The study highlighted the pitfalls observed in the implementation of force account as methods of procurement during and after renovation. The key participants of this method were grouped into three, supervising consultancy, procuring entity and executing team (local skilled labour). It was observed that in order to apply effectively the application of force account, the supervising consultancy has major role with collaboration with procuring entity and executing team based on well detailed documents prepared before and after renovation during implementation of this methods. However, the study finds that the supervising consultancy must be checked with ministry or local authority in the required area in detail to monitor the value for money.

Keywords: Force Account, Renovation, Remodelling, Building Projects

1. Introduction

Since 2016, the government of Tanzania has been providing funds for renovation and remodelling of its building infrastructures both for teachers' colleges and secondary schools, where the projects are executed through the method of force account as a procurement method. Under this method, the procuring entity is required to purchase all the materials required for the project from the suppliers and use of local technical labours for implementation of the required activities both obtained through quotations. Both activities are supervised by supervising consultancy under the procuring entity.

According to [1], force account is construction by the use of public or semi-public agencies or departments concerned, where the public or semi-public agency has its own personnel and equipment. As per clause 73-(2) of [1], the use of force account may be justified where the force account required works are small and scattered or in remote locations for which qualified construction firms are unlikely to tender at reasonable prices; work is required to be carried out without

disrupting ongoing operations; risks of unavoidable work interruption are better borne by a procuring entity or public authority than by a contractor; or there are emergencies] needing prompt attention. As per [6] force account method is termed as noncompetitive bid contract where an authorized local municipal agency, generally described as a county, city, or village, has to complete the project by furnishing the labour, equipment, and materials under its direct control. According to [7], the benefits of force account include efficiency gains where the entity is able to execute works much faster, enhancement of internal capacity of the procuring entity since works are executed and supervised by the procuring entity staff and cost savings compared to other methods. Moreover, [7] in order to use force account, it must be ascertained that it is cheaper to execute the works in house as compared to contracting out. Therefore, the procuring entity is able to deliver services at a cheaper cost. Teachers' colleges and secondary schools needed to be renovated and remodelled without interrupting its activities due to the nature of its objective of training and being performed at minimum cost. However, [8] delivering a high performing project successfully

requires that state of practices use an appropriate delivery method. Under this requirement, the author found a need of having outline procedure for an effective application of force account in government building projects in order to deliver the requirement of ongoing projects.

Construction projects are still facing major challenges in completing the construction projects within the estimated budget [9, 10 and 11]. In order to avoid that, an effective application of force account is highly needed with clear documents prepared during conditional survey through supervising consultancy and the procuring entity. The building team involved in the construction of any project should be concerned with quality of project in order to achieve value for money [2]. Effective application of force account as a method of procurement needs a clear coordination methods between the procuring entity, supervision consultancy and executing team (local technical labours within the area). The performance of construction projects under this approach depends on the preparation and application of documents prepared during conditional survey and during the time of renovation and remodelling through discussion among the procuring entity, supervising consultancy and executing team.

The success of application of force account during renovation depend on clear understanding of the terms *renovate* and *remodel* based on the coverage required during conditional survey. The terms are often used interchangeably. However, during conditional survey these words have different meaning where renovates means re-painting, re-facing cabinets, replacing doors or window frame or shutter, installing new light fixtures, or adding other finishes and fixtures. The original design isn't altered drastically, but rather, it is updated to a new standard. In contrast, the word remodel involves changing the use of a space like when the structure and style of a space are completely transformed, for example changing the layout of a room and re- configuring the floor plan [3].

2. Methodology

The methodology adopted in this study is divided into two stages that are preliminary investigation on selected three teachers colleges and five technical secondary schools for

renovations, content review on submitted renovation reports after completion and interview for participants. Each of these stages is described below.

2.1. Preliminary Investigation on Selected Three Teaching Collages and Five Technical Secondary Schools for Renovation

The preparation for case study is important to ensure that subsequent activities of the method are executed effectively and efficiently. This stage is named as a preliminary investigation on selected three teachers' colleges (Songea, Kleruu and Tukuyu) and five technical secondary schools (Tanga, Ifunda, Musoma, Kibiti and Ifakara) for renovations, where the sources of data collection were limited to observation and document review i.e. visualize and review documents submitted during conditional survey to see the value for money for the work completed and if it has been achieved and the way forward.

2.2. Content Review on Submitted Renovation Reports After Completion and Interview

The reports submitted after the completion of the projects and interview conducted were analyzed to see the importance of formulating the procedure for further application of the force account for government building projects. Strengths and weakness were observed in the reports submitted for renovation of the three teachers' colleges and five technical secondary schools as the case study of this study. This verified the needs for formulating the procedures for effective application of force account as the method of procurements for renovation and remodelling of government building projects.

2.2.1. General Reports Observed for Conditional Survey

The reports presented comprised of two main sections as general introduction of the college or school to be renovated and technical section for renovation. The technical reports comprised of dilapidation reports, budgetary schedule of materials and as built and remodelling drawings. The following are some examples of technical section for dilapidation reports and budgetary schedule of materials as indicated below in table 1 [4] and table 2 [5] respectively.

Table 1. Sample of Schedule of Dilapidation and Proposed Schedule of Repairs or Remodelling

Serial No.	Element of Building	Schedule of Dilapidation	Proposed Repair and Remodelling
1	Walling, columns and beam	a) Deteriorated external face of fair finish of concrete for columns and beams as a result of direct exposure to elements of the environment such as rainfall and sun. b) Deteriorated internal face of walls as a result of direct exposure to elements of the environment and lack of proper maintenance system c) Deteriorated internal face of concrete ceiling as a result of direct exposure to elements of the environment and lack of proper maintenance system. d) Damaged laundry and bath rooms walls e) Several minor cracks on walls	Thoroughly wire brush external fair concrete finish and apply cement wash to cleaned surface Scrub off the existing internal wall paint apply skimming by using gypsum powder and white cement, and then paint emulsion paint on walls as final Clean the surface paint apply skimming by using gypsum powder and then paint emulsion paint on concrete ceiling as final coats Fix wall tiles in all wet zones area Seal all cracks on walls internally and externally

Serial No.	Element of Building	Schedule of Dilapidation	Proposed Repair and Remodelling
2	Floor and Ceiling	a) Major clacks on floor screed (Cement and sand)	Carefully remove existing screed and replace with new (cement sand screed).
		b) Damaged laundry and bath rooms floors	Fix floor tiles in all wet zones area
		c) Ceiling damaged due to linkage of IT roof sheets.	Supply and fix new ceiling chipboards on damaged parts of the ceiling and refill parts of roof sheets with linkage around nails
		d) Ventilation wire gauze have been damaged	Replace damaged wire gauze with a new one steel wire gauze
3	Roofing	a) Linkage of IT roof sheets.	Fill with roofing compound and replace nails cape and for those which cannot be filled replace new ones.
		b) Linkage of roof slab connecting main block with annex block	Carefully clean the existing slab then level the existing slab and supply and fix asphalt felt.
		c) Deteriorated timber roof structures and fascia boards	Replace damaged timber with new one matching the existing in term of size
4	Doors and windows	a) Damaged flash doors, frames or both in hostel rooms, corridors and WCs	Remove all damaged flash doors including its ironmongery and depleted frames. Repair all doors including its ironmongery and frames that can be repaired. Replace with hardwood panelled doors, hard wood frames on missing or depleted area.
		b) Defective locks on most of the doors in hostel rooms and WCs	Replace all tower bolts with Union notice lock set to the hostel rooms and fix union notice lock set to the WCs.
		c) Broken glasses	Remove the broken glass and replace with new one
		d) Damaged louver windows, wire mesh and mosquito gauze	Remove and fixing new louver, wire mesh and mosquito gauze.
5	Plumbing works	a) Damaged toilet, flushing cistern, Hand washing basin and other plumbing fittings	Remove all broken toilet sink and replace with new Arrow toilet sink complete with all accessories and inlet and outlet pipes and replace all damaged hand wash basins
		b) Damaged surfaces of manholes and gully traps,	Replace all damaged stop cork and manhole covers
		c) Damaged water tapes, stop cork, waste water pipes	Replace all damaged cast iron pipes by PVC pipes and thoroughly inspect all drain and waste pipes and repair/replace damaged ones and ensure that all leaks are stopped
6	Electrical works	a) Improper and old wiring system.	Wiring rectification
		b) Missing power socket Damaged Distribution Boards and switch socket,	Replace power socket distribution board, main switch and switch socket where necessary

Table 2. Sample of Budgetary Estimates for Schedule of Materials required.

Item	Description	Unit	Quantity	Rate (Tshs)	Amount (Tshs)	
a	Ceiling					
	12mm Thick gypsum board ceiling; fixed with galvanised round headed screws; to timber brandering including skimming joint; with 3mm skim coat of hard wall plaster; with smooth trowelled finish; complete with cornices; internally and externally	M ²	325.00			
	9mm Gypsum board EX Thailand 1200x2400mm	No	124.13	20,000.00	2,482,600.00	
	Cornices	No	51.00	8,000.00	408,000.00	
	Gypsum screws	Pkt	8.00	8,000.00	64,000.00	
	Fibre tap	Pkt	9.00	10,000.00	90,000.00	
	50x50mm treated softwood	M	219.38	3,000.00	658,140.00	
	Nails 4"	Kg	19.94	3,500.00	69,790.00	
	Painting and decoration					
	Scrape off existing paint on plastered walls; clean down; stop in cracks and rub down; prepare and apply one coat of acrylic primer; two finishing coats wash and wear silk paint; plastered surfaces; remove all debris away from site; walls internally over 300mm girth	M ²	576.00			
b	Sado binder	Ltr	44.31	4,500.00	199,395.00	
	White emulsion	Ltr	128.00	2,000.00	256,000.00	
	Gypsum powder	Bag	38.40	20,000.00	768,000.00	
	Silk paint	Ltr	144.00	7,500.00	1,080,000.00	
	Roller brushes	Ltr	6.00	5,000.00	30,000.00	
	Sand paper	M	38.40	3,000.00	115,200.00	
	Wire brush	No	6.00	5,000.00	30,000.00	
	Finishing					
c	Tile, slab or block full bodied non-slip porcelain tiles 600 x 600 x 10mm; fixing with approved adhesive; grouting with approved grout; or other equal and approved; to floors; 3mm joints straight both ways; level; to cement and sand base;	M ²	325.00			
	Generally					
	600x600 Porcelian Tiles	Box	256.00	45,000.00	11,520,000.00	
	grout	Pkt	65.00	3,500.00	227,500.00	
	Cement	Bag	65.00	13,000.00	845,000.00	
	Sand	M ³	6.50	31,500.00	204,750.00	

2.2.2. Observation of Reports Submitted After Renovation

The reports submitted cover materials purchased and labour charges reports. Materials purchased reports provide information of all purchased materials from different suppliers with current market price based on specification provided from quotations. It is observed that some materials vary in term of price and quantity compared to original documents submitted due to variation in extent of the works to be done compared to conditional survey reports. The study reveals that conditional survey should have comprehensive detailed in order to avoid variations.

Labour charges as per reports submitted during conditional survey were provided as lump sum, but in final reports were given in detail showing charges for each building for different professional skills like masonry section (comprise masonry and panting works), electrical section, carpentry section (consists of works of modifications and fixing of timber doors, windows, cupboards, ceiling and roofing),

plumbing section, fabrication and welding section and information communication technology section. The format of labour charges during implementation was based on the quantity and the size of the works to be done in term of height, area or volume. The study observed that labour charges should not be given lump sum during conditional survey; it should be given in details so that during implementation should be used as a reference for charging labour.

3. Findings

The findings of this study consist of two parts that are problems faced by the participants for the application process of force account for renovation of government building projects and the required procedures for application of force account for renovation of government building projects.

3.1. Problems Faced by the Participants for the Application Process of Force Account for Renovation of Government Building Projects

Table 3. Problems Faced by the Participants in the Application Process of Force Account for Renovation of Government Building Projects.

Serial no.	Elements contained in the conditional reports	Participants involved	Problem identified
1	General Technical Reports	Procuring entity	Misunderstanding of the overall coverage of the reports The technical reports were too general hence not easy to apply.
		Supervising consultancy	General regulations of how to implement force account were not identified in the reports. Lack of uniformity in how to execute the works
2.	Budgetary Schedule of Materials	Executing team (Local Skilled Labour)	The executing team was not given the reports.
		Procuring entity	Misunderstanding of the coverage of the budgetary reports Problem of specification for some of items identified in the schedule of materials Lack of some items required for implementation especially on services activities like plumbing and electrical installation
3	As built drawings and remodelling drawings	Supervising consultancy	Many variations of some of quantities during execution like requirements on safety gears and all activities on services especially plumbing. Misunderstanding of the coverage of the budget for each activities supposed to be performed
		Executing team (Local Skilled Labour)	Problem of determination of labour cost for some of activities before performed Misunderstanding of the provided drawing both before and after remodelling
3	As built drawings and remodelling drawings	Procuring entity	Time provided was not enough to produce all drawings.
		Supervising consultancy	None skilled on interpreting the provided drawings
3	As built drawings and remodelling drawings	Executing team (Local Skilled Labour)	
		Procuring entity	

The major elements contained in the conditional survey reports were: general technical reports, budgetary schedule of materials, as built drawings and remodeling drawings for each building required remodelling. During implementation of the works, these elements were applied to meet the demands of the projects. However, after review of the documents submitted and observing the work completed, the following problems were identified as facing the participants as per table 3.

3.2. Required Procedures for Application of Force Account for Renovation of Government Building Projects

From the above discussion on the problems faced during and after renovation, in order to apply well force account during renovation for building projects the following must be coordinated as illustrated in the following frameworks as key tool in how to apply force account.

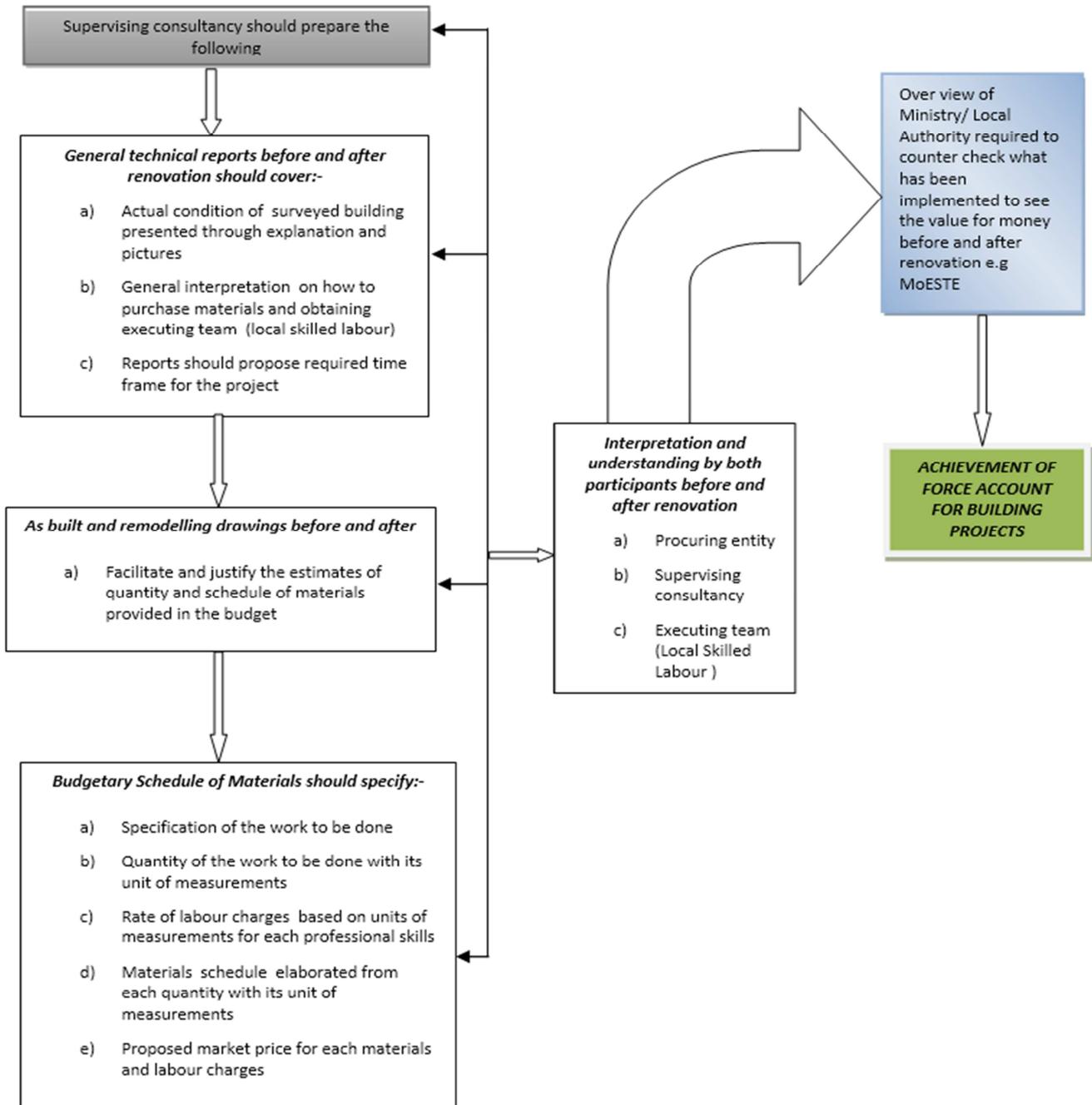


Figure 1. An application procedure for force account for government building projects.

4. Conclusion

There has been a demand for application of force account as a means of procurement methods for some of government building projects especially for renovation and remodeling in order to minimize the cost of project compared to other methods. This study has highlighted the situation attributed to best practice of force account for renovation and remodeling for government building projects and has suggested procedures in application of force account. It is important to note here that the outcome of this study was based on the detailed investigation of preliminary reports on

the reports submitted by consultancy and observation for the work completed. The procedure can be flexibly used with little or no modifications for application of force account for building projects, while the best practice guidelines can be considered for effective implementation of force account as per requirement by public procurement regulatory authority.

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