



GOVERNMENT OF INDIA

CENTRAL PUBLIC WORKS DEPARTMENT

CPWD WORKS MANUAL

2012



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FOREWORD

It gives me great satisfaction that 'CPWD Works Manual - 2012' has been ready now. The 'CPWD Works Manual' which is a reference document of CPWD, was updated & published last in 2010. Due to fast pace of changes in current scenario of construction industry in the country, it is necessary that Works Manual is also updated to fulfil the requirements of present day work environment, providing adequate support & guidance to the planning & field units of CPWD to ensure a regulated & efficient works management.

This Works Manual provides a basic frame work for planning, designing & execution of Construction Works in CPWD. Due to fast changing requirements in the field of Construction Management & Technological Upgradation, the Manual requires regular updation. Accordingly, this revision of CPWD Works Manual is being brought out incorporating some changes in the Works Procedure along with increased delegation of powers to officers of CPWD along with the provisions incorporating suggestions made by various Field Units during the Brain storming sessions to amend/ modify procedures and to make them more efficient, project oriented and for speedy deliverance of works with very good quality.

In this edition, a new section related to e-Tendering has also been introduced incorporating the system, procedure & guidelines for efficient implementation by all units. This self contained publication shall be of great help and guidance to the officers engaged in planning and execution of public works.

I would like to express my thanks to Shri P. K. Gupta, ADG(TD) for his effectiveness and also appreciate the sincere effort of Er. A. K. Sharma, CE(CSQ) and his entire dedicated team with whose efforts the Manual has been updated now.

The downloadable copy of new 'CPWD Works Manual - 2012' shall also be uploaded on CPWD website (www.cpwd.gov.in) very soon and its soft copy shall be updated on regular basis to facilitate planning and field officers of department.

Place : New Delhi


(CHANDRA SHEKHAR PRASAD)
DIRECTOR GENERAL, C.P.W.D.

PREFACE

The Central Public Works Department (CPWD) is a 157 year old institution and is the principal agency of the Government of India responsible for creating assets and providing comprehensive services including planning, designing, construction and maintenance of office & residential buildings as well as other structures of various ministries and departments of Government of India and other autonomous bodies and public sector enterprises. Its activities are spread throughout the length and breadth of the country.

The field of construction is dynamic and is undergoing fast changes both in terms of technology and in contract management techniques. To maintain proper pace with such changes and to provide consistent work procedure in CPWD throughout the country, updation / revision of works manual is necessary. This revision of CPWD Works Manual incorporates various circulars issued by the department and incorporates suggestions received from field units spread across the country during the brain storming sessions in 2010.

A new chapter on e-tendering has been introduced in CPWD works manual in an effort to bring in more transparency in its functioning and establish a more efficient and transparent tendering process ensuring legal authenticity and assurance level as in the traditional tendering system.

To simplify the work procedure in CPWD, concept of stage payment in running bills, provision of Dispute resolution committee and a concurrent list for the specialized works/jobs have been introduced in works manual apart from delegating powers to CE for appointment of private architect/consultants etc.

I am grateful to Shri C. S. Prasad, Director General, CPWD for reposing trust in me to undertake this work and express my deep appreciation to Shri A. K. Sharma, CE (CSQ) Shri V. K. Malik, Shri Sunil Kumar Sharma, SE(C&M), Shri Nilabh Gupta, EE(Manual), Shri Yogendra Goel, AE(Manual) and various other officers/staffs of CSQ unit who made their sincere efforts to update the manual by incorporating all the circulars issued till date.

Though every effort has been made earnestly to incorporate all the changes in the works manual. However, if any discrepancy is found, it may be brought to the notice of Chief Engineer (CSQ).

Place: New Delhi
Dated: Dec. 2011



P.K. GUPTA
ADG(TD), CPWD

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Vision and Mission Statements of CPWD

(Added as per OM/MAN/156)

VISION STATEMENT

EXCELLENCE IN PUBLIC WORKS

MISSION STATEMENT

1. Sound Planning and Design

- All building norms and specifications to be standardized.
- Architectural and structural design to be undertaken in-house as far as possible.
- Detailed planning of all services to make the buildings operational in all respects.
- Architectural and structural designs to be coordinated to evolve an efficient building system compliant with latest Indian Standards.

2. Engineered Construction

- Standardization of different building elements including their pre-fabrication, mechanization in construction, use of innovative materials and technologies adopting clean development mechanism resulting in conservation of energy and natural resources.

3. Effective Maintenance

- To preserve and maintain buildings and services in good operating condition.
- To improve the specifications depending upon the development that is taking place in the built environment.

4. Benchmarking

- Updation of Specifications and standards for public works including Delhi Schedule of Rates, Analysis of Rates, Works and Maintenance Manual on regular basis.

5. Capacity Building

- Updation of technical knowledge of engineers, architects by effective training and participation in seminars, workshops etc.
- Effective training to develop managerial skills and handling public grievances so that engineers, architects and horticulturists become development managers for tomorrow.
- Target oriented training to workers on contemporary skills and behavioral science to improve service delivery mechanism.

6. Public Private Partnership

- To undertake contract or concession agreement with private sector company for delivering General Pool Residential Accommodation and General Pool Office Accommodation on payment of user charges (1) to increase the stock of dwelling units thereby providing housing to government employees and (2) to increase the office space thereby providing comfortable working environment to government employees.

7. Manpower planning

- To provide the manpower of CPWD with professional environment, excellent working opportunities and state of art technology.
- To provide performance and ability based approach to career development as per policy of the Government.

8. Transparency in management of works

- e-tendering shall be introduced.
- Effective use of websites in discharge of regulatory, enforcement and the functions shall be introduced through integrated computerization.
- Web based work progress monitoring system shall be introduced.

CHAPTER I

WORKS

SECTION 1

CLASSIFICATION OF FUNCTIONS OF CPWD

1.1 Functions

The Central PWD is the agency of the Central Government operating throughout the country for:

- (i) Planning, construction, maintenance and repairs of all works and buildings financed from Civil Works Budget. These do not include works pertaining to certain departments and Ministries who have their own engineering wing, or who have been granted special exemption, such as the Atomic Energy Department, Central Water Commission, Department of Posts, All India Radio, Department of Space, and Railway. The Department executes the works of Ministries of Defence, External Affairs (for works outside India), Shipping and Surface Transport (Roads Wing), as and when asked for.
- (ii) Estate work at places where the Directorate of Estates does not have its offices.
- (iii) Valuation of properties/assets under Income Tax Act as and when requested by Income Tax department.
- (iv) Assessment of rent for hiring of properties and assessment of value of properties for purchase by various Ministries/Department of Govt. of India.
- (v) Advising Govt. of India on various Technical matters relating to public works.

1.2 Procedures for Execution of works by various departments/Ministries shall be in accordance with provisions of GFR-2005 (Annexure)

1.3 Classification of works

The works undertaken by CPWD are classified as follows:

1.3.1 Original Works

These shall mean:

- (i) all new constructions,
- (ii) all types of additions, alterations and/or special repairs to newly acquired assets, abandoned or damaged assets that are required to make them workable .
- (iii) major replacements or remodeling of a portion of an existing structure or installation or other works, which results in a genuine increase in the life and value of the property.

1.3.2 Repairs and maintenance works

These cover operations undertaken to maintain the assets in a proper condition and include maintenance and operation of all services. The "Repairs" are further classified into two categories as follows:

- (i) **Annual repairs:** These cover the routine as well as yearly operation and maintenance works.
- (ii) **Special repairs:** These cover major repair or replacement or remodeling of a portion of an existing structure or installation or other works due to major breakdowns, or deterioration, or periodic renewal, which do not result in a genuine increase in the value of the property.

1.4 Classification as per funding of works

- (1) The funding of any work falls under one of the following categories:

1.4.1 Budgeted works: These are works that are undertaken under an outlay that is provided wholly from the financial estimates and accounts of the Union of India that are laid before and voted by both the Houses of Parliament.

1.4.2 Deposit works: These works are undertaken at the discretion of the department. Outlay for these works is either provided from Government grants to autonomous or semi-autonomous bodies or institutions through their Administrative Ministries, or is financed from non-Government sources wholly or in part from:

- (i) funds of a public nature, but not included in the financial estimates and accounts of the Union of India,
- (ii) contributions from the public.

(2) Provisions under section 3 may be referred to for further details of 'Deposit works'.

Annexure
(Refer Para 1.2)
Extract of GFR 2005

Rule 123. Original Works means all new constructions, additions and alterations to existing works, special repairs to newly purchased or previously abandoned buildings or structures, including remodeling or replacement.

Repair works means works undertaken to maintain building and fixtures.

Rule 124. Administrative control of works includes:

- (i) assumption of full responsibility for construction, maintenance and upkeep;
- (ii) proper utilization of buildings and allied works;
- (iii) provision of funds for execution of these functions.

Rule 125. Powers to sanction works : The powers delegated to various subordinate authorities to accord administrative approval, sanction expenditure and re-appropriate funds for works are regulated by the Delegation of Financial Powers Rules, 1978, and other orders contained in the respective departmental regulations.

Rule 126.

- (1) A Ministry or Department at its discretion may directly execute repair works estimated to cost upto Rupees ten Lakhs after following due procedure indicated in **Rule 132**.
- (2) A Ministry or Department may, at its discretion, assign repair works estimated to cost above Rupees ten Lakhs and upto Rupees thirty Lakhs to any Public Works Organisation, which includes State Public Works Divisions, other Central Government organisations authorized to carry out civil or electrical works such as Central Public Works Department(CPWD), Military Engineering Service (MES), Border Roads Organisation etc. or Public Sector Undertakings set up by the Central or State Government to carryout civil or electrical works.
- (3) All original works costing upto Rupees ten Lakhs may be assigned by the Ministry or Department concerned to a Public Works Organisations as defined in **Rule 126(2)**.
- (4) All original works estimated to cost above Rupees ten Lakhs and repair works estimated to cost above Rupees thirty Lakhs may be got executed through a Public Works Organisations as defined in Rule 126(2) after consultation with the Ministry of Urban Development.

Rule 127. Work under the administrative control of the Public Works Departments : Works not specifically allotted to any Ministry or Department shall be included in the Grants for Civil Works to be administered by Central Public Works Department. No such work may be financed partly from funds provided in departmental budget and partly from the budget for Civil works as mentioned above.

Rule 128. General Rules: Subject to the observance of these general rules, the initiation, authorization and execution of works allotted to a particular Ministry or Department shall be regulated by detailed rules and orders contained in the respective departmental regulations and by other special orders applicable to them.

Rule 129.

- (1) No works shall be commenced or liability incurred in connection with it until,-
 - (i) administrative approval has been obtained from the appropriate authority in each case;
 - (ii) sanction to incur expenditure has been obtained from the competent authority;
 - (iii) a properly detailed design has been sanctioned;

- (iv) estimates containing the detailed specifications and quantities of various items have been prepared on the basis of the Schedule of Rates maintained by CPWD or other Public Works Organisations and sanctioned;
 - (v) funds to cover the charge during the year have been provided by competent authority;
 - (vi) tenders invited and processed in accordance with rules;
 - (vii) a Work Order issued.
- (2) On grounds of urgency or otherwise, if it becomes necessary to carry out a work or incur a liability under circumstances when the provisions set out under sub rule 1 of rule 129 cannot be complied with, the concerned executive officer may do so on his own judgement and responsibility. Simultaneously, he should initiate action to obtain approval from the competent authority and also to intimate the concerned Accounts Officer.
- (3) Any development of a project considered necessary while a work is in progress, which is not contingent on the execution of work as first sanctioned, shall have to be covered by a supplementary estimate.

Rule 130. For purpose of approval and sanctions, a group of works which form one project, shall be considered as one work. The necessity for obtaining approval or sanction of higher authority to a project, which consists of such a group of works should not be avoided because of the fact that the cost of each particular work in the project is within the powers of such approval or sanction of a lower authority. This provision, however, shall not apply in case of works of similar nature, which are independent of each other.

Rule 131. Any anticipated or actual savings from a sanctioned estimate for a definite project, shall not, without special authority, be applied to carry out additional work not contemplated in the original project.

Rule 132. Procedure for Execution of Works : The broad procedure to be followed by a Ministry or Department for execution of works under its own arrangements shall be as under:-

- (i) the detailed procedure relating to expenditure on such works shall be prescribed by departmental regulations framed in consultation with the Accounts Officer, generally based on the procedures and the principles underlying the financial and accounting rules prescribed for similar works carried out by the Central Public Works Department(CPWD);
- (ii) preparation of detailed design and estimates shall precede any sanction for works;
- (iii) no work shall be undertaken before issue of Administrative Approval and Expenditure Sanction by the competent Authority on the basis of estimates framed;
- (iv) open tenders will be called for works costing Rupees five lakhs to Rupees ten lakhs;
- (v) limited tenders will be called for works costing less than Rupees five lakhs;
- (vi) execution of Contract Agreement or Award of work should be done before commencement of the work;
- (vii) final payment for work shall be made only on the personal certificate of the officer-in-charge of execution of the work in the format given below:

“ I....., Executing Officer of (Name of the Work), am personally satisfied that the work has been executed as per the specifications laid down in the Contract agreement and the workmanship is upto the standards followed in the Industry.”

Rule 133. For original works and repair works entrusted to a ‘Public Works Organisation’ as defined in Rule 126(2), the administrative approval and expenditure sanction shall be accorded and funds allotted by the concerned authority under these rules and in accordance with the Delegation of Financial Power Rules 1978. The Public Works Organisation shall then execute the work entrusted to it in accordance with the rules and procedures prescribed in that organization.

Rule 134. Review of Projects : After a project costing Rupees ten crores or above is approved, the Administrative Ministry or Department will set up a Review Committee consisting of a representative each from the Administrative Ministry, Finance (Internal Finance Wing) and the Executing Agency to review the progress of the work. The Review Committee shall have the powers to accept variation within 10% of the approved estimates. For works costing less than Rupees ten crores, it will be at the discretion of the Administrative Ministry / Department to set up a Review Committee on the above lines.

SECTION 2

STAGES FOR EXECUTION OF WORKS

2.1 Pre-requisites for execution of works

- (1) There are four main stages as follows in the execution of a work:
 - (i) Administrative approval
 - (ii) Expenditure sanction
 - (iii) Technical sanction
 - (iv) Availability of funds.
- (2) No work should normally be commenced or any liability thereon incurred until an administrative approval has been obtained, a properly prepared detailed estimate has been technically sanctioned and where necessary expenditure sanction has been accorded and allotment of funds made.

2.2 Works of inescapable nature (Ref. rule 129 (2) of GFR-2005) *(Modified as per OM/MAN/180)*

Various works of inescapable nature can be classified under two categories as under:-

Emergency Works:-

Emergency works are those kinds of works which arise all of sudden and are inescapable requiring immediate action that cannot brook any delay. Emergency works may be taken up by CPWD under following situations:-

- (i) Earth quakes
- (ii) Blizzards
- (iii) Hurricanes/lightening
- (iv) Tornados
- (v) Tsunami waves
- (vi) Floods
- (vii) Explosions/Arson
- (viii) Fire
- (ix) War
- (x) Sudden collapse of building, bridge
- (xi) Terrorist attack
- (xii) Mass strike affecting civic services such as water, sewer and power supply
- (xiii) Ceremonial functions at the time of death of President/Ex President, Vice President/Ex Vice President and Prime Minister/Ex Prime Minister.
- (xiv) Spread of epidemic
- (xv) Works required to maintain law and order in abnormal situations
- (xvi) Restoration of services in Parliament, President/ Vice President House/ Prime Minister House and other Buildings of National importance and prestige.
- (xvii) Restoration of services in case of accidents
- (xviii) Any work declared emergent by Chief Engineer in case the interest of work so demands

In case of emergency, the work may be executed in absence of any or all of the above mentioned pre-requisites. On such aforesaid situations or on receipt of such written order of the Chief Engineer in case any work declared emergent by him, the Executive Engineer/Assistant Engineer shall proceed to carry out the necessary work, and shall immediately intimate the AO concerned that he is incurring such a liability, stating therein the approximate amount of liability that he is likely to incur. The Executive Engineer/ Assistant Engineer should obtain the administrative approval and expenditure sanction and accord of technical sanction of the competent authority to regularise the liability as early as possible.

Urgent Works:-

The urgent works need not to be treated as par with the works to be taken up under emergency situations. Urgent works may be defined as those kinds of works which requires fast start/completion within compressed schedule and are to be taken up on top most priority at the instructions of competent authority. Under such situation availability of funds needs to be ensured before taking up execution of works.

Urgent works can be taken up at specific request of user department with prior in principle approval of CPWD officers competent to approve the work order to be issued to take up such works if work is to be executed through work order. Chief Engineer shall be final authority to approve the execution of urgent works.

The financial powers under emergency and urgent situation should be exercised with great caution after watching the financial Interest of Government.

2.3 Administrative approval

“Administrative approval” is the communication of formal acceptance of the proposals by the competent authority of the Administrative Ministry/Department requiring the work.

2.3.1 Accord of administrative approval

- (a) The concurrence of the competent authority of the Administrative Ministry/Department requisitioning the work should be obtained to the Preliminary Estimate for the work. However, no such concurrence is required for normal repairs and maintenance works.
- (b) The Preliminary Estimate should be framed or countersigned by the authority as specified in para 4.1.4 of the Manual, and sent in triplicate to the Administrative Ministry/Department requisitioning the work. The requisitioning authority shall be requested to return one copy of the estimate, duly countersigned in token of acceptance, while communicating the administrative approval.
- (c) One copy of the administrative approval shall be endorsed to the concerned Accounts Officer.

2.3.2 Powers for accord of administrative approval

- (a) Various Ministries/Authorities who get their works executed through the CPWD, have been delegated specific powers to accord administrative approval to the works.
- (b) The amount of administrative approval accorded, in all cases, shall include departmental charges, wherever it is leviable.
- (c) In case of estimates for residential accommodation, it has to be seen by the authority concerned before the issue of administrative approval that the scale of accommodation provided for therein does not exceed the one approved by the Ministry of Finance.
- (d) If the estimated cost of a work exceeds the powers of any officer, the administrative approval of the Government of India in the Administrative Ministry must be obtained.
- (e) The Director General (Works) and Additional Directors General have been delegated powers as in Appendix-I to accord administrative approval for construction of houses for CPWD project staff in major projects, as well as for CPWD maintenance staff.

2.3.3 Approval to work of additions and alterations

- (a) No authority, with the exception indicated in sub-para (b) below, is empowered to accord administrative approval to an estimate of additions and alterations to a building, if the expenditure contemplated would result in increase of the capital cost of the building to a figure which is beyond the authority in question entitled to accord the administrative approval in case of a new residence.
- (b) The Director General (Works), Additional Directors General, Chief Engineers, Superintending Engineers and Executive Engineers may accord administrative approval, as per powers delegated

to them in Appendix-I, to estimates for minor works and additions and alterations to the existing Government-owned residential buildings irrespective of the capital cost of the buildings subject to the conditions, that:

- (i) The powers delegated to them will not apply to residential units occupied by Ministers/Members of Parliament
- (ii) The prescribed scale of amenities in residential building shall not be exceeded.
- (iii) The prescribed specifications of the amenities shall not be exceeded.
- (iv) The additions and alterations to be sanctioned shall be of the general type. All such cases where there are no precedents, or where there are likely to be repercussions should be referred to the Ministry of Urban Development.
- (v) The funds are available in the budget.

2.3.4 Material deviations over original Sanctioned Scheme.

Material deviations that significantly alter the scope of work from the original sanction should not be made without the approval of the authority that accorded administrative approval to the work, even though the cost of the same may be covered by savings on other items.

2.3.5 Excess over administrative approval

Excess up to 10% of the amount of the administrative approval may be authorised by Officers of the CPWD, up to their respective powers of technical sanction. In case it exceeds this limit, a revised administrative approval must be obtained from the authority competent to approve the cost so enhanced. No revised administrative approval is, however, necessary if the excess is covered by the requisite expenditure sanction.

2.4 Expenditure sanction

- (a) Expenditure sanction is to be accorded by the Administrative Ministry/Department to indicate that funds for the project/work have been provided, and liability can be incurred.
- (b) An order of appropriation or re-appropriation of funds shall operate as sanction to incur expenditure on minor works, and it shall not be necessary to issue any formal order conveying sanction to incur expenditure in such cases.

2.4.1 Powers for accord of expenditure sanction

- (a) Ministries/Departments of the Central Government may issue expenditure sanction in respect of major works costing up to a specified limit without consulting the Ministry of Finance.
- (b) In the case of works under the Administrative control of National Capital Territory of Delhi, necessary expenditure sanction will be issued by the Lt. Governor, Delhi after obtaining concurrence of the Delhi State Division of the Ministry of Finance, where necessary.
- (c) The Director General (Works) and Additional Directors General have been delegated powers as in Appendix-I to accord expenditure sanction for construction of houses for CPWD project staff in major projects, and for CPWD maintenance staff.

2.4.2 Excess over expenditure sanction

Expenditure sanction can be exceeded upto 10%, beyond which revised Expenditure Sanction shall be necessary. This should be applied for as soon as such excess is foreseen.

2.5 Technical sanction

A "technical sanction" amounts to a guarantee that the proposals are technically sound, and that the estimates are accurately prepared and are based on adequate data.

2.5.1 Accord of technical sanction

- (a) After receipt of administrative approval and expenditure sanction, detailed estimates are required to be prepared for technical sanction. The technical sanction should be accorded by the competent authority before a work is taken in hand. In case of revised estimates, it is not necessary to wait for the revised administrative approval or the revised expenditure sanction to accord revised technical sanction.
- (b) A copy of the technical sanction for the building work should also be endorsed to the concerned Senior Architect, Superintending Engineer (Elect)/Executive Engineer(elect) as well as the Director/Deputy Director of Horticulture for initiating action at the appropriate time on electrical, air conditioning, horticulture and other works. Similarly, copies of Technical Sanction of Estimate for Horticulture works shall also be forwarded to Senior Architect and CE(C)/SE(C)/EE(C) as the case may be. The municipal/Local Bodies and Electrical Supply Companies should also be approached by the Executive Engineer, Civil and Electrical, well in time for providing External Services including power supply.
- (c) Before an estimate is technically sanctioned, the following shall be desirable:
 - (i) Detailed architectural drawings and specifications.
 - (ii) Preliminary structural drawings for foundations
 - (iii) Preliminary structural drawings of superstructure at least upto slab at level 2
 - (iv) Preliminary drawings for internal and external services.
- (d) The authority competent to accord such sanction shall ensure that the design and specification etc., adopted in the detailed estimate are adequate enough for the building to last till its desired life. In the 'Design and Scope' column of the estimate, it shall be specifically mentioned that, 'Under normal use and maintenance, the building is expected to have an economic life of years.'
- (e) For various types of buildings, the economic life shall be taken as below:

(i) Monumental structures	100 years
(ii) RCC framed structures	75 years
(iii) Load bearing structures	55 years
(iv) Semi permanent structures	30 years

Economic life of various internal Services/fixtures including electric wiring, water supply distribution system may vary from 15 to 25 years depending upon the geographical location, type of the services and its uses.
- (f) No estimate should be technically sanctioned unless the proforma at Appendix – 2 is submitted along with the estimate to enable the competent authority to see that the detailed estimate prepared takes into account all aspects of planning and that no point has escaped notice.
- (g) In case of work for which tenders are called on "Design and construct" basis, technical sanction of such works may be accorded only on finalization of structural drawings, services drawings and other detail on submission of the same by the contractor. However it would be necessary that all the Architectural and structural data/parameters, details of functional requirement and complete specifications including preliminary drawings are finalized before the call of tenders on "Design and construct" basis.
- (h) For Technical sanction, detailed estimate shall be prepared based on applicable schedule of rates. Market rates shall be followed for the items not covered under schedule of rates. Effect of prevailing cost index over the hypothetical cost Index of schedule of rate should be taken on the amount of Detailed estimate for items for which rates are based on Schedule of rate. Estimate should be technically sanctioned for the amount inclusive of effect of Cost Index.
- (i) The powers delegated to officers of the Central PWD for accord of technical sanction are given in Appendix-1. These amounts are exclusive of departmental charges. The powers to accord technical sanction to revised estimates shall be the same as for the original estimates.

2.5.2 Deviation in Technical Sanction

- (1) The technical sanction can be exceeded upto 10% beyond which revised 'technical sanction' shall be necessary.
- (2) Similarly, if subsequent to the accord of technical sanction, material structural alterations are contemplated, the orders of the authority which sanctioned the estimate technically should be obtained, even though no additional expenditure may be involved due to such alterations.

2.5.3 Packages for accord of technical sanction

- (i) The authority of CPWD who submitted the preliminary estimate to client should decide the project in to packages for inviting tenders.
- (ii) The authority who decides the package will also decide the manner in which technical sanction(s) (one or many under each package) is/are to be accorded.
- (iii) In event the authority identifying the package decides that different authorities are to accord technical sanction for different components, he will intimate the same to all concerned authorities duly indicating the time frame. The technical sanctioning authorities, after according technical sanction for respective components, submit the detailed estimates alongwith their proposal for special conditions to be incorporated in NIT to authority competent to issue the NIT.

2.6 Appropriations and re-appropriations

- (1) Appropriation means assignment to meet specified expenditure of funds included in a primary unit of appropriation. Re-appropriation means the transfer of funds from one unit of appropriation to another under such unit. It is a fundamental principle that no outlay on a work shall be incurred without funds having been allotted for it by appropriation or re-appropriation. In exceptional cases, where expenditure is authorised in anticipation of the allotment of funds or in excess of the funds allotted for the purpose, the authorisation must be followed by a formal allotment of funds to the extent required.
- (2) Allotment of funds is intended to cover all the charges including the liabilities of past years to be paid during the year or to be adjusted in the accounts of it. It is operative until the close of the financial year. Any unspent balance lapses and is not available for utilisation in the following year, but Government will ordinarily endeavour to include any anticipated lapse in the demand for the following year. The financial year closes on 31st March, and after that date all cash and stock transactions are treated as pertaining to the following year.
- (3) However, the Transfer Entry Book and the stock accounts should be kept open for transfer entries relating to rectification of errors and settlement of outstanding. These accounts should be closed on the 20th May or on such other date, as may be prescribed by the Accountant General.

Note:

- (i) If any adjustments in accounts have been purposely deferred till the close of the accounts of the year, it is permissible to effect these after 31st March in the same way as adjustments in rectification of error noticed after that date.
- (ii) Accounts of transaction with other Governments, Railways, Posts and Telegraphs and Defence must be settled completely and communicated to the Accountant General by the 12th April, at the latest.
- (4) An appropriation or re-appropriation can be authorised at any time before, but not after the expiry of financial year.
- (5) The procedure relating to the preparation of demand for grants and re-appropriation of funds, distribution of funds and budget matters generally is laid down by the Budget Division of Ministry of Finance in their divisional budget circular.
- (6) The demands for new capital (Construction) works/works in progress chargeable to the major head "4059 Capital Outlay on Public Works" and Functional Heads and Major Head "4216 Capital

Outlay on Housing” will be forwarded by the Director General (Works)/Chief Engineers to Ministry of Urban Development by 31st October every year. These should be confined to those works only that have received expenditure sanction wherever such sanction is required.

- (7) For Major/Minor works and Maintenance and Repairs works chargeable to the Major head “2059 Public Works” and Minor Works and Maintenance and Repairs works chargeable to the Major Head “2216 Housing” the demand should be in lump sum only under different minor heads, the data as desired by Ministry of Urban Development justifying the total demands put forward for each of sub head should be furnished in the supplementary statements to be appended to the schedule.

2.6.1 Powers for appropriation and re-appropriation

The powers to appropriate and re-appropriate funds to meet the expenditure on public works are vested with the Director General (Works)/Chief Engineers.

2.7 ‘Pre-construction’ and ‘construction’ stages

The execution of a project/work has two stages, viz. the ‘Pre-construction stage’ and the ‘Construction stage’. The following activities are involved in these stages:

- (1) Pre-construction stage: –
 - (i) Requisition from the client.
 - (ii) Preparation of site/soil data, and assessment of feasibility of services such as water supply, electricity, drainage and sewerage etc.
 - (iii) Discussions with the client to assess and appreciate their requirements, incorporation of the same and preparation of preliminary plans.
 - (iv) Approval of the preliminary plans by the client.
 - (v) Preparation of preliminary estimate.
 - (vi) Approval of the preliminary estimate by the client.
 - (vii) Preparation of architectural drawings and review with client and modification of drawings, if required.
 - (viii) Preparation and submission of the plans to the Local Bodies for their approval.
 - (ix) Approval of plans by the Local Bodies.
 - (x) Preparation of preliminary structural sizes.
 - (xi) Preparation of services drawings.
 - (xii) Preparation of detailed working drawings.
 - (xiii) Preparation of detailed estimates for buildings and all services (civil, electrical and mechanical).
 - (xiv) Preparation of NIT and call of pre-qualification applications, wherever applicable.
 - (xv) Preparation of structural drawings.
 - (xvi) Selection of contractors from the pre-qualification applications wherever applicable.
 - (xvii) Call of tenders and pre-bid conference wherever applicable.
 - (xviii) Receipt/Opening of tenders.
 - (xix) Decision on tender and award of work.
- (2) Construction stage:—
 - (i) Execution of work and contract management.
 - (ii) Completion of work.
 - (iii) Testing and commissioning.
 - (iv) Completion certificate from Local Body including fire clearance..
 - (v) Handing over to client.
 - (vi) Settlement of accounts.

2.7.1 Co-ordination of works

2.7.1.1 Pre-construction stage

- (1) The co-ordination upto the stage of preparation of detailed estimate/NIT for execution of a project/ work shall be done by the Senior Architect/Chief Architect handling the project. The preparation of lay out, preliminary and detailed working drawings of buildings shall be done by the Senior Architect/ Chief Architect in consultation with the client Ministry/ Department as well as with the Superintending Engineer (Planning), civil and electrical, after obtaining their proposals and requirements. For this purpose, the Senior Architect/ Chief Architect shall send advance copies of the drawings to all the concerned officers and call for their comments. The detailed working drawings shall be finalised by him after taking into account such comments/data into consideration, and after further mutual discussions as may be necessary.
- (2) These drawings shall be sufficiently detailed to enable the field officers to relate it with the schedule of items for execution of work without any ambiguity or lack of clarity.

In case of works where architectural input is not required, such as road work, the Executive Engineer (Planning) in Circle/ Superintending Engineer (Planning) in Zone shall co-ordinate the work upto the NIT stage.

2.7.1.2 Construction stage

- (1) The co-ordination during the construction stage shall be done by the concerned Superintending Engineer (Civil) or by the Nodal Officer so appointed by the Chief Engineer from any one of the three disciplines, namely, civil, electrical and architecture. He shall hold regular co-ordination meetings with the concerned officers of the four disciplines (including horticulture) to review the progress of the work, and to sort out hindrances or bottlenecks wherever these occur. He shall also invite the client's representative to participate in the co-ordination meetings for regular appraisal of progress of work, appreciation of client's needs and desire, and to sort out inter-departmental issues, if any. He shall issue regular minutes of such meetings to all concerned.
- (2) The Executive Engineers, Civil and Electrical, shall work in close co-ordination to ensure that all the preceding activities involving work of other disciplines are completed well in time before the subsequent activities as per the program of work are taken up. Activities that may conflict or cause avoidable damage to the work already done shall be avoided by proper planning.
- (3) Any change from the provisions in the architectural drawings that becomes necessary during the execution of work due to any practical difficulty etc., shall be brought to the notice of the Senior Architect/ Chief Architect and his approval obtained.

2.7.1.3 Local Bodies

- (1) In all cases, where the Central PWD has to depend upon the local Municipal and other authorities for the provision of external services, viz. roads, drains, water supply mains, sewerage, electric mains, etc. there should be proper co-ordination between the Central PWD Officers concerned with the project and Municipal and other authorities. To avoid any infringement of building and health bye-laws of local Municipal Committee/ Corporation, the building plans should be prepared by Senior Architects keeping in view the provisions and requirements of these bye-laws. The Executive Engineer shall furnish the services plans to Senior Architect. The Senior Architect will submit through the concerned Executive Engineer (Civil) the complete plans to such local bodies for their approval prior to commencement of the work.
- (2) The Senior Architect shall pursue with the Local Bodies in close co-ordination with the Executive Engineer (Civil) for obtaining the necessary clearances/approvals.
- (3) On commencement of work, the local bodies should also be moved simultaneously for provision of ancillary services. Provision for such external services, wherever required to be provided for by the Department should invariably be made in the main project estimate.

2.7.1.4 Horticulture works

When the building work has sufficiently advanced, the concerned DD(H)/AD(H) should initiate action for horticulture works.

2.8 Completion of Works

- (1) The administrative Department/Ministry shall be kept informed at regular intervals about the stages of progress of work so that the client's observations, if any, could be responded to before the work is completed.
- (2) On completion of the work, the Administrative Department/Ministry should be intimated of the same and formal handing over arranged in writing. Reasonable advance intimation of completion of the work should be given to the concerned Department to enable them to make arrangements for taking over.
- (3) Completion plans of the project, including all services, should be prepared and submitted along with the completion report showing the expenditure incurred on the project.
- (4) The Completion Report in Form CPWA 45/44, as the case may be, should be prepared from the Works Registers indicating the expenditure incurred till the date of completion and passing the excess, if any, as it may be within the competence of CPWD Officers.
- (5) The Executive Engineer in charge of the Building work should maintain a register called "Consolidated Register of Works" so as to exhibit the total cost of the project including all components viz., building, water supply, sanitary installation, electrical installations, etc. For this purpose, the concerned Divisional units, on completion of their portion of the work will intimate the audited figures of expenditure to the building Division through a Completion Report, and get the excess, if any, passed. The overall responsibility for obtaining the revised administrative approval and expenditure sanction for the project as a whole, wherever required, will rest with the Executive Engineer (Civil).
- (6) Subsequent to the computerisation of accounts and Progress Monitoring System developed by the NIC in co-ordination with CPWD, the actual expenditure figures from the Monthly Accounts that are entered through NIJ (Nirman Info Jyothi) are being uploaded every month by the individual Divisional units to the Central Server. The Server automatically consolidates the actual expenditure figures of the various Divisional units technical sanction wise under the respective administrative approvals of the works. Thus the consolidated expenditure figures under each administrative approval are available at the CPWD website. The Executive Engineer (Civil) shall, therefore, watch the expenditure figures from the website for taking action as above.

SECTION 3

DEPOSIT WORKS

3.1 Definition

- (1) The term 'Deposit Works' is applied to works of construction or repairs and maintenance, the cost of which is met out of Government grants to autonomous or semi-autonomous bodies or institutions through their Administrative Ministries, or is financed from non-Government sources wholly or partly from:-
 - (a) Funds of public nature, but not included in the financial estimates and accounts of the Union of India.
 - (b) Contributions from the public.The funds may either be deposited in cash or otherwise placed at the disposal of the Divisional Officer.
- (2) Where a work is to be carried out partly from funds provided in the financial estimates of the Department and partly from funds of the foregoing nature, the contribution should be considered as a lump sum in addition to the Government grant.

3.2 Taking up of deposit works

- (1) The work shall be executed in accordance with the procedures laid down for the Central works. However, the norms regarding plinth areas and specifications of the client department may be adopted even if such norms are at variance with CPWD norms. In such cases the client should be intimated before hand about the government norms and financial repercussions.
- (2) The Central PWD should normally decline to undertake as deposit work the maintenance of buildings that were not originally constructed by CPWD, and maintenance of mechanical/electrical equipments that were not originally procured and installed by CPWD. Maintenance works of such buildings and installations may, however, be undertaken if it is in the interest of Government to do so, e.g. when the Body or Institution is financed largely from Government grants and defects in construction or maintenance might lead to demand for further financial assistance from the Government, or where the buildings concerned are Government buildings, which, if and when vacated by the Body or Institution occupying the same, could be used for Government purposes or leased at a profit.

3.3 Powers to undertake deposit works

- (1) The officers of the Central P.W.D. have been delegated powers to undertake deposit works as shown in Appendix-I. No deposit work should be undertaken without the prior approval of the competent authority.
- (2) Before acceptance of any deposit by the Executive Engineer, it is essential that an estimate should be sent to the client Department/Body/Institution after fully ascertaining all necessary site details, technical feasibility, topographical details, ownership of land etc. In case any preliminary works like soil testing, site survey/contour etc., are to be done before hand, a small estimate may be sent to the client and deposits received.
- (3) The Chief Engineers in CPWD are fully authorised to accept/undertake deposit works of Food Corporation of India and Indian Council of Agricultural Research, irrespective of their monetary value.

3.4 Realization of deposits

- (1) Whenever a deposit work is to be undertaken, the deposit should be realised before any liability is incurred on the work. 1% of the anticipated project cost should be realised before preparation of

preliminary estimates. In addition to the outlay on the work in the preliminary estimate, departmental charges at such percentages as are prescribed by the Government of India from time to time shall also be realized in advance. No interest will be allowed on sums deposited from any source, including private contributions.

- (2) In the case of deposit works of autonomous bodies which are financed entirely from Government grants, and from whom receipt of deposits is assured, 33-1/3% of the estimated cost of the work may be got deposited in advance. Thereafter, the expenditure incurred may be got reimbursed through monthly bills simultaneously with rendering of monthly accounts on the progress of work. The deposit of 33-1/3% obtained as the first instalment should be retained for adjustment against the last portion of the estimated expenditure.
- (3) Where delays are experienced in obtaining deposits, and where the expenditure has to be incurred out of the 33-1/3% reserve to keep the works going, the matter should be brought to the notice of Superintending Engineer/Chief Engineer promptly for taking up the matter with the client. No expenditure shall be incurred on deposit works out of CPWD grants and vice-versa.
- (4) To enable the client to provide additional funds in time whenever the expenditure is anticipated to exceed the preliminary estimate figure, a revised preliminary estimate should be submitted to the client well in time during the execution of work.
- (5) Where a client has defaulted in making the required deposit, and where the outstanding amount exceeds Rs.10 lakhs, or where the works outlay is predominantly for purchase of capital equipments and machineries, the entire deposit including departmental charges should be realized in advance.
- (6) In no case deposits received from a client department for its work should be diverted to other works.
- (7) The client is to be clearly made to understand that the Central PWD does not bind itself to complete the work within the amount of the preliminary estimate, and that they should agree to pay for the excess expenditure that may occur. An acknowledgement of this clear understanding shall be obtained from the client before the deposit work is taken in hand.
- (8) The Executive Engineer should ensure that at any time during the progress of the work, the expenditure is not more than the deposits received for the work. Where the Executive Engineer is doubtful about the timely receipt of deposits, he should notify the client that if further deposit is not received, the work would be stopped, and any contractual liability arising out of such stoppage of work will be borne by the client. He should also bring this to the notice of his higher officers for taking up the matter with the client.
- (9) While submitting preliminary estimates for deposit works for obtaining administrative approval and expenditure sanction, a copy of the terms and conditions under which the works would be taken up by CPWD, as given in Appendix 3, should also be enclosed.

3.5 Transfer of deposits

It is incumbent on the part of the Civil/Electrical/Horticulture Divisions to transfer to the concerned Electrical/Civil/ Horticulture Divisions a part of the same in proportion of the E&M/Civil/ Horticulture works to the whole work as per the preliminary estimate. This transfer of deposit should be made at an appropriate stage so that at no stage the progress of work is hampered.

3.6 Execution of deposit works and settlement of accounts

- (1) With regard to design, estimate and execution of work, instructions as contained above should be followed. The scope of work should not be altered without written permission of the client.
- (2) The Executive Engineers shall send to their Accounts Officers every month the Statement of Expenditure in Form CPWA 65A along with the Schedule of Deposit Works in Form CPWA 65, for transmission to the concerned client after verification. These should indicate against each work,

the amount of the estimate, the total deposit received and the expenditure incurred, both during the month and up to date. The Executive Engineers should invariably endorse a copy of this Statement to the concerned client.

- (3) The Executive Engineers should regularly send these statements to enable the adjustment of outstanding amounts in the books of the clients, and to avoid difficulties in reconciliation of accounts relating to deposit works after passage of time.
- (4) The Executive Engineers should also send a quarterly report to the clients showing the amount deposited and the expenditure incurred against each of the works for settlement of accounts.
- (5) It is necessary that the Executive Engineers settle their accounts against the deposit works expeditiously so that the amount in the books of the audit as well as the client does not remain unsettled for long.

SECTION 4

PREPARATION OF ESTIMATES

4.1 Preliminary Estimate

- (1) Preliminary estimate is to be prepared on the basis of plinth area or length of road etc. worked out on the rate per unit area/length/number, or such other method adopted for ready and rough calculation, so as to give an idea of the approximate cost involved in the proposal.
- (2) The preliminary estimate shall be prepared on the basis of the preliminary drawings prepared by the Senior Architect, and shall appropriately indicate in the history sheet the items that are included or excluded in the estimate. Part estimate that may not result in total completion of the work/project should be avoided as far as possible.
- (3) Provisions as required by the Chief Architect/Sr. Architect for architectural planning jobs shall be made in the preliminary estimate/enabling estimate as the case may be, to be submitted to the competent authority for accord of Expenditure Sanction. The provisions so made shall be placed at the disposal of the concerned Chief Architect/Sr. Architect. Existing financial arrangement will stand regarding D.D.Os. (**Added vide OM/MAN/213**)

4.1.1 Preliminary survey, etc

- (1) Where any preliminary survey, site/soil investigation, preparation of project reports including appointment of consultant and/or other essential preliminary steps connected with the schemes, is needed to be done before the preliminary estimate for the requisitioned work can be finalised, a separate estimate for such purpose(s) may be prepared, and sent to client department for sanction.
- (2) Where, however, such works are required to be carried out after the receipt of administrative approval and expenditure sanction and at the time of preparation of detailed estimate, necessary provision for this purpose may be made in the preliminary estimate,

4.1.2 Preliminary data and drawings

- (1) Whenever a requisition is received for a work, the same should be passed on to the concerned Senior Architect for preparation of preliminary drawings. On receipt of the requisition, the Senior Architect shall obtain the detailed requirements from the concerned Administrative Ministry/Department or client (in respect of deposit works), in the relevant proforma placed at Appendix-4.
- (2) Where required, he shall also obtain the survey plan and site particulars and other site data from the concerned Executive Engineer in the relevant proforma placed at Appendix-4.
- (3) He shall consult the representatives of all the concerned disciplines for incorporating their requirements in the preliminary plans.
- (4) He shall thereafter prepare preliminary plans and brief specifications according to the requirements for the work, and obtain the approval of the client department for the same. The preliminary drawings should indicate sufficient details for preparation of preliminary estimate.
- (5) He shall then forward these approved plans and brief specifications to the concerned Chief Engineer/Superintending Engineer/Executive Engineer, Civil and Electrical, for preparation of the preliminary estimate.

4.1.3 Plinth areas for residential buildings

- (1) The plinth area scales indicated in the Appendix 5 should be followed for all construction works in the General Pool houses as well as houses for other Ministries/Departments where such norms are applicable.
- (2) No deviation from the prescribed scales should normally be made, unless specifically desired by the client department. In such circumstances specific reference to the deviation should be made in the history sheet of the estimate.

4.1.4 Preparation and forwarding of preliminary estimate

Chief Engineer/Superintending Engineer/Executive Engineer of the major component shall be the nodal officer for forwarding estimates.

- (1) No estimate irrespective of any value shall be sent by the Sub-Division directly to the client.
- (2) Estimates solely for Civil, Electrical, Horticulture works up to the value for which EE/SE/CE is competent to accord technical sanction, shall be sent at the Division/Circle/Zone level respectively.
- (3) Estimates for works requiring input from more than one division and/or more than one discipline shall be sent only at the circle level. **That SE can submit PE including civil, E&M and Horticulture components up to the sum of combined power of T/S of individual SE/DoH. However, cost of each component of civil, E&M and Horticulture shall not exceed the T/S power of SE/DoH. (For example current financial powers of SE to accord technical sanction is Rs. 2.5 Crore, therefore, he can submit PE up to Rs. 7.5 Crore but cost of each component of civil, E&M and Horticulture services shall not exceed Rs. 2.5 Crore. Similarly SE promoted on in situ basis can submit PE up to Rs. 3.75 Crore but cost of each component of Civil, E&M and Horticulture Services shall not exceed Rs. 1.25 Crore.)**
Copy of the estimate is to be sent to Chief Engineer Civil and Electrical and DDG(H) as the case may be.

The Superintending Engineer incharge of major discipline of work will send the consolidated estimate after obtaining input from all concerned units. Copy of such estimates shall be sent to the concerned Divisions & Superintending Engineer/DoH of the other discipline as well. **(Modified as per OM/MAN/233)**

- (4) For all major works beyond the limit under S.No. 3 above, only single estimate covering all aspects of building and services will be sent through concerned Chief Engineer (Civil) or Chief Engineer of the unified Zone except works which are predominantly of E&M nature for which estimate shall be sent by CE(E) or CE of the unified zone as the case may be.
- (5) The estimate shall be prepared in the format given in Para 4.2.2(3).
- (6) Provision for services like sanitary, water supply, drainage and electric installations etc., should be made on the basis of plinth area rates. Provisions for items for which plinth area rates are not available, shall be made on rough cost estimation basis and included in the estimate.
- (7) The effect of Building and Other Construction Workers' Welfare Cess Act 1996, VAT/Work Contract Tax, Service Tax including Education Cess as applicable at the time of submission of Preliminary Estimate is also to be added. **(Modified as per OM/MAN/171 & 191)**
- (8) Provisions for various services shall be incorporated in consultation with the concerned disciplines.
- (9) In case of proposals under the administrative control of the Ministry of Urban Development, while forwarding the preliminary estimate, it should specifically be mentioned, whether the expenditure involved can be met:-
 - (i) From within the sanctioned grant.
 - (ii) From the specific budget allotment during the current financial year.
 - (iii) By re-appropriation of funds and if so, source of re-appropriation should be indicated.
- (10) While forwarding the preliminary estimate to the client department for accord of administrative approval and expenditure sanction, an indication shall be given in the history sheet that the cost and time of the project is liable to revision due to probable escalation in cost of construction apart from reasons such as change in scope, area, design and specifications etc. if so desired by the client at a later date.
- (11) While sending the estimates it shall be made clear to the client department that execution of the works will depend upon the receipt of the funds through authorization or through allocation well in time during the financial years.
- (12) Works for which sanctions are received after the month of November should be taken up for actual execution in the next financial year and the client departments should be informed accordingly so that necessary budget etc. can be arranged by them for the Financial year in which works are liable to be executed.
- (13) In respect of maintenance operations for buildings other than those in general pool, the concerned departments should be requested to give a complete list of works required to be carried out and estimates given to them latest by the month of April. While forwarding such estimates it must be made clear to the client department that allotment of funds under the Head of Account "2059 Non Residential-other buildings" and "2216 Residential - other Building" are meant primarily for day to day repairs and payment of labour etc.

4.1.5 Provision for contingencies and its utilization

- (1) In addition to the provision for all expenditure which can be foreseen for a work, a provision of contingency shall be kept as follows:
 - (a) Estimated cost up to Rs. 1 Crore 5%
 - (b) Estimated cost more than Rs. 1 Crore ... 3%, subject to minimum of Rs. 5 Lakhs
- (2) This provision is also intended to cover the cost of work-charged establishment for which no provision should be made separately except in the case of annual maintenance estimate where provision is made for such establishment under a separate sub-head of the estimate.
- (3) **The amount provided for contingencies shall be utilized as per the powers delegated to various officers of CPWD as given below:**
 - (i) **Executive Engineer and Superintending Engineer /Director of Horticulture shall have full powers to utilize contingencies for the works where sanctioned cost is within their powers to accord TS.**
 - (ii) **Executive Engineer shall have powers to utilize contingencies up to a maximum of Rs. 5 lakh for the works where sanctioned cost is within power of SE and CE/DDG(H) to accord T/S.**
 - (iii) **Superintending Engineer / Director of Horticulture shall have powers to utilize contingencies up to a maximum of Rs. 15 lakh for the works falling within the competency of Chief Engineer/DDG(H).**
 - (iv) **However, it is to be ensured that the authority under which the competency of the works fall should be kept informed about utilization of contingency for every utilization by indicating utilized and balance amount available. (Modified as per OM /MAN/233)**

The contingencies can be utilized for construction of site office, engagement of watch & ward staff and job works like Surveying, material testing, estimating, structural design, drawings, models and other field requirements etc.

4.2 Detailed Estimate

The preparation of detailed estimate and drawings and designs should be taken up only after obtaining an assurance from the Department/Ministry sponsoring the proposal; that the site is available, and without any encumbrances is available or likely to be made available within a reasonable time.

4.2.1 Preparation of the detailed estimate

- (1) On receipt of the administrative approval and expenditure sanction; and confirmation about the availability of site, the concerned authority as per Para 2.5.3 shall decide on the packages for the purpose of accord of technical sanction. The Superintending Engineers/Executive Engineers (P), Civil and Electrical, shall forward to the Senior Architect all relevant structural and service data based on the approved preliminary plans, for preparation of detailed working drawings and architectural specifications for the work. Para 2.7.1.1 may also be seen. On receipt of such drawings, the decided competent authority shall take up the preparation of the detailed estimate, and accord technical sanction.
- (2) The detailed estimate should be complete and as comprehensive as possible, and should be supported by detailed architectural drawings, preliminary structural plans, preliminary lay-out drawings of the various services, detailed drawings and/or specifications for the various components of work involved, etc., as applicable.
- (3) The work is to be executed strictly as per the detailed working drawings and specifications finalized by the department.
- (4) The detailed estimate should give broad details for each item of the work involved. Other details shall be covered by the accompanying detailed drawings and specifications. The detailed estimate should be based on the rates given in the Schedule of Rates for those items of work covered by it, and by analyzed market rates for the remaining items.
- (5) The plan and design of the external services shall be got vetted from the technical sanctioning authority for the main building work before the detailed estimate for the external services is technically sanctioned by the competent authority at a lower level.

- (6) The detailed estimate should invariably contain the following information:
- (i) Necessary details in support of the lump-sum provisions made in the estimate, if any.
 - (ii) Basis on which the rates have been provided, i.e. reference of the schedule of rates or market rates.
 - (iii) A brief note on the special construction difficulties, if any, which are likely to be encountered during the construction stage.

4.2.2 Format for detailed estimate

- (1) The detailed estimate shall consist of a report in the Form CPWD-I in Appendix-6, plans, specifications and a detailed statement of measurements as in Form CPWD-2 in Appendix-7, quantities and rates as in Form CPWD-3 in Appendix-8, etc. with an abstract showing the total estimated cost of each item. In the case of a project consisting of several works, the report may be a single document for all the works and like-wise the specifications, but details of measurements and abstracts of costs may conveniently be prepared for each work, supplemented by a general abstract bringing the whole together.
- (2) The estimate for a project/work should be comprehensive, supported by complete details and based on drawings and design calculations, where necessary.
- (3) The 'Report' of the estimate should be prepared in a lucid form, understandable by non-technical officers of the administrative Ministry/Department or the client. It should be comprehensive enough under each sub-head as mentioned below.
 - (i) History:- Particulars relating to the initiation of the proposal, and events leading upto it, and its general purpose, including references to previous correspondence, documents and specifications, where necessary.
 - (ii) Design:- A description of the proposal, particularly with regard to its location and design, also with reference to standards and specifications, calculations and drawings, where necessary. In case of a revised estimate, a description of the original proposals and those finally adopted should be given.
 - (iii) Scope:- An explicit statement as to what work is and is not covered by the estimate, also a reference to what arrangements are being made for any portion(s) of the work which are not included in the estimates.
 - (iv) Rates:- Particulars as to how the rates have been arrived at, giving reference to the relevant standard schedule of rates or market rates and also to the details accompanying the estimate, where necessary, with any special explanation connected therewith.
 - (v) Cost:- Cost of the work, and in case of revision, a comparison with the amount originally provided under any previous administrative sanction or detailed estimate.
 - (vi) Method:- The method proposed for carrying out the work, whether by contract or daily labour, or any combination of these.
 - (vii) Establishment:- Details of any provision made in the estimate for work-charged establishment, when necessary.
 - (viii) Construction Plant:- Any special methods of construction to be adopted with reference to specifications, etc. and details of the provisions that have been made in the estimate for necessary construction plants and machineries, etc.
 - (ix) Land:- Provisions for acquisition of land, when necessary.
 - (x) Time:- The estimated time of completion from the date of receipt of A/A & E/S. indicating break up for pre-construction and construction stage
- (4) Full reference should be given in respect of the Architectural, structural and services drawings accompanying the estimates in support of the details submitted therein.
- (5) Any other points of importance that demand knowledge of local conditions must be incorporated.
- (6) The abstract of the detailed estimates should be framed to show merely the quantity and cost of each completed item of work e.g. brick work; or it may be framed to show the cost of labour and materials separately. The adoption of either form of abstract should be determined with reference to the mode in which it is proposed to carry out the work. Para 4.4 may also be seen.

4.3 Schedule of Rates

- (1) To facilitate the preparation of estimates, as also to serve as a guide in settling rates in connection with contract agreements, a schedule of rates for each kind of work commonly executed should be maintained up-to-date in the Department. It should be prepared on the basis of the rates prevailing in each station and necessary analysis of the rates for each description of work and for the varying conditions thereof should, so far as practicable, be recorded.
- (2) The Schedule of Rates for Delhi shall be issued under the authority of DG(W), and by the Additional Director General for their respective Regions/Zones. These shall be revised at least once in two years.
- (3) The rates entered in the estimates should generally agree with the scheduled rates, but where due to any reason, the later are not available, market rates may be considered.

4.4 Recasting of Estimate

- (1) After an estimate has been technically sanctioned, it may be decided to make a change in the method originally contemplated for execution of the work. In such a case, the original abstract should be recast in accordance with the instruction laid down in para 4.2.2(6).
- (2) The details of cost and quantities already approved by competent authority should be re-arranged, and the revised abstract should be approved by the Divisional Officer. Thereafter it shall be treated as the sanctioned abstract of the estimate for all accounts purposes.

4.5 Supplementary Estimate

Any development that is thought necessary while a work is in progress, and which is not fairly contingent on the proper execution of the work as first sanctioned, may be covered by a supplementary estimate. This estimate must be accompanied by a full report of the circumstances that render it necessary. The abstract must show the amount of the original estimate and the total of the sanction required including the supplementary amount.

4.6 Revised Estimate

When an excess beyond permissible variation over the sanctioned estimate is foreseen, and there is likely to be unavoidable delay in the preparation of a revised estimate, an immediate report of the circumstances should be made to the authority whose sanction will ultimately be required. When a revised estimate is submitted, it must be accompanied by a statement in Form CPWD 4 as in Appendix 9, comparing it with the latest existing sanction of the competent authority and by a report showing the progress made up-to-date.

4.7 Estimates for additions and alterations

- (1) Normally all cases of additions and alteration should be carried out after preparations of detailed working drawings. While submitting estimates containing the proposals for additions and alterations, the fact that the concurrence of the client/occupant has been obtained should be stated explicitly.
- (2) Normally no work of addition/alteration which involves structural changes in the residential buildings, or alters the aesthetics of the external facade, shall be carried out except with the approval of concerned Architect.

4.7.1. Details to be provided with the estimate

- (1) While submitting estimates for additions and alterations to various residential buildings owned by the Government, capital cost thereof should invariably be furnished in the forwarding letter along with the following information:
 - (i) Complete justification for each item of additions and alterations desired by the requisitioning authority, with comment on the necessity or otherwise thereof.
 - (ii) Whether such work has already been carried out in any other residence of the same type and if so agreed by the Ministry. Reference to such cases should be quoted.
 - (iii) Whether acceptance of the proposal is likely to have repercussions.

- (iv) Whether the proposal has the approval of the Housing Committee in the case of residences of Members of Parliament.
- (v) Whether the proposed additions and alterations will result in increase of the prescribed scale of certain item. The existing number or area, sanctioned scale for similar type or house and maximum or minimum number or the area of requirement provided elsewhere should also be supplied.
- (vi) If the additions and alterations result in increase of the plinth area, what will be the additional license fee? In such cases, pay of the officer occupying the house and the pooled standard license fee of the house should be indicated.
- (vii) Information regarding availability of funds to finance the proposal.
- (2) Where a portion of the house/premise is required to be demolished, the estimate should provide for the cost of dismantling. Credit for the value of dismantled materials should be given to the estimate. Report of the estimate should contain proposals for utilizing the useful materials obtained from the dismantled material, and for disposal of unserviceable items.

4.7.2 Augmentation of power supply

The Director General (Works) has been delegated full powers to approve the estimates involving changing of existing cables and augmentation of electric power supply as per maximum electrical load sanctioned to the residences in respect of the following category.

- a. Ministers
- b. Judges of Supreme Court/High Court
- c. Members of Parliament
- d. Secretaries/Additional Secretaries and equivalent officers.

4.8 Estimates for petty works

- (1) In case of new petty works, which do not come under ordinary repairs, a requisition for the same shall be obtained from the client department in Form CPWA 32. In case of works of other classes, the officer of the Central PWD proposing the work should fill in the form.
- (2) On the requisition thus received, the Divisional Officer, or an Assistant Engineer/Junior Engineer empowered by him to act in such cases, will record his opinion as to what work should be done, and give on the face of the requisition a rough estimate in lump sum or otherwise of the probable cost of each item of the work asked for.

4.9 Estimates for road Works

- (1) Projects for the construction of new roads must be accompanied by the following documents:
 - (i) Report, including a brief note on the proposed gradients.
 - (ii) Abstract estimate of cost.
 - (iii) Index map.
 - (iv) A detailed survey and longitudinal section and cross section at suitable intervals, which should show not only the existing ground levels, but also proposed formation levels.
 - (v) Quarry charts showing the various quarries from where road metal is proposed to be obtained.
 - (vi) Drawings of all masonry, concrete, iron or timber works in the order in which they occur in the line of the road.
 - (vii) Detailed estimate sheets.
- (2) Estimate for new lines of road should include the cost of all dwellings and inspection houses intended to be built along it for accommodation of subordinates and others.
- (3) Necessary provision should also be made for shifting of pipe line, drainage and electric poles and cables, telephone lines, if any coming in the way of new alignment.

4.10 Estimates for furniture

- (1) Estimates for interior decoration, furniture and furnishing shall be prepared based on client's requirements.
- (2) The cost of furniture in cases of CPWD offices will be chargeable to the contingent grant of the office of Chief Engineers and Superintending Engineers, Divisional and Sub-Divisional Offices as the case may be.

Note: The Superintendent/Head-Clerk in the various offices, or the official so designated for the purpose, shall maintain the numerical account of the office furniture in their office. Annual physical verification shall be conducted by an independent officer at least of the level of Assistant Engineer or Section Officer, who shall record the required certificates.

- (3) The supply of and repairs to furniture for any of the Government Inspection Bungalows in charge of the Central PWD, Hotels and Hostels managed by Government of India will be carried out by the Central PWD. The first supply of such furniture should be charged to the estimate of the building for which the same is required. For repairs and renewals refer para 8.2 of Maintenance Manual.
- (4) The furniture in the Parliament House, Rashtrapati Bhawan, MP's flats, specified and entitled officers bungalows and residences at Delhi and Guest Houses at stations outside Delhi will be provided and maintained by the Central PWD.
- (5) All expenditure on table fans, refrigerators, coolers and furniture etc. stocked by the CPWD for supply to non-residential buildings, MP's flats/hostels, guest houses, etc. not let out as regular residential accommodation should be debited to the minor head "Furnishings" under the "Major Head 2059 PW "and to "2216 Housing" in respect of residences.

4.11 Estimates for purchase of buildings

- (1) In case of purchase of built up accommodation to house the offices of Government of India/UT Administration wherever authorised by the Ministry, a separate estimate is required to be prepared after confirming the structural soundness of the building, and after a survey and valuation report of the Executive Engineer is submitted to the Ministry/Administrator and concurrence thereto obtained from the Ministry of Finance.
- (2) The maintenance of such buildings will normally be carried out on the same plinth area rates/percentages basis as laid down in case of other Government buildings, unless there are constraints in doing so.

4.12 Estimates for repairs to leased and requisitioned properties

- (1) The Government takes on rent/lease or by requisition some buildings if and when considered necessary, for residential and office accommodation. The repairs estimate for these buildings should be prepared on the same plinth area rates/percentages basis.
- (2) While submitting estimates for repairs or additions and alterations to such buildings, following information should invariably be furnished in the report of the estimate:
 - (i) Whether or not the building in question is a leased or requisitioned one.
 - (ii) In case the building is a leased or requisitioned one, the following further information should be furnished:
 - (a) Whether the proposed repairs or additions and alterations are due to Structural defects or not.
 - (b) Whether or not the land lord was approached, and whether he has consented to the carrying out of the repairs or additions and alterations in question.
 - (c) If the land lord has not consented to the proposed repairs etc., how the Government is interested in carrying out the proposed work.
 - (d) Whether the proposed work is inescapable or otherwise, and whether the work of additions and alterations may be carried out at Government expenses.
 - (e) What expenditure will be incurred for restoration of the building to its original condition.

- (3) In case of additions and alterations, if any portion of the building is to be demolished, necessary credit for the dismantled materials should be afforded to in the estimate, as done in case of Government buildings.
- (4) If the land lord refuses to meet the cost of repairs or additions and/or alterations, if any required, non recurring expenditure and recurring expenditure as per powers delegated in Appendix-1 may be sanctioned by the Additional Director Generals/Chief Engineers, and expenditure in excess thereto with the approval of the Ministry of Urban Development, subject to the condition that at the time the building is released, the Government will have the right to remove all such installations or materials/articles as were added to the building/premises.

4.13 Hiring of Accommodation

- (1) For hiring of all private accommodation required by any Civil Department of the Central Government at Delhi, the Executive Engineer (License Fee), CPWD, is the Chairman of the Hiring Committee, the other members being the concerned Assistant Director of Estates and Assistant Director (Finance), Ministry of Urban Development. The requisitioning Department shall, in the first instance, apply for a no objection certificate from the Directorate of Estate. On receipt of NOC, the requisitioning department shall apply for fair rent certificate to the Executive Engineer (LF). The Executive Engineer (LF) shall in turn issue the fair rent certificate. The agreement for hiring accommodation and payment of rent etc. are to be borne directly by the requisitioning department.
- (2) For cities like Calcutta, Mumbai, Chennai and Nagpur, similar Hiring Committees exist, and the same procedure is followed.
- (3) For places where there is a Superintending Engineer (Civil) posted at the station, the rent assessment shall be done by a Hiring Committee headed by the Superintending Engineer, with the local Assistant Estate Manager of the Directorate of Estate and an Executive Engineer (Civil) co-opted by the Superintending Engineer as members, and certificate of reasonable rent shall accordingly be issued by the Superintending Engineer.
- (4) In case there is no officer of the Directorate of Estate at the station, the Executive Engineer/ Assistant Engineer doing the estate function shall be co-opted as a member. In case, there is no such estate function involved, the Superintending Engineer shall co-opt an Executive Engineer or Assistant Engineer as the second member.
- (5) In case there is more than one Superintending Engineer (Civil) at the station, the concerned Chief Engineer shall nominate one of the Superintending Engineers to head the Committee.
- (6) For all other areas, the rent assessment shall be done by the concerned Executive Engineer (Civil) under whose jurisdiction the building proposed to be hired stands. He may, however, seek assistance of an Assistant Engineer/Junior Engineer (Civil), if needed.
- (7) The procedure for calculating rent is given in Annexure I.
- (8) In cases where the rent is to be paid by the Central PWD due to branch of Estates Directorate not being there, the payment will be made against specific estimates to be prepared for the purpose.
- (9) In case where the Administrative Departments using such premises hire the houses themselves and request CPWD for issue of certificates as referred to above, they may be charged fees at the rates as are charged by the State Government for the purpose.

4.14 Powers for hiring accommodation

- (1) The financial powers of hiring accommodation shall be as per Delegation of Financial Power Rules.
- (2) Executive Engineers and Superintending Engineers are competent to hire private accommodation for storage purposes, provided the expenditure is within the provision of the sanctioned estimate.

Annexure- I
(Refer Para 4.13)

(1) Assessment/Re-assessment of fair rent relating to private buildings taken on lease by the Central Government Departments.

(2) Authority to issue rent reasonableness certificate.

- (1) Reasonable rent shall be assessed according to two alternate methods:
 - (i) Recognized principles of valuation and
 - (ii) Prevailing market rent.
- (2) Land rate as per records of Appropriate Authorities or Valuation Cell of Income Tax Department shall take precedence over the land rate notified by local Revenue authorities.
- (3) In case of premises proposed to be hired being ready built property/space, the current composite cost of acquisition shall be taken as net value of the property without any further adjustment for depreciation according to its age or on account of under/over utilization of FAR, if any.
- (4) Rent shall be inclusive of Municipal Taxes but element of Municipal Taxes shall be indicated in the Certificate leaving the final decision to the hiring department whether to pay composite rent or reimburse municipal taxes to the owner separately or to pay the same directly to the local body.
- (5) The date from which the rent is to be assessed and also the period the assessed rent shall remain effective for, shall be decided by hiring department and hence no such period shall be indicated in the Certificate.
- (6) In case the figure as per method (ii) referred to in Para (1) above is lower, only this figure shall be intimated as reasonable rent. However, if the figure as per method (ii) works out to be higher, both the figures shall be intimated as a range of reasonable rent leaving the final decision to the hiring department to negotiate and settle the rent keeping in view this range. It shall be for the hiring department to see if the rent as assessed by CPWD is to be restricted to any specified limit in view of the terms and conditions of the existing lease agreement or due to any other relevant instructions issued by the Competent Authority.
- (7) Rent Reasonableness Certificate shall be issued strictly as per modified model formats, given in the enclosed Annexure-IA&IIA.
- (8) Necessity for re-assessment of rent, for whatever reasons, whether during the currency of the lease agreement or after its expiry, and the effective date therefore shall be the date of receipt of the request of the owner or the date from which revision is due after expiry of existing lease agreement, whichever is later.
- (9) The Hiring Committee on account of subsequent increase/decrease in municipal taxes, if any, shall not entertain the request for revision of rent. It shall be for the hiring department to settle the same right in the beginning as to how subsequent changes shall be dealt with.
- (10) All rent assessment cases shall be dealt by a Hiring Committee associating a representative of Hiring Department, if the latter is so willing. Jurisdiction of a Hiring Committee shall also include satellite and twin cities/towns.

REVISED GUIDELINES

1. The reasonable rent shall be relevant to a date (referred to hereafter as date of assessment') as specified by the Hiring department. The relevant date in respect of reassessment of rent shall be the date of receipt of request of the owner or the date from which the revision is due after expiry of existing lease agreement, whichever is later and the rent shall be assessed according to the following two alternate methods-
 - (i) On the basis of recognized principles of valuation; and
 - (ii) On the basis of the prevailing market rent.

2. The hiring department while sending the proposal to CPWD for assessment of rent would also send the lowest three offers of rent received by them from the owners of the premises without disclosing the identity of owners. Owners will be marked as A, B & C and their offers would be mentioned against them.
3. The assessment of reasonable rent according to the recognized principles of valuation which represents reasonable annual return on the property shall be done in accordance with the method prescribed as hereunder:-
 - (i) Workout the depreciated cost of the building (D) as on the date of assessment. First of all reproduction cost of the building (C) shall be worked out as on the date of assessment, based on the ruling cost of building construction in the locality. The depreciated cost shall accordingly be calculated taking the end residual value of the building as 6% of its reproduction cost and assuming a straight line variation of depreciation depending on the age of the building (A) as on the date of assessment and its total serviceable life (A+R), where 'R' is residual life of building as on the date of assessment, which shall be worked out with due care and keeping in view the type of structure and specifications adopted in its construction. In other words, $D = 0.94 \times \frac{C \times A}{A+R}$
 - (ii) Work out the land area appurtenant to the building (La) by taking into account the local byelaws for permissible ground coverage and accordingly work out the surplus land area (Ls) as L-La, where; L=total land area. For example, if the permissible ground coverage as per local byelaws is 'X%' and the plinth area of the building at ground floor (i.e. actual ground coverage) is 'Y'Sqm. $La = \frac{Y \times 100}{X}$ Sqm, subject to the condition however that if 'La' works out to be more than 'L' which might be the case if actual plinth area at ground floor is more than what is permissible according to the local bye-laws, the same shall be restricted to 'L'. There would accordingly be no 'Ls' in such cases.
In case, no local byelaws exist in the locality, comparison shall be made with the general practice in the locality.
 - (iii) Ascertain the prevailing land rate in the locality.
Wherever land rates are available with Appropriate Authority or Valuation Cell of Income Tax Department, which could be considered as applicable to the localities in question, the same shall be considered as prevailing land rate. In case the relevant land rates are not available with the Appropriate Authority or Valuation Cell, rates as notified by Revenue authority shall be adopted. Preferably authenticated documents or if the same are not made available by the concerned authorities, at least reference of such documents shall be kept on record in support of the land rate considered as prevailing in the locality.
 - (iv) Workout the cost of land area appurtenant to the building and that of the surplus land area as discussed in Para 3(ii) above, separately.
While working out cost of surplus land, care shall be taken that only that portion of the surplus land is taken into account which enhances utility of the property by way of improved access or parking facilities or any other such utilization, subject to the condition that the hiring department have made specific mention in their requisition that apart from the building, they also propose to take on lease the usable surplus land shall be indicated clearly in the rent reasonableness certificate.
 - (v) Add the cost of the appurtenant land area to the depreciated cost of the building to find out the net value of the property. If the building as a whole is not proposed to be hired, the net value of the property shall be reduced accordingly keeping in view the built up area of the premises to be hired and total built-up area. Care shall be taken that if the areas of common utilities, such as staircase, toilets, corridors etc. are being or shall be used by more than one user on a particular floor or in a particular wing, only proportionate built up area of such common utilities is considered in working out the built-up area of the premises to be hired.

- (vi) Where the buildings or a part of the same as proposed to be hired have been acquired by the owner as ready built property/space, in which the cost of purchase is inclusive of the cost of land and thus represents the composite capital cost of the properties, the net value of the property shall be worked out as follows:-
 - (a) If authenticated information is available regarding acquisition and purchase price of the ready-built property proposed to be hired, the same shall be considered as net value of the property with due correction factor for appreciation/depreciation in its market value during the intervening period, i.e from the date of its acquisition to the date of assessment.
 - (b) In case the information as above is not available, composite capital cost i.e. net value of the property shall be worked out by comparing the same with the authenticated cost of similar properties/space preferably of those acquired by Govt. departments (Central/State) or Public Sector Undertakings (Central/State) in the vicinity or in the similar locality. If there are no such properties available for comparison, cost of similar properties/space purchased by Public Sector Banks/Private parties may also be considered for comparison subject to the condition that if the sale/purchase of such properties was within the purview of Appropriate Authority, the cost of acquisition shall be taken as what had been mentioned in the sale clearance issued by Appropriate Authority. The cost as ascertained in these cases too shall be modified by applying correction factor for appreciation/depreciation as described in Para (a) above. While comparing the cost as referred to above, due care shall also be taken to ascertain whether the properties under assessment and the one considered for comparison are nearly similar in terms of the location, distance from air/rail/bus terminal, access/approach facilities, set-backs, parking facilities, general environment, specifications and other common utilities in the building like lifts, toilets etc., and if the same are not on equal footing, a careful assessment shall be made for suitable addition or subtraction, as the case may be. No adjustment shall however, be made for under or over utilization of the FAR in either case.
 - (c) If the information as mentioned in Para 3(vi) (a) or (b) above is not available, the net value of the property shall be worked out by following the same procedure as given in Para 3(i) to (v) above.
 - (d) In addition to working out the net value of the property in the manner as laid down in Para 3(vi) (a)/(b) above, depreciated cost of the building portion (i.e. excluding land) shall also be worked out as per method laid down in Para 3(i) above for the purpose of calculating the Sinking Fund Element as described in Para 3(x) (c) below.
- (vii) The annual rate of return on the net value of the property referred to in Para 3(v)/(vi) above, shall be worked out as follows:-
 - (a) In case of State Capitals as well as other cities/towns which qualify for city Compensatory Allowance **8% for non-residential use of the property and 7% for residential use.**
 - (b) In case of other places-**7% for non-residential use of the property and 6% for residential use.**
- (viii) For the surplus land within the compound of the property which would offer improved access and/or parking facilities etc. and to the extent the same is proposed to be taken on lease along with building, the annual rate of return on the cost of the said surplus land shall be taken as 7% in case of places mentioned in Para (vii)(a) and 6% in case of places mentioned in Para(vii) (b) above, both for non-residential and **residential use of the property.**
- (ix) The net annual returns on the property including surplus land, if any, shall be worked out by addition of the returns as worked out in Para (vii)(a)/(b) and that in Para (viii) above.
- (x) The following factors shall further be added to the figure as arrived at in Para 3(ix) above to workout the gross annual return .i.e. reasonable rent per annum.
 - (a) Municipal tax (house/property tax) as per actual. If actual figures are not available, municipal taxes shall be assessed based on the rateable value of the property in accordance with the

relevant local/municipal byelaws. If the building as a whole is not proposed to be hired, the Municipal Tax shall be carefully worked out on prorata basis. The Municipal Tax component as assessed and considered in the certificate shall be clearly indicated in the rent reasonableness certificate to enable the hiring department to decide on the manner in which the municipal tax shall be paid (refer model formats for rent reasonableness certificate at Annexure IA & IIA).

- (b) Maintenance and repairs at the rate of 12% of the annual return on the property as arrived at in Para 3(vii) (a)(b) above. If any statutory provision exists in the areas binding the landlord to defray certain minimum expenses on maintenance and repairs, the same shall be duly accounted for.
- (c) Provision for sinking fund, to be ascertained by reference to standard sinking fund tables or alternatively to be calculated as per standard formula given below:-

$$\text{Sinking fund co-efficient (k)} = \frac{0.06}{(1+0.06)^r - 1}$$

Where, r = assessed residual life of the building in years as referred to in Para 3(i) above.

$$\text{Annual provision for sinking fund} = (k) \times (D)$$

Where, k = sinking fund co-efficient as above

D = Depreciated value of the building referred to in Para 3(i) and (vi) (d) above.

- (4) The rent based on the prevailing market rent shall be ascertained by making inquiries preferably in respect of rented properties/spaces, which have been taken on lease by Government Departments (Central/State) of Public Sector Undertakings (Central/State) in a comparable locality. If there are no such properties available for comparison, similar property/space hired by Public Sector Banks/Private body may also be considered for comparison. The properties shall be compared on the basis of various parameters as mentioned in the second part of Para 3(vi)(b) above and if the same are not comparable a careful assessment shall be made for suitable addition or subtraction as the case may be. It shall also be ensured that the factors for which landlord is responsible, like maintenance and repairs and municipal taxes in such cases as also the other relevant facilities, such as, benefit of usable surplus land are on an even keel and if it is not so suitable adjustments shall be made accordingly. No adjustment shall however be made for under or over utilization of FAR in either case.
- (5) After working out the rents according to the two alternate methods as described in Para 3 & 4 above, the reasonable rent shall be intimated to the hiring department as under:-
 - (i) If the rent based on the prevailing market rent is lower, only the rent based on the prevailing market rent shall be taken as reasonable rent and so intimated as per model format enclosed at Annexure-IA.
 - (ii) In case the rent based on the prevailing market rent happens to be higher, both the figures shall be intimated as range reasonable rent (as per model format enclosed at Annexure-IIA), leaving the final decision to the hiring department to negotiate and settle the rent keeping this range in view.
 - (iii) There may be some exceptional situations (like in a very small town/Kasba) where there is no rented building to be considered as basis for working out the prevailing market rent. In such cases the market rent may be worked out taking into consideration the rent prevailing in the nearby town and by giving due weight-age (plus or minus) for relative importance of the town where the building is situated to that of the town adopted as basis for comparison.
 - (iv) As the data collected and adopted for assessment of rent are relevant to a particular date and these are likely to undergo changes subsequently, the existing practice (although not so

prescribed by this Directorate in the earlier guidelines issued on 24.6.99) of adding a clause in the Rent reasonableness Certificate that the rent as certified shall hold good for 3/5 years or so, is not correct and shall be stopped forthwith.

- (v) The rent shall be expressed in terms of **per unit built up area or carpet area** Monthly rent may also be shown.
- 6. Re-assessment of rent of the existing leased building/space shall be treated as fresh assessment and shall be done according to the same method as discussed in the preceding paras. Necessity for re-assessment/ revision of rent, whether during the currency of the Lease Agreement or after its expiry shall however be examined and decided by the Hiring Department with due regard to the terms and conditions of existing lease agreement and any other relevant instructions issued by the competent authority. The effective date of revision of rent shall be the date of receipt of the request of the owner or the date from which revision is due after expiry of existing lease agreement, whichever is later.
- 7. It shall be for the Hiring Department to see if the rent as assessed/reassessed by the Hiring Committee is to be restricted to any particular limit in view of the terms and conditions of existing lease agreement or due to any other relevant instructions issued by competent authority to this effect.
- 8. As prescribed in Para 3(x)(a), the Municipal Tax component as accounted for in the rent shall be clearly indicated in the Rent Reasonableness Certificate. In view of the same, no request shall be entertained by Hiring Committee for re-assessment of rent on account of subsequent increase or decrease in municipal tax, if any. It shall accordingly be for the hiring department to settle it right in the beginning by a mutual agreement with the owner as to how such subsequent increase or decrease in municipal tax, if any, shall be dealt with.
- 9. The rent assessment shall be done by a Hiring Committee with the composition as given below and the jurisdiction of the Committee for a particular City/Town shall also include satellite and twin cities/towns, if any, as illustrated in the sub-Para (iv) below.
 - (i) **DELHI:** - The committee shall be headed by EE (LF), office of CE(NDZ)I, CPWD, Nirman Bhawan with an Assistant Director of Estate from Directorate of Estate and AFA(E), Finance Division, Ministry of Urban Development, Nirman Bhawan as members and certificate of reasonable rent shall accordingly be issued by EE (LF).
 - (ii) **Other Cities/Towns where there is a Civil Circle:-** the committee shall be headed by the Superintending Engineer, with the local Assistant Estate Manager of the Directorate of Estate and an Executive Engineer (Civil) co-opted by the Superintending Engineer as members and Certificate of reasonable rent shall accordingly be issued by the Superintending Engineer.
 - (a) In case there is no officer of the Directorate of Estate at the station, the Executive Engineer/ Assistant Engineer doing the estate function shall be co-opted as a member. In case, there is no such estate function involved, the Superintending Engineer shall co-opt an Executive Engineer or Assistant Engineer as the second member.
 - (b) In case there are more than one Civil Circle at the same station, the concerned Chief Engineer shall nominate one of the Superintending Engineer to head the committee.
 - (iii) **All other areas:** - The Hiring Committee shall be headed by a Executive Engineer (Civil Division) under whose jurisdiction the building proposed to be hired stands. He will co-opt one Assistant Engineer (Civil) and one Junior Engineer(Civil) in the committee. If there are more than one Civil Division at the same station, the Superintending Engineer concerned shall nominate one of the Executive Engineers to head the Committee.
 - (iv) As already mentioned above regarding jurisdiction of a Hiring Committee in the matter of satellite and twin cities/towns, the jurisdiction of Hiring Committee for Delhi shall include Ghaziabad, NOIDA, Greater NOIDA, Faridabad, Gurgaon. Similarly, Jurisdiction of Hiring Committee for

Mumbai, Kolkata and Hyderabad shall include Navi Mumbai, 24 Paragana and Secundrabad respectively and so on. If there is any doubt in regard to similar cases relating to other cities/towns, the concerned CE(C) shall be competent to take a decision.

10. If the Hiring Departments are willing, a representative to be nominated by them shall be associated in Market survey/enquiries for collecting relevant data. The head of the Hiring Committee shall accordingly make a reference to the Hiring Department before undertaking this exercise.
11. The rent calculations shall be an internal record of the Hiring Committee and shall not be furnished to the Hiring Department.

Annexure-IA**Model Format For Issue Of Rent Reasonableness Certificate If Rent According To The Prevailing Market Rent Is Less Than That As Per Recognised Principles Of Valuation.**

Certified that reasonable rent of Premises with description as.....
 owned by..... proposed to be hired by/ already under tenancy
 of(*)......

(name of the hiring Department) has been assessed as per guidelines issued by
 Directorate General of Works, CPWD vide No.8/1/2002-W.II(DGW)Pt. Dated 24.5.2004 the rent as
 effective from.....works out to Rs.....(in words.....)
 per sq.ft. per month of built up area. the monthly rent will be Rs.....(in
 words.....)

2. It shall be the responsibility of hiring department to see if the rent assessed as above is to restricted to any particular limit in view of the terms and conditions of the existing lease assessment or any other relevant instructions issued by the competent authority to this effect.(**).
3. The rent as indicated above is inclusive of (i) Surplus usable land in the campus surplus.....Sqm.approx to be utilized exclusively by the Hiring Department for parking purposes etc.(***) (ii) Regular repairs and maintenance of the premised; (iii)Municipal Tax (House/ Property Tax), but exclusive of Water & Electricity charges payable to body which shall be borne by the Hiring Department.
4. The Municipal Tax component included in the rent as indicated above is.....(in words.....)per month. It will be for the Hiring Department to settle the terms of payment of the rent to the owner with or without Municipal Tax by following any of the following alternatives:-
 - (a) Pay only net rent first and reimburse municipal tax to the owner separately on submission of proof of actual payment.
 - (b) Pay only net rent to the owner and pay municipal tax directly to the local body.
 - (c) Pay composite rent.

As municipal tax component of the rent has already been spelt out above, no request shall be entertained by Hiring Committee for re-assessment of rent on account of subsequent increase/ decrease in municipal tax, if any. It shall accordingly be for the hiring department to settle it in the beginning by a mutual agreement as to how such subsequent increase or decrease in municipal tax, if any shall be dealt with.

* Strike out which is not applicable.

** Not relevant if it is not a case of periodical re-assessment/revision of rent

*** Strike out if the rent does not include element of surplus land.

Annexure - IIA

Model Format For Issue Of Rent Reasonableness Certificate If Rent According To The Prevailing Market Rent Is More Than As Per Recognised Principles Of Valuation

Certified that reasonable rent of the premises with description as.....
 owned by.....and proposed to be hired by/already under
 tenancy of (*)......has been

(Name of the hiring Department)

assessed as per guidelines issued by

Directorate General of Works, CPWD, vide No.8/1/2002-W.II (DGW) Pt. Dated 24.5.2004 and the rent as
 effective from.....works out to as under:-

- (i) **According to the recognized principle of valuation** (i.e. on the basis of the present value of the property) Rs.....(in words.....) per sq. ft. per month of built up area. The monthly rent will be Rs.....(in words.....).
- (ii) **According to the prevailing market rent** Rs.....(in words.....) per sq.ft per month of built up area. The monthly rent will be Rs.....(in words.....)

The two figures of rents as above shall be considered as a range of reasonable rent and it shall be for the hiring department to negotiate and settle the rent, keeping in view this range.

2. It shall be the responsibility of the hiring department to see if the rent assessed as above is to be restricted to any particular limit in view of the terms and conditions of the existing lease agreement or any other relevant instructions issued by the competent authority to this effect.(**).
 3. Both the figures of rent as indicated above are inclusive of (i) Surplus usable land measuring.....sqm.approx in the campus to be utilized exclusively by the Hiring Department for parking purposes etc.(***) (ii) Regular repairs and maintenance of the premises; (iii)Municipal Tax (House/Property Tax), but exclusive of water & Electricity charges payable to local body which shall be borne by the Hiring Department.
 4. The Municipal Tax component included in the rents as indicated above is Rs.....(in words.....) per month. It shall be for the Hiring Department to settle the terms of payment of the rent to the owner with or without Municipal Tax by any of the following alternatives:-
 - (a) Pay only net rent first and reimburse municipal tax to the owner separately on submission of proof of actual payment.
 - (b) Pay only net rent to the owner and pay municipal tax directly to the local body.
 - (c) Pay composite rent.
 5. As municipal tax component of the rent has already been spelt out above, no request shall be entertained by Hiring Committee for re-assessment of rent on account of subsequent increase or decrease in municipal tax, if any. It shall accordingly be for the hiring department to settle it right in the beginning by a mutual agreement as to how such subsequent increase or decrease in municipal tax, if any, shall be dealt with.
- * Strike out which is not applicable.
 ** Not relevant if it is not a case of periodical re-assessment/revision of rent
 *** Strike out if the rent does not include element of surplus land.

SECTION 5

EXECUTION OF ORIGINAL WORKS

5.1 Preliminaries

- (1) On accord of technical sanction to the estimate, the technical sanctioning authority shall finalise the notice inviting tenders, and send the same to the concerned Executive Engineer for release of advertisement in the website/press.
- (2) It should be ensured that no work is taken in hand without proper technical sanction, except in the case of 'urgent' or 'emergency' work as described in para 2.2 .

5.2 Inspection of Works

5.2.1 Periodic inspection of works

- (1) It is incumbent upon the various officers concerned with the work, namely, the Senior Architect/ Architect, Superintending Engineers/Executive Engineers/Assistant Engineers/Junior Engineers, Civil and Electrical, to inspect the works frequently to ensure that the works are in general being executed according to the design, drawings and specifications laid down in the contract.
- (2) The Executive Engineer should draw up a quarterly programme of inspection of all works in his Division. The minimum number of inspections for each work shall be 1 for every 2 bills for the works at his head-quarters, and 1 for every 3 bills for the works outside the headquarters. A copy of this programme should be sent to the Superintending Engineer.
- (3) Similarly, the Superintending Engineer shall draw up a programme for inspection of various works in his Circle. In particular, for contracts accepted by Superintending Engineer and above level officers, and for other important works, the programme for inspection shall be so drawn that the Superintending Engineer inspects at least once at each of the following stages during the execution of each work:

<i>At SE's HQ</i>	<i>Outside SE's HQ</i>
Upto 3rd RA bill	Upto 5th RA bill
4th to 6th RA bill	6th to 10th RA bill
7th to 9th RA bill	11th to 15th RA bill
and so on	and so on

5.2.2 Recording of inspection notes

- (1) All the officers shall ensure issue of inspection notes/ instructions after their inspection. These may be issued by way of recording the instructions in the Inspection Register at site, or by issue of inspection notes, a copy of which is required to be pasted in the Inspection Register. The inspection note of the Superintending Engineer and other officers, during the stages mentioned above should be available on record, before passing the bill. If this is not available on record, prior permission of the Chief Engineer shall be taken before payment is released.
- (2) The instructions to be complied by the contractor shall be carried on to the Site Order Book for ensuring compliance. Action taken report on the inspection note issued by an inspecting officer should be given by the Executive Engineer within one month. During next inspection, earlier inspection report should be reviewed by the inspecting officers.

5.2.3 Responsibility for quality of work

- (1) The officer who records/test checks the measurements for an item of work will be responsible for the quality, quantity and dimensional accuracy of the work.
- (2) The Assistant Engineer should make special efforts to be present at site when concreting is going on and must ensure quality of the concrete in work through appropriate fineness module of fine

aggregate, proper grading of coarse aggregate in relation to the grade of cement used, and an appropriate water-cement ratio depending on the temperature at which the concrete is laid, laying and curing, to obtain the designed or desired strength of concrete.

- (3) Paras 53.4 and 53.17 of this Manual may also be seen in this regard.

5.3 Deviations from architectural drawings

Any change from the provisions in the drawings issued by the Senior Architect that becomes necessary during the execution of the work due to any practical difficulty, shall be brought to the notice of the Technical Sanctioning authority and Senior Architect, and their approval obtained.

5.4 Critical situations

5.4.1 Situations for calling spot quotations – competent authority

- (1) Wherever a work is to be taken up, or a material is to be procured under critical situations, such as in the case of a break-down of an essential service, or works which brooks no delay, spot quotations may be collected from reputed and established agencies dealing with the work or supply of material, and the work awarded or supply order placed immediately.
- (2) In case of a situation where there is a shortage of a critical material that is required to be arranged departmentally for the execution of a work, and its rate is not stable, and there is a wide day-to-day fluctuation in its rate in the market, spot quotations may be collected from reputed and established agencies dealing with the material, and supply order may be placed immediately for such quantities of material that are immediately required, and as are available with the agency. Spot quotations should be collected by EE or AE only
- (3) Prior approval of such authority should be obtained, in oral if not in writing, before awarding the work or placing the supply order. Reference thereof should be mentioned while forwarding the case for obtaining the written approval of this authority, and the same should be sought at the earliest possible opportunity but not later than 10 days.

5.5 Progress reports – submission by the contractor

- (1) Apart from the progress reports which are being compiled and submitted to higher authorities from various levels in the department, there should be a stipulation in the contract for large value works, say, Rs.15 crores and above, or as may be decided by the NIT approving authority, for the contractor to submit monthly progress report of the work in a computerised form. The progress report shall contain the following, apart from whatever else may be required as specified:
 - (i) Project information, giving the broad features of the contract.
 - (ii) Introduction, giving a brief scope of the work under the contract, and the broad structural or other details.
 - (iii) Construction schedule of the various components of the work through a bar chart for the next three quarters (or as may be specified), showing the milestones, targeted tasks and upto date progress.
 - (iv) Progress chart of the various components of the work that are planned and achieved, for the month as well as cumulative upto the month, with reasons for deviations, if any, in a tabular format.
 - (v) Plant and machinery statement, indicating those deployed in the work, and their working status.
 - (vi) Man-power statement, indicating individually the names of all the staff deployed in the work, along with their designations.
 - (vii) Financial statement, indicating the broad details of all the running account payments received upto date, such as gross value of work done, advances taken, recoveries effected, amounts withheld, net payments, details of cheque payments received, etc.

- (viii) A statement showing the extra and substituted items submitted by the contractor, and the payments received against them, items pending for sanction/decision by the Department, broad details of the bank Guarantees, indicating clearly their validity periods, broad details of the insurance policies taken by the contractor, if any, the advances received and adjusted.
 - (ix) Progress photographs, in colour, of the various items/components of the work done upto date, to indicate visually the actual progress of the work.
 - (x) Quality assurance and quality control tests conducted during the month, with the results thereof.
- (2) The progress report submitted by the contractor shall be checked and certified by the Junior Engineer and the Assistant Engineer, and has to be reviewed by the Executive Engineer and the Superintending Engineer, over their dated signatures.
- (3) All works costing Rs. 15 crores and above, and any work of unique importance and character irrespective of the value of the work, should have videography undertaken at various stages of construction right from the day of start of work to date of completion/occupation, covering all major events, inspections, visits by dignitaries, etc.

SECTION 6 MISCELLANEOUS

6.1 Expenditure on survey work

Where survey of site and/or digging of trial pits for the work of load bearing capacity and sub-soil observations are required to be undertaken before proceeding with the main project, the expenditure on these items should form part of the main project. In case, however, the project is abandoned as a result of these trials and examinations or some other reason, the expenditure incurred on survey works etc. should be treated on the same line as for abandoned works. Para 4.1.1 may also be seen.

6.2 Expenditure on exhibitions

Wherever exhibitions are organized or held anywhere with participation of the Central P.W.D. in it, the Director General (Works)/Additional Directors General/Chief Engineer are empowered to incur expenditure upto a limit given in Appendix-1 in each case.

6.3 Expenditure on inauguration

- (1) In case of foundation stone laying or opening ceremonies of Government projects/works, the expenditure should be restricted to items like foundation stone, erection and hire of pandals, lighting arrangements, light refreshments such as tea, coffee or cold drinks and other incidental items. The Director General (Works)/Additional Directors General/Chief Engineers are delegated powers to sanction such expenditure upto a limit given in Appendix-1 on each occasion. This expenditure shall be met from the contingent grant of the Establishments concerned, as the case may be.
- (2) In respect of deposit works, such expenditure shall be incurred with the approval of the client.

6.4 Expenditure on architectural models

Wherever required, the Chief Architect/Senior Architect shall arrange for the preparation of architectural models and their presentation. He shall invite quotations for the same and award the work. The bill(s) for such work(s) shall be verified and accepted by him, and passed on to the concerned Executive Engineer for payment.

6.5 Register of Buildings

- (1) Every Division should maintain a Register of Buildings upto date. The Executive Engineer should certify to that effect at the end of every financial year after ensuring that necessary additions in the cost and in structures are made upto date. This certificate should be furnished by him to the Superintending Engineer every year in the month of July.
- (2) The Superintending Engineer, during his inspection of the Divisional Office, should examine this register to verify that it is being posted and maintained upto date.

6.6 Safety of buildings/structures

6.6.1 Inspection of buildings/installations for safety

- (1) The Junior Engineers are required to inspect all buildings/structures twice a year to ensure that the building/structure is not unsafe for use, and they shall record a certificate to that effect. All buildings/structures are also required to be inspected once a year by the Assistant Engineer-in-charge to ensure that the building/structure is not unsafe for use. In case of electrical and other installations, the Assistant Engineer (Electrical) should inspect the same and record a certificate to that effect. Non compliance of the laid down procedure may attract serious disciplinary action against defaulters. **(Added vide OM/MAN/203)**
- (2) In case of any deficiency found in the building/structure, necessary report should be made to higher authorities, and immediate steps taken to get the same inspected by the Executive Engineer. Further action should be taken forthwith to remedy the defects.

- (3) The Divisional Officer will also inspect important buildings/structures once a year. He shall bring to the notice of his Superintending Engineer, cases where he has reasons to doubt the structural soundness of any building/structure and the latter will take such action as he considers necessary.
- (4) In case of any deficiency found in the important buildings like Prime Minister's House, Cabinet Ministers' House, Vice-President's House and houses of other V.I.P's, report about unsafe condition of the house should always be sent to the Chief Engineer, who will route it through the Ministry to the Department/Ministry concerned, if required, with his recommendations and proposal for repairs.

6.6.2 Demolition of unsafe buildings/structures

In case it is decided to demolish such unsafe building/structure, it should be disposed of without land by auction under the powers vested in competent authorities as indicated in Appendix 1.

6.7 Disposal of Government buildings

- (1) No Government building, built or purchased, should be disposed of by sale or demolition unless it has previously been ascertained that it is not required by any Department of the Government, and/or it is in dangerous condition and/or beyond economic repairs, or it is necessary to have a vacant site for constructing a Government building or structure in place of the existing one.
- (2) The powers for sale or dismantlement of public buildings are given in Appendix 1.
- (3) When a building is proposed to be dismantled, a survey report should be prepared and submitted for approval of the authority competent to sanction sale or dismantlement of the building. Where the approval of the Government of India to the proposal of demolition of the building is necessary and such approval in principle has been obtained, the Director General (Works)/Additional Directors General/Chief Engineers are delegated powers as in Appendix-I to sanction such survey reports.

6.8 Fixing Reserve Prices

After the survey report has been sanctioned, the Director General (Works)/Additional Director General/Chief Engineer shall in all cases fix the reserve price after taking into consideration the assessed salvage value of the dismantled materials only.

Note: Salvage value shall be defined as the cost of dismantled materials less the cost of dismantling it.

6.9 Disposal of purely temporary structures

- (1) Purely temporary structures erected during the construction of a work may, on the completion of the work, or when the purpose for which the same were erected has been served, be sold or dismantled under the sanction of the Executive Engineer who has been entrusted with full powers.
- (2) If the structure is proposed to be sold without land, the Executive Engineer should fix the reserve price, taking into consideration the life and condition of the structure and other local conditions subject to the minimum as laid down in para 6.8 above.

6.10 Powers for acceptance of tenders for disposal of government buildings

- (1) The building(s) should be disposed of by call of competitive tenders after giving wide publicity. The financial powers of the authorities competent to accept the tender are given in Appendix 1.
- (2) In case of emergency, the building(s), instead of being disposed of by call of tenders, may be dismantled departmentally with the specific approval of the Director General (Works)/Chief Engineer. Materials which have an intrinsic and/or aesthetic value may be retained, otherwise all the materials shall be disposed of by public auction, or in any other manner as deemed fit.

6.11 Consultations with Department of Archaeology for new constructions

- (1) In case of construction of any new building/structure at or in close proximity to any protected, monument, the Senior Architect and Superintending Engineer/Executive Engineer should invariably consult the Department of Archaeology prior to conceptualizing the design for the proposed structure.
- (2) No ancient monuments should be demolished in the set up and construction of new townships, colonies and extensions to the present structures, wherever such monuments exist without consulting Archaeological Department.
- (3) No religious edifice should be destroyed or damaged in the execution of works without the full and free consent of the persons/institutions interested in it, nor without the concurrence of the principal civil or political authority on the spot within whose jurisdiction such edifice stands.

6.12 Consultation with other departments

- (1) Consultation with local Civil Aviation Authority and Environment and Forest department etc. may be required as per location and magnitude of the Project.
- (2) Environment Impact assessment (EIA) to precede allotment of land for infrastructure development— It is now mandatory for all the infrastructural development agencies/land owning agencies to conduct Environment Impact Assessment (EIA) before allotting the land for any activity. Such agencies should decide whether the intended land use in the area could be permitted or not on the basis of EIA.
CPWD officers should therefore ensure that their recommendation for allotment of land for any infrastructural developmental should be supported with EIA clearance even though actual allotment of land is done by Ministry of Urban Development. Further, for development of any new campus, the client department should be made aware of the essentiality of EIA requirement in terms of judgment of Hon'ble Supreme Court in Civil Appeal No. 7425 of 2000. **(Added as per OM/MAN/170)**

6.13 Engagement of Private Consultants *(Modified as per OM/MAN/226 & 238)*

Chief Engineer/ Chief Architect in CPWD have been delegated powers to appoint Private Architects/Consultants subject to the following conditions laid down by MoUD.

- (i) (a) The powers for appointment of Private Architect/Consultant are delegated to Chief Engineer/Chief Architect of CPWD subject to in principle approval of ADG, CPWD. Chief Engineer/Chief Architect will exercise such powers for the works which fall within their competence to accept final bids as per delegation of financial powers. In case, amount of the bids for consultancy work exceeds the delegated financial powers of Chief Engineer/Chief Architect, approval of the competent authority i.e. ADG/DG/ Central Works Board, as the case may be, will be obtained for appointment of Private Architect/Consultant.
- (b) These powers shall not be sub-delegated to any other authority by the Chief Engineer/ Chief Architect.
- (c) The ADG-in-Charge shall be competent authority to assign extra work to the consultant and fee to be paid for the extra work so assigned. *(As per OM/MAN/226)*
- (ii) Such engagement of the Private Architect/Consultant shall be resorted to only when the competent authority is satisfied for reasons to be recorded in writing by them that either the required expertise is not available or the staff available is fully occupied and the work is of urgent nature besides satisfying themselves that it will be economical and in public interest to do so.
- (iii) Appointment of Private Architect/Consultant will be need based. Earlier limit for plan projects costing above Rs. 50 lakh and non-plan projects costing above Rs. 5 Crore, for engagement of Private Architect/Consultant is waived off.
- (iv) CPWD shall maintain a panel of Private Architects/Consultants, wherever possible. Such panel will be prepared on the basis of open advertisements, and appointment of Private Architects/Consultants in specific cases will be on the basis of invitation of quotations limited to those in the panel. Wherever the number of eligible Private Architects/Consultants is less than 5, there will be no need to maintain a panel and in such cases, engagement of Private Architects/Consultants will be done through open advertisement.
- (v) Consultancy work (such as proof checking of structural design or original structural design of typical or special structure, assignment of specialized job requiring analysis of structures and soil investigation and seeking expert advice for retro-fitting of buildings) can be assigned to IITs, NITs, Govt. Engineering College, Central Building Research Institute (CBRI) and other central/state Govt. Institutes, without call of tenders and subject to the condition (i) empanelment of such institutes and (ii) calling of quotations from the empanelled institutes.
- (vi) The estimates of fees of the Private Architect/Consultant shall be included in work estimate as a distinct item. Payment of fee to Private Architect/Consultant may be met from contingencies/savings of the project provided that if it could not be reasonably predicted with due diligence at that stage due to unforeseen situations (e.g. transfer of trained personnel, sudden increase in the workload and unforeseen complexities of the work which have cropped up at the later stage) for the reasons to be recorded in writing by the competent authority.

6.13.1 Engagement of Private Architects/Consultants for Deposit Works (Modified as per OM/MAN/185)

At present deposit works are being executed with D.C. and without D.C. as the case may be. To engage private Architects/Consultants, following procedure shall be followed;

- (i) **(Deleted)**
- (ii) In case deposit work are to be executed with Departmental Charges, then the estimates of fees of private architect/consultant need not be included in the works estimate as a distinct item since such costs are covered under D.C.
- (iii) In case of deposit works to be executed without Departmental Charges, then it should be ensured that such specific provision for the fee to be paid to architect/ consultant is available in the sanctioned estimate. In case such specific provision is not available in the sanctioned estimate, then a separate enabling estimate should be got approved from user department since fee of Architect/ consultant is to be borne by user department/client only.
- (iv) In addition to above, other provisions contained at S.No. **(i)b, (ii) and (iv)** under para 6.13 will also be applicable.

6.13.2 Engagement of agencies for preparation of Architecture drawings

Senior Architects in charge of the works shall have full powers to engage Agencies to prepare architectural drawings on the basis of drafts prepared by architect wing so as to expedite Architectural planning works and such expenditure shall be charged to contingencies of work or sanctioned provisions as the case may be and to be paid by respective EE. **(Added vide OM/MAN/213)**

6.14 Procedure for appointment of consultants:-

Ministry of finance has circulated a document namely "Manual of policies and procedure of Employment of consultants". Chief Engineers may decide the eligibility criterion & terms and conditions while taking guidance from this document. The document is available on website of Ministry of finance www.finmin.nic.in (Department of Expenditure)

6.15 Checking of Drawing prepared by Consultants

In case of technical sanction accorded by CE, PM, SE or EE the structural design and drawings prepared by Consultant and further proof checked by some other consultant, shall be authenticated "Good for Construction" by SE(P&A), PM, SE or EE respectively before issuing the drawings to contractor. **(Modified as per OM/MAN/219)**

6.16 Grievances Redressal Mechanism.

For handling public grievances relating to maintaining as well as original works, following mechanism shall be set up.

- (1) Original works
 - (i) For work costing less than Rs. 1 crore - S.E(P) of the Zone shall be designated as the Grievance Officer.
 - (ii) For works costing more than Rs. 1 Crore – Director (Works) of the Region shall be designated as the Grievance Officer. For works under ADG(S&P) & ADG(TD), Director (P&WA) in the directorate and the works of Border Region, S.E(P) BFR shall be the Grievance Officer.
- (2) Maintenance Works :
 - (i) AE(HQ) of the Circle shall be designated the grievance officer for all maintenance related complaints.
 - (ii) Appellate authority in such cases shall be the E.E(MIS)/designated E.E(P) of the Zone.

The telephone numbers and e-mail address of the officers so designated shall be displayed on all concerned service centers and the CPWD SEWA web site. Issues relating to improper service or non-adherence to laid down parameters shall be brought to the notice of these officers who can intervene and get issues resolved. A monthly summary of grievances shall be submitted by these officers to the concerned Superintending Engineer/Chief Engineer.

SECTION 6A
GREEN BUILDING NORMS
(Added as per OM/MAN/176)

6A.1 Green Building Norms

- (1) All CPWD constructions shall henceforth be Green.
- (2) Whether the constructions undertaken by CPWD are to be certified as Green or not shall be the prerogative of the client organization as it will involve third party inspections/ reviews / registration etc. which will involve both cost and time; hence client's assent to it is mandatory. Infact such certification shall be taken by the client and the role of CPWD shall be that of a facilitator. Accordingly this aspect shall be built in our MoU with clients for every project specifically. The preliminary estimate should include extra provisions, if any to cover the probable cost on certification both internal and by third party if the later is agreed to by clients in the MOU.
- (3) **Irrespective of whether the clients require certification for Green construction or not, CPWD shall have internal certification by its own officers'.**
- (4) For internal certification, CPWD shall follow GRIHA rating system of TERI.
- (5) The responsibility of internal certification indicating whether the specific criterion that falls under their respective domain has been achieved or not should lie with Senior Architect for Architecture related criterion; Superintending Engineer (C) for Civil Engineering related criterion; Superintending Engineer (E) for Electrical Engineering related criterion and Director (Horticulture)/ Superintending Engineer (C) for Horticulture related criterion. The overall internal green certification for the project shall be done by the authority who finalizes and submits the preliminary estimate of the project to the client.
- (6) The authority who finalised the preliminary estimate of the project shall develop appropriate methodology of construction as well as planning of the project and shall be responsible to include them in contract documents under a new chapter which may be named as **"Particular Specifications/Methodologies for Green Building"**.
- (7) Any variations during the execution of the project shall be approved technically by T/S according authority and financially by empowered authority.
- (8) The internal green building certification shall be expressed in following manner on following documents for the purpose of maintaining the same on permanent basis-

Sl.No.	Satisfied by	Standard Document where satisfaction is to be certified
1	Senior Architect	Preliminary Drawings / Working Drawings issued for the project. A Green Parameter Table shall be provided over the Title Block where all criterion pertaining to Architecture should be listed and satisfaction should be indicated. Reasons for dissatisfaction should be explicitly mentioned wherever the criteria is not satisfied.
2	Director (H) /Superintending	Completion Certificate if the same falls under his own competency. Engineer (C/E) as the If the Completion Certificate falls under the competency of the case may be authority other than Director (H) / SE (C/E), the said authority should obtain it from Director (H) / SE (C/E) before recording the Completion Certificate and mention the same in the Completion Certificate. A Green Parameter Table shall be provided in the Completion Certificate where all criterion pertaining to Civil / Electrical / Horticulture should be listed and satisfaction should be indicated. Reasons for dissatisfaction should be explicitly mentioned wherever a criteria is not satisfied.

- (9) A copy of the Green Parameter Table of the respective components of the project shall be sent to the preliminary estimate framing authority within fifteen days of its incorporation in

standard works document i.e. preliminary / working drawings in respect of Architectural criterion and Completion Certificate in respect of Civil / Electrical / Horticultural criterion for compilation of all components and to issue a final certification to the client for his record. A copy of the final certificate shall be sent to QCTA unit under the ADG concerned for record.

- (10) Whenever a project is executed in packages, the internal rating shall be for (1) each package separately, and (2) project as a whole.
- (11) DDoH / EE (C/E) shall facilitate the rating agencies both internal and external (where the client is desirous to have Green Rating and certification from third party agencies) by providing documentary evidences as may be required in support thereof. No document shall be shared with the external rating agencies directly. This check is only to avoid short circuit between CPWD and external rating agencies as such rating is to be obtained by clients and therefore all documents should pass through them only. Communication from the external rating agencies in respect of satisfaction / dissatisfaction of the criterion assessed by them should be indicated in Green Parameter Table in the Column "Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points" of the Table as per form attached.
- (12) Periodic QCTA checks shall technically audit the satisfaction and reasons for dissatisfaction of the various criteria as may be achievable till the date of inspection.
- (13) **TERI – GRIHA Rating system**, Proforma Green Parameter Tables 1 to 5 and Proforma Green Parameter Certificate is given in Annexure I for comprehension and follow up action.

ANNEXURE I
TERI – GRIHA Green Building Rating System
(Added as per OM/MAN/176)

The criteria have been categorized as follows.

1. Site Selection and Site planning

1.1 Conservation and efficient utilization of resource

Objective – To maximize the conservation and utilisation of resources (land, water, natural habitat, avi fauna, and energy) conservation and enhance efficiency of the systems and operations.

Criterion 1: Site Selection

Criterion 2: Preserve and protect the landscape during construction/compensatory depository forestation.

Commitment: Proper timing of construction, preserve top soil and existing vegetation, staging and spill prevention and erosion and sedimentation control. Replant, on-site, trees in the ratio 1:3 to those removed during construction.

Criterion 3: Soil conservation (till post-construction).

Commitment: Proper top soil laying and stabilization of the soil and maintenance of adequate fertility of the soil to support vegetative growth.

Criterion 4: Design to include existing site features.

Commitment: Minimize the disruption of natural ecosystem and design to harness maximum benefits of the prevailing micro-climate.

Criterion 5: Reduce hard paving on-site and /or provide shaded hard - paved surfaces.

Commitment: Minimize storm water run-off from site by reducing hard paving onsite.

Criterion 6: Enhance outdoor lighting system efficiency.

Commitment: Meet minimum allowable luminous efficacy (as per lamp type) and make progressive use of a renewable energy- based lighting system.

Criterion 7: Plan utilities efficiently and optimize on-site circulation efficiency

Commitment: Minimize road and pedestrian walkway length by appropriate planning and provide aggregate corridors for utility lines.

1.2 Health and well being

Objective –To protect the health of construction workers and prevent pollution.

Criterion 8: Provide at least, the minimum level of sanitation/safety facilities for construction workers.

Commitment: Ensure cleanliness of workplace with regard to the disposal of waste and effluent, provide clean drinking water and latrines and urinals as per applicable standard.

Criterion 9: Reduce air pollution during construction.

Commitment: Ensure proper screening, covering stockpiles, covering bricks and loads of dusty materials, wheel-washing facility, and water spraying.

2. Building planning and construction stage

Conservation and efficient utilization of resources

Objective – To maximize resource (water, energy, and materials) conservation and enhance efficiency of the system and operations.

2.1 Water

Criterion 10: Reduce landscape water requirement.

Commitment: Landscape using native species and reduce lawn areas while enhancing the irrigation efficiency, reduction in water requirement for landscaping purposes.

Criterion 11: Reduce building water use.

Commitment: Reduce building water use by applying low-flow fixtures, etc.

Criterion 12: Efficient water use during construction.

Commitment: Use materials such as pre-mixed concrete for preventing loss during mixing. Use recycled treated water and control the waste of curing water.

2.2 Energy: end use

Criterion 13: Optimize building design to reduce the conventional energy demand.

Commitment: Plan appropriately to reflect climate responsiveness, adopt an adequate comfort range, less air-conditioned areas, daylighting, avoid over-design of the lighting and air-conditioning systems.

Criterion 14: Optimize the energy performance of the building within specified comfort limits.

Commitment: Ensure that energy consumption in building under a specified category is 10%–40% less than that benchmarked through a simulation exercise.

2.3 Energy: embodied and construction

Criterion 15: Utilization of fly ash in the building structure.

Commitment: Use of fly ash for RCC (reinforced cement concrete) structures with infill walls and load bearing structures, mortar, and binders.

Criterion 16: Reduce volume, weight, and time of construction by adopting an efficient technology (e.g. pre-cast systems, ready-mix concrete, etc.).

Commitment: Replace a part of the energy-intensive materials with less energy intensive materials and/or utilize regionally available materials, which use low energy/ energy-efficient technologies.

Criterion 17: Use low-energy material in the interiors.

Commitment: Minimum 70% in each of the three categories of interiors (internal partitions, panelling/ false ceiling/interior wood finishes/ in-built furniture door/window frames, flooring) from low-energy materials/ finishes to minimize the usage of wood.

2.4 Energy: renewable

Criterion 18: Renewable energy utilization.

Commitment: Meet energy requirements for a minimum of 10% of the internal lighting load (for general lighting) or its equivalent from renewable energy sources (solar, wind, biomass, fuel cells, etc). Energy requirements will be calculated based on realistic assumptions which will be subject to verification during appraisal.

Criterion 19: Renewable energy - based hot- water system.

Commitment: Meet 70% or more of the annual energy required for heating water through renewable energy based water-heating systems.

2.5 Recycle, recharge, and reuse of water

Objective– To promote the recycle and reuse of water.

Criterion 20: Wastewater treatment

Commitment: Provide necessary treatment of water for achieving the desired concentration of effluents.

Criterion 21: Water recycle and reuse (including rainwater).

Commitment: Provide wastewater treatment on-site for achieving prescribed concentration, rainwater harvesting, reuse of treated waste water and rainwater for meeting the building's water and irrigation demand.

2.6 Waste management

Objective –To minimize waste generation, streamline waste segregation, storage, and disposal, and promote resource recovery from waste.

Criterion 22: Reduction in waste during construction.

Commitment: Ensure maximum resource recovery and safe disposal of wastes generated during construction and reduce the burden on landfill.

Criterion 23: Efficient waste segregation.

Commitment: Use different coloured bins for collecting different categories of waste from the building.

Criterion 24: Storage and disposal of waste.

Commitment: Allocate separate space for the collected waste before transferring it to the recycling/ disposal stations.

Criterion 25: Resource recovery from waste.

Commitment: Employ resource recovery systems for biodegradable waste as per the Solid Waste Management and handling Rules, 2000 of the MoEF. Make arrangements for recycling of waste through local dealers.

2.7 Health and well-being

Objective –To ensure healthy indoor air quality, water quality, and noise levels, and reduce the global warming potential.

Criterion 26: Use of low-VOC (volatile organic compounds) paints/ adhesives / sealants.

Commitment: Use only low VOC paints in the interior of the building. Use water – based rather than solvent based sealants and adhesives.

Criterion 27: Minimize ozone – depleting substances.

Commitment: Employ 100% zero ODP (ozone depletion potential) insulation; HCFC (hydrochlorofluorocarbon)/ and CFC (chlorofluorocarbon) free HVAC and refrigeration equipments and/ Halon-free fire suppression and fire extinguishing systems.

Criterion 28: Ensure water quality.

Commitment: Ensure groundwater and municipal water meet the water quality norms as prescribed in the Indian Standards for various applications (Indian Standards for drinking [IS 10500-1991], irrigation applications [IS 11624-1986]. In case the water quality cannot be ensured, provide necessary treatment of raw water for achieving the desired concentration for various applications.

Criterion 29: Acceptable outdoor and indoor noise levels.

Commitment: Ensure outdoor noise level conforms to the Central Pollution Control Board– Environmental Standards–Noise (ambient standards) and indoor noise level conforms to the National Building Code of India, 2005, Bureau of Indian Standards, Part 8–Building Services; Section 4–Acoustics, sound insulation, and noise control.

Criterion 30: Tobacco and smoke control.

Commitment: Zero exposure to tobacco smoke for non-smokers and exclusive ventilation for smoking rooms.

Criterion 31: Provide the minimum level of accessibility for persons with disabilities.

Commitment: To ensure accessibility and usability of the building and its facilities by employees, visitors, and clients with disabilities.

3. Building operation and maintenance

Objective – Validate and maintain 'green' performance levels/adopt and propagate green practices and concepts.

Criterion 32: Energy audit and validation.

Commitment: Energy audit report to be prepared by approved auditors of the Bureau of Energy Efficiency, Government of India.

Criterion 33: Building operation and maintenance .

Commitment: Validate and maintain 'green' performance levels/adopt and propagate green practices and concepts. Ensure the inclusion of a specific clause in the contract document for the commissioning of all electrical and mechanical systems to be maintained by the owner, supplier, or operator. Provide a core facility/service management group, if applicable, which will be responsible for the operation and maintenance of the building and the electrical and mechanical systems after the commissioning. Owner/builder/occupants/service or facility management group to prepare a fully documented operations and maintenance manual, CD, multimedia or an information brochure listing the best practices/do's and don'ts/maintenance requirements for the building and the electrical and mechanical systems along with the names and addresses of the manufacturers/suppliers of the respective system.

Criterion 34: Innovation points.

Commitment: Four innovation points are available under the rating system for adopting criteria which enhance the green intent of a project, and the applicant can apply for the bonus points. Some of the probable points, not restricted to the ones enumerated below, could be

1. Alternative transportation
2. Environmental education
3. Company policy on green supply chain
4. Lifecycle cost analysis
5. Enhanced accessibility for physically/mentally challenged.
6. Any other criteria proposed by the client

Scoring points

The system is guiding and performance-oriented where points are earned for meeting the design and performance intent of the criteria. Each criterion has a number of points assigned to it. It means that a project intending to meet the criterion would qualify for the points. Compliances, as specified in the relevant criterion, have to be submitted in the prescribed format. While the intent of some of the criteria is self-validating in nature, there are others for example : energy consumption, thermal and visual comfort, noise control criteria, and indoor pollution levels need to be validated on-site through performance monitoring. The points related to these criteria (specified under the relevant sections) may be awarded through monitoring, validation, and documents/photographs to support the award of point. QCTA report in respect of such criteria shall be the binding factor for award of points.

The 100 point system consists of some core points, which are mandatory to be met while the rest are optional points, which can be earned by complying with the commitment of the criterion for which the point is allocated. Different levels of certification (one star to five star) can be awarded based on the number of points earned. The minimum points required for certification is 50. Constructions scoring 50 to 60 points, 61 to 70 points, 71 to 80 points, and 81 to 90 points will get one star, 'two stars', 'three stars' and 'four stars' respectively. A score of 91 to 100 points will get the maximum rating viz. five stars.

Evaluation procedure of criterion

List of criteria	Points	Remarks	Unit of CPWD responsible for the criterion
Criteria 1: Site Selection	1	Partly mandatory	Architecture
Criteria 2: Preserve and protect landscape during construction /compensatory depository forestation.	5	Partly mandatory	3 by Architecture, 2 by Horticulture
Criteria 3: Soil conservation (post construction)	4		Civil
Criteria 4: Design to include existing site features	2	Mandatory	Architecture
Criteria 5: Reduce hard paving on site	2	Partly mandatory	Architecture
Criteria 6: Enhance outdoor lighting system efficiency	3		Electrical
Criteria 7: Plan utilities efficiently and optimize on site circulation efficiency	3		Architecture
Criteria 8: Provide, at least, minimum level of sanitation/ safety facilities for construction workers	2	Mandatory	Civil
Criteria 9: Reduce air pollution during construction	2	Mandatory	Civil
Criteria 10: Reduce landscape water requirement	3		Horticulture
Criteria 11: Reduce building water use	2		Civil
Criteria 12: Efficient water use during construction	1		Civil
Criteria 13: Optimize building design to reduce conventional energy demand	6	Mandatory	Architecture
Criteria 14: Optimize energy performance of building within specified comfort	12		Electrical
Criteria 15: Utilization of flyash in building structure	6		Civil
Criteria 16: Reduce volume, weight and time of construction by adopting efficient technology (e.g. precast systems, ready-mix concrete, etc.)	4		Civil
Criteria 17: Use low-energy material in interiors	4		Architecture
Criteria 18: Renewable energy utilization	5		Electrical
Criteria 19: Renewable energy based hot-water system	3		Electrical
Criteria 20: Waste water treatment	2		Civil
Criteria 21: Water recycle and reuse (including rainwater)	5		Civil
Criteria 22: Reduction in waste during construction	2		Civil
Criteria 23: Efficient waste segregation	2		Civil
Criteria 24: Storage and disposal of waste	2		Civil
Criteria 25: Resource recovery from waste	2		Civil
Criteria 26: Use of low - VOC paints/ adhesives/ sealants.	4		Civil
Criteria 27: Minimize ozone depleting substances	3	Mandatory	Electrical
Criteria 28: Ensure water quality	2	Mandatory	Civil
Criteria 29: Acceptable outdoor and indoor noise levels	2		Architecture
Criteria 30: Tobacco and smoke control	1		Architecture
Criteria 31: Universal Accessibility	1		Architecture
Criteria 32: Energy audit and validation		Mandatory	Electrical
Criteria 33: Operations and maintenance protocol for electrical and mechanical equipment	2	Mandatory	Electrical
Total score	100		
Criteria 34: Innovation (Beyond 100)	4		Architecture, Civil, Electrical, Horticulture
Total score	104		

GREEN PARAMETER TABLE 1 – ARCHITECTURE

PACKAGE			
PROJECT			
Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 1: Site Selection	1		
Criteria 2: Preserve and protect landscape during construction/ compensatory depository forestation.	3		
Criteria 4: Design to include existing site features	2		
Criteria 5: Reduce hard paving on site	2		
Criteria 7: Plan utilities efficiently and optimize on site circulation efficiency	3		
Criteria 13: Optimize building design to reduce conventional energy demand	6		
Criteria 17: Use low-energy material in interiors	4		
Criteria 29: Acceptable outdoor and indoor noise levels	2		
Criteria 30: Tobacco and smoke control	1		
Criteria 31: Universal Accessibility	1		
Total score	25		
Criteria 34: Innovation (Beyond 100)	4		
Total score	29		

To be signed by SA

(To be placed on preliminary and Working drawings above the Title Block)

GREEN PARAMETER TABLE 2 – CIVIL

PACKAGE			
PROJECT			
Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 3: Soil conservation (post construction)	4		
Criteria 8: Provide, at least, minimum level of sanitation/safety facilities for construction workers	2		
Criteria 9: Reduce air pollution during construction	2		
Criteria 11: Reduce building water use	2		
Criteria 12: Efficient water use during construction	1		
Criteria 15: Utilization of flyash in building structure	6		
Criteria 16: Reduce volume, weight and time of construction by adopting efficient technology (e.g. pre-cast systems, ready-mix concrete, etc.)	4		
Criteria 20: Waste water treatment	2		

Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 21: Water recycle and reuse (including rainwater)	5		
Criteria 22: Reduction in waste during construction	2		
Criteria 23: Efficient waste segregation	2		
Criteria 24: Storage and disposal of waste	2		
Criteria 25: Resource recovery from waste	2		
Criteria 26: Use of low - VOC paints/ adhesives/ sealants.	4		
Criteria 28: Ensure water quality	2		
Total score	42		
Criteria 34: Innovation (Beyond 100)	4		
Total score	46		

To be signed by SE (C)

(To be placed on Completion Certificate issued by SE).

GREEN PARAMETER TABLE 3 – ELECTRICAL

PACKAGE			
PROJECT			
Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 6: Enhance outdoor lighting system efficiency	3		
Criteria 14: Optimize energy performance of building within specified comfort	12		
Criteria 18: Renewable energy utilization	5		
Criteria 19: Renewable energy based hot-water system	3		
Criteria 27: Minimize ozone depleting substances	3		
Criteria 32: Energy audit and validation			
Criteria 33: Operations and maintenance protocol for electrical and mechanical equipment	2		
Total score	28		
Criteria 34: Innovation (Beyond 100)	4		
Total score	32		

To be signed by SE(E)

(To be placed on completion certificate issued by SE)

GREEN PARAMETER TABLE 4 – HORTICULTURE

PACKAGE			
PROJECT			
Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 2: Preserve and protect landscape during construction /compensatory depository forestation.	2		
Criteria 10: Reduce landscape water requirement	3		
Total score	5		
Criteria 34: Innovation (Beyond 100)	4		
Total score	9		

To be signed by DoH / SE (C)

(To be placed on Completion Certificate issued by DoH / SE).

GREEN PARAMETER TABLE 5 – COMPREHENSIVE

PACKAGE			
PROJECT			
Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 1: Site Selection	1		
Criteria 2: Preserve and protect landscape during construction /compensatory depository forestation.	5		
Criteria 3: Soil conservation (post construction)	4		
Criteria 4: Design to include existing site features	2		
Criteria 5: Reduce hard paving on site	2		
Criteria 6: Enhance outdoor lighting system efficiency	3		
Criteria 7: Plan utilities efficiently and optimize on site circulation efficiency	3		
Criteria 8: Provide, at least, minimum level of sanitation/safety facilities for construction workers	2		
Criteria 9: Reduce air pollution during construction	2		
Criteria 10: Reduce landscape water requirement	3		
Criteria 11: Reduce building water use	2		
Criteria 12: Efficient water use during construction	1		
Criteria 13: Optimize building design to reduce conventional energy demand	6		
Criteria 14: Optimize energy performance of building within specified comfort	12		
Criteria 15: Utilization of flyash in building structure	6		
Criteria 16: Reduce volume, weight and time of construction by adopting efficient technology (e.g. pre-cast systems, ready-mix concrete, etc.)	4		

Nomenclature of criterion	Maximum Points	Points earned	Remarks indicating reasons for dissatisfaction if points earned are lesser than maximum points
Criteria 17: Use low-energy material in interiors	4		
Criteria 18: Renewable energy utilization	5		
Criteria 19: Renewable energy based hot-water system	3		
Criteria 20: Waste water treatment	2		
Criteria 21: Water recycle and reuse (including rainwater)	5		
Criteria 22: Reduction in waste during construction	2		
Criteria 23: Efficient waste segregation	2		
Criteria 24: Storage and disposal of waste	2		
Criteria 25: Resource recovery from waste	2		
Criteria 26: Use of low - VOC paints/ adhesives/sealants.	4		
Criteria 27: Minimize ozone depleting substances	3		
Criteria 28: Ensure water quality	2		
Criteria 29: Acceptable outdoor and indoor noise levels	2		
Criteria 30: Tobacco and smoke control	1		
Criteria 31: Universal Accessibility	1		
Criteria 32: Energy audit and validation			
Criteria 33: Operations and maintenance protocol for electrical and mechanical equipment	2		
Total score	100		
Criteria 34: Innovation (Beyond 100)	4		
Total score	104		

(To be signed by authority under whose competency the preliminary estimate of the project falls)

**OFFICE MEMORANDUM
ISSUED BY AUTHORITY OF CHIEF ENGINEER**

No..... DATED: ____

GREEN PARAMETER CERTIFICATE

Certifiedthatthe..... package
.....
..... of the project.....
sanctioned.....vide.....No.....dated.....conforms to.....star ratings of GRIHA rating system of TERI as per assessment made by CPWD.

(To be signed by authority under whose competency the preliminary estimate of the project falls)

1. Client
2. QCTA Unit of ADG concerned.

CHAPTER II

WORK ACCOUNTS

SECTION 7

MEASUREMENT BOOKS (MBs)

7.1 General

- (1) Expenditure on the construction or maintenance of a work may be divided broadly into two classes, viz. (i) Cash (ii) Stock Charges. In addition to the main charges, there are other charges affecting the cost of work. For example, there may be charges incurred in other Divisions, Departments or Government, materials received from them or services rendered by them, or there may be cash receipts such as are taken in reduction of expenditure in accordance with the rules. To account for all these charges affecting the cost of work, separate accounts are maintained in Sub-Division/ Divisional Offices for recording
 - (i) the cost of individual works, and
 - (ii) the transactions of individual Contractors/Suppliers. These are known as works accounts. The accounts of manufacture operations and non-government works are maintained in the same manner as for Government works. (Para 10.1.1 of CPWA code may be referred to).
- (2) Cash charges of works consist of payments to (i) labourers and members of the work-charged establishment of their wages, and (ii) contractors and others for work done or other services rendered. The cost of materials procured specially for work is charged to the accounts of works by transfer credit to the "Material Purchase Settlement Suspense Account". The payments to suppliers are governed by the same rules as payments to contractors for work done (Para 10.2.1 of CPWA code may be referred to).
- (3) The payments to the work charged staff are made monthly in the same manner as it is made to the regular staff but on a different bill form CPWA 29, and are charged direct to the work on which the labour is actually employed.
- (4) The payments to contractors and others for the work done or other services rendered are made on the basis of measurements recorded in the Measurement Book. Subsidiary instructions regarding maintenance of the measurement books including standard Measurement Books and review of measurement books are given in subsequent paras here under.

7.2 Writing of Measurement Book

- (1) The measurement book is the basis of all accounts of quantities whether of works done by Contractors or by labourers employed departmentally, or materials received. It should be so written that the transactions are readily traceable.
- (2) These books should be considered as very important accounts records and maintained very carefully and accurately as these may have to be produced as evidence in a court of law, if and when required.

7.3 Register of Measurement Books

- (1) All the Measurement Books belonging to a Division, should be numbered serially. A register should be maintained in form CPWA 92 showing the serial number of each book, on receipt, Sub-Division to which it is issued, the date of issue, date of its return to the Divisional Office and date of its record after the required review in the Divisional Office has been completed.
- (2) A similar register should be maintained in the Sub-Divisional Office showing the names of persons, i.e. Assistant Engineer/ Junior Engineer, to whom the Measurement Books are issued.

7.4 Transfer of Measurement Books

- (1) The Measurement Books that are no longer required to be used in the Sub-Division or with the Junior Engineer should be withdrawn promptly even though not completely written up and re-issued.
- (2) When an Assistant Engineer or Junior Engineer in charge of the work or stores is transferred he should hand over the Measurement Books issued to him to his successor and these should be shown as received back from him and re-issued to the relieving Officer. The transfer should also be recorded in the Measurement Book after the last entry in each book under dated signature of the relieving Officer and relieved Officer.

7.5 Recording of measurements

- (1) Entries at commencement of measurements
Each set of measurements to be recorded should commence with entries stating:
 - (i) In the case of bills for works done:
 - (a) Full name of work as given in the agreement/estimate.
 - (b) Location of work.
 - (c) Name of contractor.
 - (d) Number and date of agreement.
 - (e) Date of written order to commence work.
 - (f) Date of actual completion of work.
 - (g) Date of recording measurements.
 - (h) Reference to previous measurements.
 - (ii) In the case of bills for supply of materials:
 - (a) Name of supplier.
 - (b) Number and date of supply order/agreement.
 - (c) Purpose of supply in one of the following forms as applicable to the case:
 - (i) Stock (for all supplies for stock purpose).
 - (ii) "Purchase" for direct issue to the work (full name of the work as given in the estimate shall be mentioned).
 - (iii) "Purchase" for (full name of work as given in estimate) for issue to contractor on..... :
 - (d) Date of written order to commence the supply.
 - (e) Date of actual supply.
 - (f) Date of recording measurements.
- (2) Writing of abstract
 - (i) A suitable abstract should then be prepared which should collect in the case of measurements for works done, the total quantities of each distinct item of work relating to each sanctioned sub-head. The measurement books meant for this purpose contain pages in singleton. Details of quantities, rate and amount of each item for every bill are entered in this Measurement Book in a tabular form.
 - (ii) For recording measurements and also for preparing abstract, the agreement item No., both in words as well as in figure, should be given neatly along with description of the item in full or in abbreviated form.
- (3) Nomenclature of item
 - (i) In case of extra/substituted item of work that is not covered in the agreement, the full nomenclature shall be reproduced in the Measurement Book and the bill form.
 - (ii) The full nomenclature of the items shall be adopted in preparing abstract of final bill in the Measurement Book and also in the bill form for final bills.
- (4) Cross reference in case of running account bill
If the measurements are taken in connection with a running contract, a reference to the last set of measurements, if any, should be given.

- (5) Recording of date of completion
 - (i) If the entire job or contract has been completed, the date of completion should be duly recorded.
 - (ii) If the measurements taken are the first set of measurements on a running account, or the first and final measurements, this fact should be suitably noted against the entries in the Measurement Book, and in the latter case, the actual date of completion should be recorded.
- (6) Neat recording of measurements
All measurements should be recorded neatly in the Measurement Book.
- (7) Signature of the contractor
The signature of the contractor or his authorised representative should be obtained in the Measurement Book for each set of measurements.
- (8) Measurements in ink
The measurements shall be recorded in ink.
- (9) Making corrections in measurements
 - (i) No entry shall be erased or overwritten. If a mistake is made, it should be corrected by crossing out the incorrect words or figures and inserting the correction. The correction thus made shall be initialed and dated by the officer recording/checking measurements.
 - (ii) When any measurements are cancelled or disallowed these must be endorsed by the dated initials of the Officer ordering the cancellation or by a reference to his orders, initialed by the Officer who made the measurements, the reasons for cancellation being also recorded.
- (10) Page numbering
 - (i) The pages of the Measurement Books should be machine numbered.
 - (ii) Entries should be recorded continuously and no blank page left or torn out. Any pages or space if left out blank inadvertently should be cancelled by diagonal lines, the cancellation being attested and dated.
- (11) Recording of measurements only by authorised persons
All items of work in a project irrespective of their cost shall be measured and recorded by the Junior Engineer-in-charge of the work. It is, however, open to the Assistant Engineer or the Executive Engineer to record measurements for any particular item of work himself.
- (12) Measurement of repetitive works
In case of works of repetitive type, detailed measurements of 20% of the total number of units, subject to a minimum of 20 units, need only be recorded.
- (13) Certification of measurements
The person recording the measurements should record a dated certificate "Measured by me" over his full signature in the Measurement Book.

7.5.1 Where measurements need not be recorded

- (1) No measurements need be recorded for petty purchases made through permanent imprest accounts. It is adequate in such cases that the Junior Engineer or the Assistant Engineer makes an endorsement on the original and duplicate copies of the cash vouchers/bills of the suppliers regarding verification of the same, and the page number of the MAS register in which he has taken the material(s).
- (2) The material(s) may be issued for the work(s) from the MAS register as usual. Abstract of vouchers can be drawn in the Measurement Books for continuity of record keeping.

7.6 Notice to the contractor before recording measurements – action to be taken if he fails to respond

- (1) Clause 6 of Conditions of Contract in General Conditions of Contract provides that before taking any measurement of any work, the Engineer-in-Charge or a subordinate deputed by him shall give 3 days' notice to the contractor. If the contractor fails to attend at the measurements after such

notice or fails to countersign or to record objection within a week from the date of measurement, then the measurements recorded in his absence by the Engineer-in-Charge or by the subordinate deputed by him as the case may be shall be deemed to have been accepted by the contractor.

- (2) It happens that sometimes when the measurements recorded by the Junior Engineer are not accepted by the contractor, the fact is not brought to the notice of his superior officers i.e. Assistant Engineer/Executive Engineer immediately, with the result that prompt action under clause 6 of contract form CPWD 7/8 cannot be taken. The idea of clause 6 is to bind the contractor to file objection, if any, on his side to the measurement recorded by the Departmental Officers within a definite period so as to avoid any disputes later on. It has been decided that in all cases of works executed on contract forms CPWD 7/8, when the contractor fails to attend at the time of measurements or to countersign the measurement books in token of his having accepted the measurements recorded therein, or to record the difference, the Junior Engineer/Assistant Engineer taking the measurements should report this fact within 72 hours to the Assistant Engineer/Executive Engineer in writing. The latter, on receipt of such a report, should take immediate action under clause 6 *ibid*, and inform the contractor in writing that the measurements as taken by the Junior Engineer/Assistant Engineer are final as per clause 6 of form CPWD 7/8, and no claim whatsoever on this account shall be entertained.
- (3) These instructions will not apply in cases where the contractor is to submit computerised measurements to the Department as per provisions under para 7.12.

7.7 Preparation of bill

- (1) On completion of the abstract, the Measurement Book should be submitted to the Sub-Divisional Officer, who after carrying out his test check should enter the word "Check and bill" with his dated initials. The Sub-Divisional Clerk should then check the calculation of quantities in the abstract, and the bill in case of work carried out by contract, and should then place the Measurement Book and the bill before the Sub-Divisional Officer who, after comparing the two, should sign the bill and the Measurement Book at the end of the abstract.
- (2) From the Measurement Book all quantities should be clearly traceable into the documents on which payments are made. When a bill is prepared for a work or supplies, every page containing the detailed measurements must be invariably scored out by a diagonal red ink line. When the payment is made, an endorsement must be made in red ink, on the abstract of measurements, giving a reference to the number and date of the voucher of payment.
- (3) Corrections to calculations or rates in the Measurement Book
Any corrections to calculations or rates made in the Sub-Divisional or Divisional Office should be made in red ink and brought to the notice of the Sub-Divisional Officer or the Divisional Officer, as the case may be and of the person recording the original measurements. In the case of final bills, the payment should be deferred until the corrections have been accepted by the person making the measurements. All corrections made by the clerical staff should be in red ink.
- (4) Payment for work done through daily rated labour
When work which is susceptible of measurement is carried out by daily rated labour, similar plan should be adopted, the quantities of work done as shown on the Muster Roll being compared with the entries in the Measurement Book before payment is authorised.

7.8 Movement of Measurement Books

Measurement books should be sent only by Registered Post or through Special Messenger.

7.9 Recording measurements of supply/issue/laying of steel

- (1) Supply of steel
In case of supply of steel, the measurements should be recorded:
 - (i) On actual weight basis for bars upto 10 mm dia, and

- (ii) On standard sectional weight basis for bars above 10 mm dia. In the latter case, the measurements should indicate the total number with length of bars in each bundle, total number of bundles, standard weight running meter weight of each bundle, total weight of all bundles, etc. The entry should not be a copy from the invoice issued by the firm.
- (2) Issue of steel
The issue of steel shall be made in the same manner as for the supply as described in sub-para (1) above.
- (3) Laying of steel
 - (i) Wherever the structural drawings that are approved by the Department for a work contain the bar bending schedule, the measurements of reinforcement bars laid shall be recorded on the basis of this schedule after due verification that they have been laid in conformity to the structural drawings. The bar bending schedule shall show the extra percentages that shall be allowed for laps and wastages. Detailed measurements of each and every bar shall be dispensed with in such cases.
 - (ii) In other cases, the bar bending schedule shall be prepared by the contractor, and checked and signed by the Engineer – in - charge before the bending of bars is taken up at site.
- (4) Test check of steel
Para 7.10.2(3) may be referred to for test check of steel.

7.10 Test checking of Measurements

7.10.1 Test check by the Assistant Engineer

- (1) The Assistant Engineer must satisfy himself before passing a bill for payment, or before submitting it to the Divisional Officer for payment, that the work or supply billed for has actually been carried out/completed in accordance with the terms and conditions of the contract. He should personally inspect all works of any magnitude before authorizing final payments in connection therewith.
- (2) In addition to the above, he is required to check measure the works in his charge as below:
 - (i) All items of work in a project irrespective of their cost, shall be measured and recorded by the Junior Engineer-in-charge of the work. It is, however, open to the Assistant Engineer to record measurements for any particular item of work himself. In case of absence of Junior Engineer, the Assistant Engineer may be asked to record measurements .
 - (ii) The Officer accepting the tender for any work may stipulate and require the Assistant Engineer to record measurements himself or exercise 100% check on the measurements recorded by his subordinate for any item including those, which, owing to their situation, cannot subsequently be checked measured or which have very high unit rates or which in the opinion of the Officer are important.

Important items for Measurements

Important works, within meaning of the above, include items which owing to the situation cannot be subsequently checked or which have very high unit rates. For guidance, these items are classified generally as below :-

Items of work which owing to their situation cannot subsequently be checked.

- (i) All work below ground level such as Concrete, Masonry, Steel work etc. in foundation; and
- (ii) Fabricated Steel work in columns, beams, etc. which are encased either in masonry or concrete, reinforcement in RCC/RB work.
- (iii) Wood work, Iron work etc. hidden by ceilings, wall panelling or floor boardings.
- (iv) Bitumen painting of roofs under mud phuska and tiles paving or under terrace concrete.
- (v) Water proofing compounds used in gauging cement.
- (vi) Lines of pipes buried in floor or masonry in Internal sanitary, water supply or drainage installations.
- (vii) Earthing installation, cable laying etc.

Items of works which are considered to have very high unit rates:-

- (i) RCC Work.
 - (ii) Items in sunk ashlar stone or marble work, plain sunk or moulded in walls, columns, arches or domes.
 - (iii) Stone or marble work in wall lining. All steel cladding, structural glazing etc.
 - (iv) All wood work in Chowkhats, frames or trusses in Indian or Burmah Teakwood.
 - (v) All joinery work in shutters, trellis works, miscellaneous wood work etc. whether in Indian Teak or Burma Teakwood.
 - (vi) All brass, oxidised brass or other similar costly fittings of doors, windows etc. where payable separately.
 - (vii) All major equipments for AC, lifts, Generator sets, Sub-station equipments, fire works, any other items desired by Engineer-in-charge.
- (3) In case of works at headquarters of the Sub-Division, AE should check measure not less than 50% of the value of the measurements recorded by his Junior Engineer before any running/final bill is paid.
- (4) In case of works outside headquarters of the Sub-Division, the Assistant Engineer should check measure upto 50% of the value of work done before preparing final bills or before making payment of alternate running/final bills.
- Note:** For the purpose of test check, "measurements" means the "corresponding monetary value of measurements of work done." This, however, does not apply to "Levels", in which case the test check has to be based on the number of levels recorded.
- (5) While test checking the works of repetitive type, the Assistant Engineer (Elect) should test check 100% of all items of at least one unit, taken at random, besides test checking isolated and individual items in other units to bring the total extent of check measurement to the desired limit of 50% of value of work done.
- (6) Besides the mandatory test check of RCC and hidden items of work, the test check of measurements by Assistant Engineer shall also include not less than 50% of the plumbing work for sanitary and water supply wherever applicable.
- (7) In the case of works outside the headquarters of the Sub-Division costing upto 20% of his tender acceptance power, check measurements by the Assistant Engineer need not be insisted upon. He will, however, have to accept general responsibility for the correctness of the bill as a whole.

7.10.2 Test check by the Executive Engineer

- (1) The Executive Engineer should test check 10% of the measurements recorded by his subordinates at least every alternate bill for works at his headquarter, and at least every third bill for works outside his headquarter. Measurements selected by EE should be independent of measurements test checked by AE. However this will not apply to items, the measurement of which are achecked 100% by AE. In respect of works costing up to 20% of his tender acceptance power at places outside the headquarter of the division, and in case of works costing up to 10% of his tender acceptance power at the headquarter of the division, the Executive Engineer may, in his discretion, authorise payment without any test check by him. He will, however, have to accept general responsibility for the correctness of the bill as a whole.
- (2) Test check of RCC and plumbing works
- (i) Test check of the Executive Engineer shall also include at least 10% test check of the measurements of RCC items so as to ensure structural safety of building.
 - (ii) Besides the mandatory test check of RCC and hidden items of work, the test check of measurements by the Executive Engineer shall also include not less than 10% of the plumbing work for sanitary and water supply.
- (3) Test check of steel
- (i) In the case of receipt of steel, the Executive Engineer shall test check 10% of the total consignment received in a month. Any consignment test checked by the Executive Engineer should be checked by him 100%.

- (ii) Permitted variation between the quantities as per supplier's bills and as received and accounted for in stock account, is 0.5% in the steel bars upto and including 12 mm dia, and 1% in the case of steel bars of higher dia.
- (iii) If in any consignment the variation on lower side exceeds the aforesaid limits, 100% check of the measurements shall be carried out by the Executive Engineer, and detailed investigation into the reasons for the shortage recorded.
- (4) Test check in road works
In case of road work involving supplying and laying of sub-base and base course material:
 - (i) The stacks shall be uniformly distributed along the road. The collection of stone metal shall be completed for the entire work, or for complete length of 1 km, or as directed by the Engineer-in-Charge, and measured before the work of laying and consolidation is taken up in hand.
 - (ii) The Assistant Engineer shall test check not less than 50%, and the Executive Engineer, not less than 10% of the supply of materials in each length of 1 km before the work of laying is started.
- (5) Test checks to be attested
The individual items checked should be clearly shown in the Measurement Book, and the result recorded by the officer concerned. The items thus checked should be attested by the dated initials of the checking Officer.
- (6) Consolidated record of checks/test checks
 - (i) A collective record of all the check carried out from time to time will be prepared in each Measurement Book in the following tabular form:
 - (a) Date of check.
 - (b) Page recording measurements subject to test check.
 - (c) Value of measurements checked.
 - (d) Result of the check exercised.
 - (e) Dated initials and designation of the checking officer.
 - (ii) The result will be indicated by the word "Satisfactory" or "Unsatisfactory" as judged at the time on merits of each case. Unsatisfactory result will be communicate to the JE or both the JE and AE as the case may be.

7.11 Recording measurements for earth levelling work

7.11.1 Level Books

In case of levelling operations and earthwork, measurements are required to be recorded in Level Books in addition to Measurement Books. The Level Books should be numbered, accounted for and handled like Measurement Books.

7.11.2 Preparatory works

Before starting the earth work, the following steps should be taken:

- (1) Original ground levels should be recorded in the Level Book in the presence of the contractor or his authorised representative, and should be signed by him and the Departmental Officer who records the levels. All the local mounds and depressions should be indicated clearly in the drawing and the field Level Book, and should be checked by the Assistant engineer/Executive Engineer before the levelling work is started.
- (2) A suitable baseline should be fixed with permanent masonry pillars at distances not exceeding 150 metres to provide a permanent reference line for facilitating check work. The base line(s) should be entered in the Level Book with co-ordinates. These baselines should be maintained till the final payment for the work has been made.

- (3) While recording the levels, it should be ensured that the circuit is closed by taking final levels of the starting point or any other point, the R.L. of which was previously determined.
- (4) Plans showing initial levels, location of bench marks and reduced levels, should be prepared and signed by both the parties and attached to the agreement before commencement of the work.

7.11.3 Test check of the levels

- (1) The Assistant Engineer should exercise test check at least to the extent of 50%, and the Executive Engineer at least to the extent of 10% where the value of this item of work exceeds 10% of the tender acceptance power of the Assistant Engineer.
- (2) The test check of the levels should be carried out independently by each officer, and the readings should be recorded in the prescribed Level Book in red ink against the old levels which should be neatly scored out wherever necessary. If the test check carried out reveals serious mistakes in the original levels, these should be taken or re-taken and re-checked.
- (3) The test check carried out by an Officer should be as representative as possible for the entire work done.
- (4) On completion of work, the levels should again be recorded in the Level Book and the contractor's signatures obtained. These levels should also be test checked by the Assistant Engineer/Executive Engineer to the same extent as indicated in (1) within one month of the date of completion of the earth work, and according to the procedure as laid down in the case of initial levels as indicated above.
- (5) The formation levels as per final execution of the work should be compared with the proposed formation levels and the work got rectified within permissible tolerance.

7.11.4 Payment for levelling work

- (1) Every fourth running bill and the final bill should be paid on the basis of levels.
- (2) Intermediate payments can, however, be made on the basis of borrow pit measurements. The Executive Engineer should take care that the quantities thus assessed are not in any case more than the actual work done.

7.11.5 Large scale levelling work

- (1) In case of large scale levelling work involving both cutting and filling, an accurate site plan should be prepared before the work is commenced. The portions requiring cutting and filling shall then be divided into squares and corresponding squares into filling, which are complementary to the squares in cutting given the same number.
- (2) A table may be written upon the plan showing leads involved between the various complementary squares. This would form a lead chart for the work to be done.
- (3) Before the work of levelling is commenced, the lead chart shall be checked by the Assistant Engineer in the presence of the contractor or his authorised representative, and his signatures shall be obtained on the same. This should form an integral part of the contract and should be duly signed by both the integral parties before commencement of the work.
- (4) The quantity payable for earthwork shall be lower of the quantity derived from cutting or filling. The payment for lead shall be based on lead chart prepared in the aforesaid manner.

7.11.6 Import of earth

In case of earth to be imported, the area from where the earth is to be imported, should be pre-determined wherever possible before the start of the work, and wherever feasible, the average lead should be worked out and stipulated in the tender. After this is determined, initial levels of the area to be filled should be recorded. The levels should be properly checked during the progress of work and on completion.

7.12 Computerised Measurement Books (CMB's) and Bills to be submitted by the contractor**7.12.1 Application and format of the Computerised M.B.**

- (1) In works of estimated cost put to tender of Rs. 15 lakh and above, approving authority, the conventional Measurement Books shall be replaced by a bound volume of computerised measurements to be furnished by the contractor, duly machine numbered for the pages, and with an MB number given by the Division Office. The pages of these Measurement Books shall be of A-4 size. All these Measurement Books belonging to a Division shall be serially numbered, and a record of these Computerised Measurement Books shall be maintained in a separate Register in Form CPWA 92.
- (2) The same format as in existing Measurement Books shall be used for the Computerised Measurement Books. The measurements shall be carried forward from the previous recorded measurements as per the existing procedure.

7.12.2 Mode of measurements

- (1) The measurements shall be recorded and entered in computerised format in the first instance by the contractor, and a hard copy shall be submitted to the Department. All entries shall be made exactly as per the existing procedure.
- (2) These measurements shall then be 100% checked by the Junior Engineer. If Junior Engineer is not available, the Assistant Engineer shall perform 100% check of the measurements. The contractor shall incorporate all such changes or corrections, as may be done during these checks, to his draft computerised measurements, and submit to the department the corrected computerized measurements in the form of a book, duly hard bound in red colour on the lines of the conventional Measurement Books now in use, and with its pages machine numbered.
- (3) The Assistant Engineer and the Executive Engineer shall test check these computerised measurements as per the existing instructions. This book shall be treated as a Computerised Measurement Book.
- (4) The Junior Engineer, Assistant Engineer and the Executive Engineer shall record the necessary certificates for their checks and test checks as per the existing procedure in this Computerised Measurement Book.
- (5) The Computerised Measurement Book shall be allotted a serial number as per the Register of Computerised Measurement Books.

7.12.3 Cutting or over-writing in the computerised M.B. not allowed

- (1) The Computerized Measurement Book given by the contractor, duly bound, with its pages machine numbered, shall have no cutting or over-writing.
- (2) It is the responsibility of the Junior Engineer or the Assistant Engineer as the case may be to ensure that the checks and test checks done by them in the initial draft measurements are correctly incorporated in the Computerized Measurement Book before they record their certificates.
- (3) In case of any error, the Computerised Measurement Book shall be cancelled, and the contractor shall re-submit a fresh Computerized Measurement Book. This should be done before the corresponding computerised bill is submitted to the Division for payment.
- (4) The contractor shall submit as many copies of Computerised Measurement Books as may be required, and as are specified in the NIT/contract, for the purpose of reference and record in the various offices of the department.

7.12.4 Computerised Bill to be submitted by the contractor

- (1) The contractor shall submit his running and final bills in a computerised form in the same format as the existing conventional bills, with all the pages machine numbered, and hard bound, and with all the entries made as per the existing procedure.

- (2) The contractor shall submit as many copies of the computerized bills as may be required for the purpose of reference and record in the various offices of the department.
- (3) The bill shall be carried forward from the previous running account bill as per the existing procedure.
- (4) These computerised bills shall be processed by the various offices for payment, as per the existing procedure.

7.13 Review of Measurement Books

- (1) The Measurement Books are required to be reviewed by Divisional Accountant under the supervision of Executive Engineer. The Assistant Engineers are required to submit the Measurement Books in use in the Sub-Divisions to the Divisional Office, from time to time, so that at least once a year the entries recorded in each of the Books are subjected to a percentage check. The Divisional Officer should ensure that this annual review is conducted regularly and positively every year.
- (2) The review by the Divisional Accountant shall be in the following respects:-
 - (i) To compare the books in use with part I of the Register of Measurement Books maintained in CPWA Form 92, and to note necessary corrections in the Register.
 - (ii) To see that no original sheet is torn out of a Measurement Book, nor any entry erased or disfigured, and that the corrections made therein are initialed.
 - (iii) To see that pencil entries are not inked over.
 - (iv) To test check the accuracy of calculations, and to ensure that the instructions regarding writing of Measurement Books, recording of measurements, and their test check are being followed properly.
- (3) On receipt of the Measurement Books in the Divisional Office, the Executive Engineer should indicate in column 2 of the "Review Notes" in each Measurement Book as referred to in para 7.13(5) below as to which of the calculations are to be test checked by the Divisional Accountant. The extent of this check will be determined by the Executive Engineer having regard to the result of the last review, and should cover complete set of measurements.
- (4) Payments based on the entries reviewed should be traced into various accounts and verified. Similarly, supplies or issue of materials should be traced into the various accounts, contractor's ledger, etc. and verified.
- (5) **Communication of discrepancies**
The defects, discrepancies, etc. noticed should be communicated to the Assistant Engineer concerned and summarized in the following form in the Measurement Book that has been test audited:

Review Notes by Divisional Accountant

Pages reviewed generally	Calculations selected by the Divisional Officer for re-check		Defects and discrepancies noticed	Dated initials of	
	Pages	Dated initials		Divisional Accountant	Divisional Officer
1	2	3	4	5	6

- (6) The Measurement Book completed and returned for record during the year should also be similarly examined prior to their final record in the Divisional Office.

7.14 Loss of Measurement Books

- (1) When a Measurement Book is lost, an FIR should be lodged with the police.
- (2) An immediate report of the facts of the case together with an explanation of all parties concerned responsible for the loss should also be made promptly to the Chief Engineer, who is empowered to sanction the write off of the lost Measurement Books. In case of theft or loss of a blank Measurement Book, the Superintending Engineer shall be the competent authority to write off the loss.
- (3) Such losses for write off should be reported in the proforma as at Appendix 10.
- (4) It is also necessary that the measurements in the lost Measurement Book should be re-constructed at the earliest.

SECTION 8

STANDARD MEASUREMENT BOOKS (SMB'S)

8.1 Purpose

The Standard Measurement Books are maintained to record the measurements of permanent standing in a building, and are required to be brought upto date from year to year on the basis of additions, etc. that are made to the building during a year. These are used for preparing the repairs estimates and contractors' bills for such repairs so as to avoid taking detailed measurements on each occasion.

8.2 Preparation and accounting of Standard Measurement Books

- (1) The Standard Measurement Books shall be prepared after the completion of the work by the Construction Division that has executed the work. The preparation of these books will ordinarily be undertaken in accordance with the program for each Sub-Division or such other suitable unit as may be fixed by the Divisional Officer.
- (2) All drawings, Standard Measurement Books etc. should be properly documented before handing over the building.
- (3) All the Standard Measurement Books should be on Form CPWA 23-A, and should contain pages in singleton. They should be numbered in an alphabetical series so as to be readily distinguishable from those assigned to ordinary Measurement Books.
- (4) These will be accounted for in the same manner as ordinary Measurement Books in a register in Form No CPWA 92 (Part II).
- (5) A similar register will be maintained in each Sub-Division showing the books belonging to it, and reviewed as done in case of the ordinary Measurement Books.

8.3 Writing of Standard Measurement Books

- (1) The Standard Measurement Books should be written legibly in ink, and certified as correct by the Executive Engineer. These should be maintained very carefully and accurately, as they may have to be produced as evidence in a Court of Law.
- (2) The Standard Measurement Books should either be written by the Assistant Engineer himself or a Junior Engineer under his orders. Each set of measurements taken by the Junior Engineer should, however, be fully checked by the Assistant Engineer, after which it should be examined by the Executive Engineer. He should declare in writing in the Book itself as finally approved by him for the purposes of preparing annual repair estimates and contractors' bills for the work done. Until this is done, the Book will not be assigned a number, and will not be entered in the Register of Standard Measurement Books.
- (3) The Standard Measurement Books shall be brought upto date under the supervision of the Assistant Engineer with reference to the building or work concerned within one month of closing of the accounts of the estimate thereof. All such corrections shall be attested by the Assistant Engineer, and approved by the Executive Engineer.

8.4 Computerised SMB's

The SMB's can also be in the Computerized Measurement Book form, and shall fully correspond with the final computerized measurements for the various items as recorded in the Computerised Measurement Book used during the construction stage.

8.5 Check by superior officers

- (1) The Executive Engineer shall check the compilation of Standard Measurement Books from time to time by personally examining each book at least once a year. To this end, the program of work should ordinarily be as follows:

- (a) Soon after the close of the official year as possible, the Assistant Engineer concerned shall arrange for a personal examination of these books with a view to satisfying himself that they have been brought upto date with reference to the additions, alterations or special repairs carried out in the building or works during the preceding year, and ensuring their submission on such dates as may be fixed for the purpose for the inspection of the Divisional Officer.
 - (b) On receipt in the Divisional Office, the Books will be compared with the Register of Standard Measurement Books in order to ensure that all the Books have been submitted for inspection. These shall then be subjected to such scrutiny as the Divisional Officer may direct. A comparison of these Books with the accounts of expenditure, and the record of connected measurements relating to estimates for additions/alterations or special repairs to building and works in the Division should, however, form a feature of the check to be applied.
- (2) A record of the results of the scrutiny referred to above should invariably be retained and produced, if required, during the inspection of Superintending Engineer/Audit/Accounts Officer.

8.6 Submission of certificates

- (1) A report should be made to the Superintending Engineer, so as to reach him not later than the 31st July of each year, with copy endorsed to the concerned Accounts Officer, certifying in clear terms:
- (i) That all the Standard Measurement Books of the Division have been inspected by the Executive Engineer.
 - (ii) That the entries made therein have not been tampered with,
 - (iii) That all corrections due to additions or alterations to the building or work concerned have been carried out, and,
 - (iv) That the Books are reliable with upto date records.
- (2) When a payment is based on Standard Measurements, the following certificate should invariably be recorded on the bill, in his own handwriting, by the Assistant Engineer preparing, examining or verifying it:
- “Certified that the whole of the work billed for herein has been actually done, and that no portion thereof has been previously billed for in any shape.”

SECTION 9

PREPARATION AND PASSING BILLS FOR PAYMENTS

9.1 Preparation and passing of bill

- (1) The contractor is required to prepare the bill in one of the forms prescribed, as applicable in each case, for the work done by him and submit the same to the Sub- Divisional Officer.
- (2) Wherever Computerised Measurement Books have been stipulated for use, the contractor shall submit Computerised Bills for all his claims, and thereafter these bills shall be processed in the usual manner.
- (3) Before the bill of a contractor/supplier is passed, the entries in the Measurement Book relating to the description and quantities of work/supplies should be scrutinized by the Assistant Engineer, and calculations of "Contents or Area" should be checked arithmetically under his supervision. The bill should then be checked, passed and paid in the office of the Executive Engineer from the Measurement Book entries.

9.2 Payment of bill

(1) Part rates

Full rates, as per agreement/supply order should be allowed only if the work or supply has been accepted as of required quality and specification. If the contract is determined, or an on account payment is to be made when the contract is to run, a part rate as considered reasonable shall be allowed with due regard to the work remaining to be done and general terms of the agreement, and after getting the part rate statement approved from the bill passing authority.

(2) Payment for supply

In case of supplies, the payment is not permissible until the stores have been received, examined and accepted. In case payment has been permitted on production of despatch documents etc. the payment should be treated as advance against the final settlement on receipt, examination and acceptance of the stores.

(3) Recoveries for stipulated issue of materials

In case of contract for completed items of work with stipulation of supply of materials of specified description, necessary recoveries on account of the cost of the materials supplied to him from Government stores, and actually measured (including wastage wherever applicable) and billed, shall be effected from each bill at the recovery rates fixed for the purpose.

9.3 Forms of Bill for payment and vouchers

The authorised forms of bills to be used for payment of contractors/ suppliers and their utility are described below:

(a) First and Final Bill Form CPWA 24

It should be used for making payments both to contractors for work and to suppliers, when a single payment is made for a job or contract on its completion. A single form may be used for making payments to several payees, if they relate to the same work/section of work, or to the same head of account in the case of suppliers and re-billed for at the same time.

(b) Running Account Bill Form CPWA 26

This form should be used for all running and final payments to contractors and suppliers (other than those relating to lump sum contracts for which Forms CPWA 27A and 27B are prescribed), including cases where advance payments are proposed to be made or are already outstanding in respect of the same work against the contractor. In case where secured advances are to be made or already outstanding in respect of the same work against the contractor, Account of Secured Advances Form CPWA 26A should be attached to the bill.

(c) **Hand Receipt Form CPWA 28:**

- (i) This is a simple form of voucher intended to be used for all miscellaneous payments and advances for which none of the special forms mentioned above is suitable.
- (ii) This form is not to be used for refund of lapsed deposits for which Form TR 62 is to be used.

9.4 Authorities to pass the bills

The statement summarizing the authorities empowered to prepare, examine or verify and pass the bills after observing the required test check and other formalities are given in Appendix 11.

9.5 Payment for work done

Payment for work done or supplies made on running account should be made periodically on submission of the bill by the contractor/supplier.

SECTION 10

DOCUMENTATIONS OF ACCOUNTS

10.1 Bills Register

- (1) The payments made in the Divisional Offices are made on receipt of the bills from the various Sub-Divisions. A consolidated record of all the bills received from the Sub-Divisions in respect of works/supplies should be maintained in one register known as the Register of Bills in the Divisional Office in the form given at Appendix-12.
- (2) The bills should be entered in the register strictly in order of receipt, i.e. the bills received first should be entered before the bills received afterwards. The payment of the bills should also be made strictly in order of their receipt. In no case a bill received afterwards should be given priority over the bills that have been received before, except under the written orders of the Divisional Officer.
- (3) The Divisional Accountant should ensure that the register is properly maintained and kept up-to-date in the Accounts Branch. The register should be submitted to the Executive Engineer every week for his perusal, and he will record in the register cases in which these instructions have not been followed.
- (4) The bills of work charged establishment, muster rolls and establishment bills should not be entered in this register.
- (5) A similar register, as mentioned above, should also be maintained in each Sub-Division in respect of payments to be made by the Assistant Engineer. This register should be kept by the Sub-Divisional Clerk in the same way as the register in the Divisional Office, and put up to the Assistant Engineer every week.

10.2 Contractor's Ledger

- (1) The accounts relating to contracts/ supplies should be kept in CPWA Form 43 in a bound book known as the "Contractors Ledger". A separate folio or set of folios should be reserved for all the transactions with each contractor/supplier, for whom a personal account should be maintained. The register should be properly indexed.
- (2) A personal account should be opened in the ledger for every contractor, whether or not a formal contract has been entered into with him, unless the work or supply entrusted to him is not important and no payment is made to him, except on a First and Final Bill Form CPWA 24 on completion. If only materials are issued to the contractor or any payments are made on his behalf, a ledger account must be opened.
- (3) The Contractors' Ledger should be written up and maintained up-to-date.
- (4) The Ledger accounts should be closed and balanced monthly. The closing balance of each personal account should be detailed so as to show in respect of each separate work or account (stock or purchases) the amount outstanding, if any, under each of the three suspense accounts i.e. (i) Advance payments (ii) Secured Advances and (iii) Other transactions.
- (5) The Divisional Accountant is responsible for correctness of entries in the Contractors' Ledger and balances at the closing of the month. All the personal accounts in the Ledger should be examined to see that:
 - (i) the balances do not remain outstanding for a long time without justification, and
 - (ii) the bills are prepared at reasonable intervals in the case of running accounts.
- (6) A Contractor requiring a copy of his running account bill or extract from the Contractors' Ledger should be supplied the same. He should sign in the Ledger in token of his acceptance thereof at the time of payment of each running bill/final bill.

10.3 Register of Works

- (1) The permanent and collective record of the expenditure incurred in the Division during a year on each work is the "Register of Works". This record is maintained in the Divisional Office.

- (2) There are two forms of Registers of Works (CPWA 40 and 41) corresponding respectively to the two forms of Works Abstracts (CPWA 33 and 34 that are used in the Sub-Division) for Major and Minor Works. The detailed Form CPWA 40 should be used for Major Works estimates, and the simpler Form CPWA 41 for Minor Works estimates. In respect of petty works, no record is necessary beyond the petty works requisition and Account Form CPWA 32, which is self-explanatory. But if desired, expenditure on these works may be recorded in Register of Works for Minor Works Estimates in Form CPWA 41.
- (3) Generally in cases of Major Works, the account of expenditure incurred is maintained in detailed Form CPWA 40 of the Register of Works. In case the Superintending Engineer or other sanctioning authority so desires, the accounts of Minor Works may also be kept by sub-heads in detailed Form CPWA 40. The Superintending Engineer is empowered to dispense with maintenance of accounts in the Register of Works by Sub-heads in respect of any work if he considers that the circumstances render such accounts useless or impossible to maintain. In such cases, a copy of such orders should also be forwarded to the Accounts Officer.
- (4) The Registers of Works are posted monthly from Works Abstracts. Separate folio or set of folios in Form CPWA 40 Register should be assigned to each Major Works estimate. Entries relating to Minor Works estimates can be made on a single page in Form CPWA 41 Register.
- (5) The Work Abstracts are required to be maintained in Sub-Divisional Office in a single sheet on each work. These should be sent regularly every month to the Divisional Office for compilation of the monthly accounts.
- (6) Before submission of the monthly account, the Registers of Works should be completed, reviewed by the Executive Engineer and date initialed by him in token of his having examined the entries and found to be correct.

10.4 Materials Account

In the Central PWD materials are purchased for maintaining stocks for requirements of various original and maintenance works, and can be of following two types:

- (1) Materials issued to contractors for use on the work in respect of completed items of work for both labour and materials for which they have quoted.
- (2) Materials issued direct to works when the work is done departmentally or by contractors whose agreements are for labour work only.

10.4.1 Materials issued to contractor

- (1) In the cases of issue of materials to contractors in respect of complete items of work, the materials are issued to the contractor as stipulated in the agreement at a fixed issue rate as indicated therein. These rates should include storage and other charges where these are issued from stock. The materials, other than those stipulated in the agreement, should not be issued in such cases without the express authority of the Superintending Engineer, who should specify in each case the "Issue Rate" to be charged for the materials inclusive of delivery at the place where these are stored.
- (2) This restriction may, however, be waived in respect of petty issues (at full issue rates) from the existing stocks not exceeding Rs. 5,000/- in any month for any one contract.

10.4.2 Issue to work

- (1) In case of materials issued direct to works, its detailed account should be kept in Form CPWA 35, i.e. Material at Site Account. Only principal items of materials, i.e. those items, the estimated cost of which exceeds Rs. 10,000/- each, need to be detailed in this account.
- (2) Both quantities and values of such items should be shown, except in respect of carriage and incidental charges for which only values should be shown.
- (3) All the minor items may be lumped together under the heading "petty items" for which only values should be shown.

10.4.3 Annual verification of balances

Unused balances of materials charged direct to work should be verified at least once a year, and a report of verification of the materials should be sent by the Assistant Engineer in Form CPWA 37 to the Executive Engineer.

10.4.4 Maintenance of account

- (1) In order to control the quantum of the materials both in receipt and issues, a numerical account of the principal items should be maintained. This should be maintained in respect of works costing more than Rs. 1,00,000/-.
- (2) A simple numerical account may, however, be maintained for the minor works and departmental repair works at the discretion of the Executive Engineer, if there is an accumulation of materials for a number of works.
- (3) Where the materials are issued to a work done departmentally or through a contract on labour rates only, the Material at Site Account should be maintained only if the estimated cost of the work is more than Rs.50,000/-

10.5 Cement Registers

- (1) The Assistant Engineer/Executive Engineer should check the registers maintained for accounting of cement at different work sites.
- (2) In case of works costing above Rs. 1,00,000/- situated outside their headquarters, they should inspect the registers and stores during their respective visits and inspection of the works.
- (3) In case of works where Ready Mixed Concrete (RMC) is stipulated to be used from an approved source/manufacturer, such registers need not be maintained. However, the computerised despatch slips that are sent with each despatch of RMC shall be kept on record.

10.6 Hire charges of Plant and Machinery

- (1) When so specified, the contractor may be allowed use of Plant and Machinery of the Department at fixed hire rates. The hire charges of such Plant and Machinery will count from the date these are taken out from the Departmental Workshop or a specific place till the date of their return.
- (2) The rates of hire charges are fixed from time to time. The hire charges are for each day of 8 hours (including one hour lunch break) or part thereof.
- (3) The hire charges shall include the idle days except for a major break down necessitating its return to the workshop. In case of any dispute, the decision of the Superintending Engineer shall be final. Para 28.3 also be referred to.
- (4) These hire charges shall include services of operating staff and maintenance staff as also the materials required for normal maintenance and repairs. Para 28.3 may also be referred to.

10.7 Dismantled materials account

10.7.1 Dismantled materials arising out of dismantlement through departmental works

- (1) The serviceable materials obtained from dismantlement of a building or structure wherever not sold by tender or auction, should be recorded without value in the Measurement Book for record purpose. On the basis of these measurements, these should be taken in the Register of Dismantled Materials in the form at Appendix-13. After the entries are made in the Register, and duly attested by the Assistant Engineer, the entries in the Measurement Book should be crossed by diagonal red ink line with a suitable note that these materials have been entered in the Register.
- (2) A separate folio or set of folios should be kept apart for keeping the accounts of dismantled materials pertaining to each work.
- (3) The serviceable materials obtained from dismantlement should be used in the works as far as possible and shall be shown as issued to works accordingly in the Register. The unserviceable materials should be disposed of in the manner indicated in provisions under section 45 of this Manual.

- (4) The undisposed balances should be physically verified at least once a year and the result of the verification recorded in the "Remarks Column".
- (5) This register (even for "Nil" transactions) should be submitted by the Assistant Engineer regularly each month along with the monthly accounts for scrutiny in the Divisional Office. In cases where the Junior Engineers are stationed at places other than the headquarters of the Sub-Divisions, separate registers should be furnished by them every month to the Sub-Divisional Office for incorporating in the Register maintained in the Sub-Division before its submission to the Divisional Office. After the transactions have been checked by the Divisional Accountant, the Register should be laid before the Executive Engineer for monthly review. The fact of such review should be placed on record in all cases preferably in Form CPWA 96 (memo of review).
- (6) In no case dismantled materials should be collected on the road berms. If for any reason, it is not found possible to comply with these instructions in any particular case, the written approval of the Superintending Engineer and local authority, if any, should be obtained.
- (7) The "Empties", i.e. empty drums, tins, bags, and other containers should also be included and accounted for in the Register of Dismantled Materials.

10.7.2 Dismantled materials arising out of dismantlement through contract

- (1) In case a building or structure is dismantled through contract, a stipulation/provision in the schedule of work can be made in the NIT/contract that the contractor has to take away the dismantled materials within specified time, and for which he should give credit to the Department at his tendered and accepted rates.
- (2) There may be cases where the intrinsic value of the dismantled materials may be more than the cost of dismantlement of the building/structure. In that event, sufficient safeguard should be taken through suitable stipulation/provision in the NIT/contract whereby the contractor deposits the cost of dismantled materials in full with the Department before he is allowed to take up the dismantling work. The cost of dismantling shall be paid to him after he completes the dismantling work.
- (3) The contract shall also have the usual provision for security deposit/performance guarantee to ensure that the contractor completes the dismantling work, and that he does not just walk away with the costly dismantled materials.
- (4) In case where dismantlement is part of construction contract, lump sum stipulation can be made for dismantling and removing the dismantled material, recovery of which can be made as early as possible preferably in first three running bills.

10.7.3 Dismantled materials arising out of maintenance works

- (1) Relevant para of Maintenance Manual may be referred to for disposal of dismantled materials arising out of maintenance works done through contracts.
- (2) In case of dismantled materials of negligible salvage value arising out of departmental maintenance of works, such as electrical lamps and tubes, A.C. sheet ridges, PVC flooring, etc., may not to be taken in the dismantled materials account, and they shall be disposed of as deemed fit. The Junior Engineer/Assistant Engineer/Executive Engineer shall exercise a check on the quantum of materials dismantled from their normal consumption pattern.
- (3) For other dismantled materials having salvage value arising out of such works, these should be accounted for in the Register of Dismantled Materials, and disposed of, or re-used as the case may be.

10.8 Losses of Government assets

10.8.1 Reporting of losses

- (1) All losses of assets in cash or properties should be reported to higher authorities and Audit Officer/Accounts Officer as soon as these come to the notice of an Officer, and action taken to investigate into it, and apportion the responsibility for the lapses and losses. This includes losses due to shortage and damages discovered during physical verification of stores.

- (2) With the exception noted below, any loss or shortage of public moneys, departmental revenue or receipts, stamps, stores or other property held by or on behalf of Government, caused by defalcation or otherwise including losses and shortage noticed as a result of physical verification, shall be immediately reported by the Divisional Officer through his Superintending Engineer to the Chief Engineer concerned. The Executive Engineer should simultaneously endorse a copy to Audit. The Chief Engineer of the Zone shall forward the same with his recommendations to the Director General (Works)/Additional Director General for onward transmission to the Ministry of Urban Development. Petty cases need not be reported to the Audit/Ministry.
- (3) If the irregularity is detected by the Audit Officer/Accounts Officer in the first instance, he shall report it immediately to the Executive Engineer concerned, and if he considers it necessary, to the Ministry as well. The Accounts Officer shall send his report through the Audit Officer concerned.
- (4) All cases involving loss of Government money arising from erroneous or irregular issue of cheques, or irregular accounting of receipts and circumstances leading to the loss should also be reported to the Controller General of Accounts so that he could take steps to remedy the inadequacies in rules or procedures, if any, connected therewith, which might have been exploited to facilitate the perpetration/occurrence of the act/event.
- (5) The report must be submitted as soon as suspicion arises that there has been a loss. It must not be delayed while detailed enquiries are being made. When the matter has been fully investigated, a further and complete report should be submitted of the nature and extent of the loss, showing the errors or neglect of the rules by which such loss was rendered possible, and the prospects of effecting recovery.
- (6) The report shall be submitted with such comments, as may be necessary or expedient, on the causes or circumstances which led to the defalcation or loss, the steps taken to prevent its recurrence, and the disciplinary or any other action proposed as regard to the persons responsible.
- (7) When material losses due to suspected theft, fraud, fire etc. occur in any office/installations, such cases should immediately be reported to the Audit Officer/Accounts Officer/Principal Accounts Officer concerned, and higher officer of the Department. Such cases should be invariably reported to the Police for investigation. The Head of the Department should exercise his discretion in determining at what stage the report should be sent to the Police, keeping in view the fact that the Police investigation will be increasingly handicapped with lapse of time.
- (8) All losses of the assessed value of Rs. 10,000 and more shall be regarded as "Material losses" excepting the losses due to suspected sabotage. All cases of suspected sabotage should be reported to the Police promptly, irrespective of the value of the loss involved.

10.8.2 Cases that need not be reported

- (1) Cases involving loss of revenue due to:
 - (a) mistakes in assessments which are discovered too late to permit a supplementary claim being made.
 - (b) under assessments which are due to interpretation of the law by the local authority, being over ruled by higher authority after the expiry of the time limit prescribed under the law, and
 - (c) refunds allowed on the ground that the claims were time barred, need not be reported to the Audit Officer and Accounts Officer. A record should, however, be kept of such cases for examination by the Audit Officer and the Accounts Officer at the time of local inspections.
- (2) Petty cases need not be reported to the Audit Officer and the Accounts Officer.

10.8.3 Follow-up action on losses – write-off of losses

- (1) The Principal Accounts Officer of the Ministry shall ensure that the cases are properly pursued and investigated by the authorities concerned. In cases of loss or shortage being due to inadequacies of prescribed procedure, remedial action to amend the procedure should be suggested promptly

to the appropriate authorities. Cases involving serious irregularities should be brought to the notice of Financial Adviser/Chief Accounting Authority of the Ministry/Department concerned and the Controller General of Accounts, Ministry of Finance.

- (2) The Director General (Works)/Additional Director General/Chief Engineer/Superintending Engineer are empowered to deal with and write off the losses of stores or of public money as per the powers given in Appendix-I.
- (3) For all cases exceeding the limit given in the Appendix-1, the case should be sent to the Government for sanction.
- (4) Where the losses occurred due to irregularity arising out of breaches of rules and regulations do not exceed the power delegated to the Director General (Works)/Additional Director General/Chief Engineer/ Superintending Engineer, as the case may be, in each case he is empowered to condone the irregularity and regularize such action, provided
 - (i) He himself is not responsible for the irregularity.
 - (ii) There has not been any serious negligence on the part of some individual Government Officer(s) which may probably call for disciplinary action, requiring the orders of a higher authority.
 - (iii) The irregularity committed does not disclose any defect in the rule or regulations, the amendment of which requires the orders of a higher authority.

SECTION 11

ACCOUNTING PROCEDURE FOR WORKS EXECUTED BY CPWD OUTSIDE INDIA

11.1 General

- (1) Works outside India are executed by CPWD as and when assigned by Govt. of India through Ministry of External Affairs.
- (2) The works to be executed outside India generally comprise of the works pertaining to Ministry of External Affairs and the projects to be taken up under Government of India's economic aid to the country.
- (3) For execution of projects, a Project Team of requisite strength is deputed in consultation with Ministry of External Affairs and after obtaining approval of Ministry of Urban Development. Depending upon the magnitude and importance of the project, the project team may be headed by an officer of the rank of Executive Engineer or Superintending Engineer or Chief Engineer.
- (4) Under the economic aid program, the land necessary for the project is provided by the concerned country free of all encumbrances. The payment of compensation, if any, and the settlement of claims or disputes arising there from, is the responsibility of the Government of that country.
- (5) After completion of the projects taken up under the economic aid program, the concerned Government takes over the project and undertakes to make provision to keep it in proper maintenance.
- (6) In addition to execution of the projects, CPWD also provides consultancy services for planning and design.
- (7) For the works executed outside India also, in general, the same accounting procedure is being followed by the CPWD for works in India. Deviation where necessary according to local conditions is approved by the competent authority in Ministry of External Affairs/concerned Embassy in which case funds for the project are provided to Embassy itself and the entire expenditure on the projects as well as on the establishment of the CPWD Project Team are routed through the accounts books of Embassy.

11.2 Procedure for obtaining finance to meet the expenditure

Finance to meet the works expenditure are obtained as per the agreement made with the RBI. The facility of obtaining funds by RBI drafts is extended to all the Divisional Officers/Project Manager posted abroad. The Divisional Officers/Project Manager are required to open accounts in their official name with the local branches of the authorized bank in the countries in which they are posted.

11.3 Cash Book

The Cash Book is to be maintained in Form CPWA I. On the receipt side, an additional column is to be opened with a heading "Local Bank". On the payment side, the column "Bank or Treasury" will be utilized as "Local Bank".

11.4 Drawal from Banks

The amounts received in cash are shown in the "Cash" column and classified under the head of receipts can be made use of for current expenditure. If, however, the cash balance in hand is considered surplus, the amount in excess may be deposited in the local bank, classifying such remittances on both the sides of the Cash Book.

11.5 Classification of RBI drafts

- (1) The Divisional Officer who issues RBI drafts for financing purposes should take the amount in the "Cash" column of the receipt side, and classify it as RBI remittances. The amount for which the

credit is afforded by the local bank in lieu of the draft should be entered in the "Cash" column on the payment side, and the amount of collection charges charged by the local bank should be accounted for as "Contingencies" in the "Cash" column of the payment side. The amount credited by the local bank should also simultaneously be shown on the receipt side in the "Bank" column.

- (2) In respect of the issue of bank draft for making payment to the contractor, the amount of the bill as well as deduction should be accounted for all in the usual manner in the "Cash" column, and the net amount of the bill for which the bank draft is issued should be taken in the "Cash" column of the receipt side.
- (3) Where the draft is issued in favour of other Divisions for financing purposes or for payment to contractors, the amount of draft should be shown on receipt side in "Cash" column, and simultaneously as payment on payment side in "Cash" column, the latter being classified as "Transfer between PW Officers".
- (4) The Divisional Officer receiving the RBI draft will enter the transaction in the cash book and will classify it as "Transfer between PW Officers" on the receipt side of the "Cash" book instead of as RBI remittances.

11.6 Accounting and clearance of transactions relating to RBI drafts

The Divisional Officer should send a monthly statement of RBI drafts in Form CPWA 77B, reproduced as Annexure. The total amount of the draft will be shown in Form CPWA 80 after the existing entry Form CPWA 77. The clearance of these transactions would be effected and watched by Accounts Officer.

11.7 Accounting of expenditure on works

The expenditure incurred on "Works" and "Tools and Plant" ("Machinery and Equipment") will be classified under Head "PAO Suspense" for eventual adjustment by Pay and Accounts Officer, Ministry of External Affairs, under the Budgeted head of account.

11.8 Accounting of expenditure on Establishment

The expenditure on "Establishment" including that on "Contingencies" will be initially classified under "2059 Public Works", but at the close of the financial year, it will be transferred from that Head to "PAO Suspense" for eventual adjustment with the Pay and Accounts Officer of Ministry of External Affairs.

11.9 Cash balance with the local bank - Reconciliation statement to be prepared

- (1) The amount in the "Local Bank" is to be treated as "Cash" for all purposes and shown as such in Form CPWA 80. The detailed break up of the closing cash balance will be given as under:
 - Part I Cash in hand.
 - Part II Amount of Imprest/Advances.
 - Part III Balances in the Local Banks.
- (2) The balances in the local bank will be supported by a reconciliation memo in the form reproduced below:

Reconciliation memo of balance with the local bank

Amount	
Balance with local bank as per Pass Book	
Less: Cheques issued but not encashed (A)	
Add: Amounts deposited in the local bank	
but not accounted for in the cash book (B)	
Balance with the local bank as per Cash Book	

A — Details of cheques encashed
Particulars of cheques

Cheque No.	Date	Amount
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B — Particulars of deposits in the local bank not accounted for in the Cash Book

Date	Amount
------	--------

[Divisional Accountant]

11.10 Levy of charges for works abroad.

Departmental charges and Direction charges will be levied as mentioned in the Section “General Departmental Charges”.

11.11 Delegation of powers

- (1) The officer in charge of the foreign projects shall enjoy full powers of sanction in regard to administrative and financial matters relating to such projects as are at present enjoyed by the officer of same or equivalent ranks in respect of works in India, or that may be delegated from time to time to them.
- (2) The Divisional office/Project Manager will render account to the Accounts Officer and/or to any such other authority as may be specified.
- (3) In the case of works where only consultancy services are provided, such as construction of Embassies etc. the expenditure on works are incurred by the Ministry of External Affairs directly through their Embassies. CPWD only extends technical advice.

Annexure
(Reference para 11.6)

Form No. CPWA 77 B
Statement showing the RBI drafts issued during the month of
Schedule of debit/credit to Remittance

Item No.	Name of the division	Name of the bank on which draft issued	No. & date of RBI draft	Amount of the draft	Amount of exchange, if any	No.& date of the drawing schedule	Name and address of the payee in India	Reference to voucher No.	Remarks if any
1	2	3	4	5	6	7	8	9	10

Certified that:

- (1) This schedule contains all the RBI drafts issued during the month.
- (2) The additional remittances are covered by orders of the Government, particulars of which have been quoted against the respective items.
- (3) No drafts have been issued against deposits of local currency except where specially authorised under Government orders.
- (4) The total of columns (5) and (6) of this Schedule agrees with the total shown on the receipt side of the Monthly account for the month of
- (5) The R.B.I. Drafts on Government account shown above have been issued in respect of bonafide Government transactions only.

Signature of Divisional Officer
(Drawing Officer)

SECTION 12

GENERAL DEPARTMENTAL CHARGES

12.1 General

No departmental charges are to be levied for Government works and those of autonomous bodies fully funded by Central Government. For works done by CPWD other than above, departmental charges are to be levied. It should be ascertained whether an Autonomous Body is fully funded or not by Central Govt. by obtaining a letter from the head of such an undertaking or from the head of finance department of the undertaking that it is fully funded by the Govt. No departmental charges shall be levied by the Central PWD in respect of work in connection with the celebration of the two National Days, viz. Independence Day and Republic Day. The expenditure incurred by the Central PWD in this connection shall be debited to the Revenue Head 2059 Public Works. The different component of charges, to be levied for different works executed by CPWD are tabulated as below.

Departmental charges on percentage basis

Type of work	Establishment	Tools and plants	Pensionary charges	Audit and account charges	Remarks
All Central Govt. works or works of Autonomous bodies fully funded by Central Govt.	Not to be recovered	Not to be recovered	Not to be recovered	Not to be recovered	Establishment charges should correspond as far as possible to the average percentage borne by the CPWD's normal establishment to the normal works program which fully occupy such establishment
Works done on behalf of local or private bodies when expenditure is debited to '2059 PW-grants-in-aid' or "2216 Housing grant-in-aid".	To be recovered	To be recovered	Not to be recovered	Not to be recovered	
Works executed on behalf of Central commercial concerns and non-Govt. bodies, or individuals	To be recovered	To be recovered	To be recovered	To be recovered	
Works executed on behalf of other Government.	To be recovered	To be recovered	To be recovered	Not to be recovered	

12.2 Rates of departmental charges

- (1) The rates of departmental charges levied by the CPWD on works executed by them are revised from time to time and are given along with their break up in Appendix-14. The expenditure on purchase of vehicles/running and maintenance of jeeps shall be charged to the work concerned direct instead of Machinery Equipment. The rates will not be applicable where specific rates of Departmental charges have been prescribed by the competent authority for specific works.
- (2) The basis of determining the slab for levying the departmental charges shall be the estimated cost of the work, i.e. the amount of expenditure sanction in respect of original works, and the administratively approved amount in the case of minor works where expenditure sanction is not accorded. The estimated cost of repair works is the amount of technical sanction for such works.

12.3 Departmental charges for preparation of plans, design and estimates

- (1) No recovery should be made from Civilian or Commercial Departments or State Governments for preparation of designs or supply of copies of CPWD type designs. The above charges should, however, be recovered from Commercial Departments, Autonomous Bodies and State Governments if plans are specially prepared for them. If the plans are required for reference

purposes only, copies of type design may be sold to them on the recovery of the cost of prints only, provided an undertaking is given by the organization that if they adopt the designs for construction, normal departmental charges would be paid by them.

- (2) Fee for preparation of plans and estimates, whether preliminary or detailed, for schemes that do not mature, shall not be charged from the Departments of the Government of India and local bodies who entrust their works to the CPWD as a standing arrangement. Charges shall be levied at the rate of 1.5 and 5 per cent for the preparation of infructuous preliminary and detailed architectural plans/works estimates respectively from the other bodies who approach CPWD for the execution of works occasionally as distinct from standing arrangements.
- (3) The Public Sector Undertakings, autonomous bodies and semi-Government organizations, when they approach CPWD for preparation of preliminary plans, will have to pay departmental charges at the rate of 1% of works outlay for the said service. The cost will be worked out on the basis of total carpet area required by the client organization multiplied by a suitable factor to convert it into plinth area, and then applying the normal plinth area rate prevailing in the locality. Subsequently, this amount will be adjusted in the overall departmental charges if the project is sanctioned, provided no major changes are made in preliminary plans.

12.4 Levy of charges for works abroad

It has been decided by the Government of India that departmental charges at the following rates shall be levied for departmental works that are executed in Missions abroad:

- (a) In cases where the works are executed through the agency of CPWD
Actual expenditure incurred on the executive staff stationed at a particular place including actual travelling and other special allowances (including the permissible home leave fares) given to the India based staff in the particular Embassy according to the rules in force, plus actual travelling allowances of the Senior Engineers and Architects visiting the works abroad periodically, plus 3% of the building cost as "Direction Charges" to cover the services of Architects and Designers, and higher level supervision.
- (b) In other cases where CPWD is associated with the work and assist and advise the local architects
 - (i) For preparation of preliminary sketches and estimates @ 1% of the estimated cost,
 - (ii) Actual expenditure on executive staff in accordance with sub para (a) above in case of an officer who is sent abroad to advise on various matters, and
 - (iii) Actual travelling allowances of the Senior Engineers and Architects visiting the work abroad.

12.4.1 Expenditure on Tools and plant

Expenditure on Tools and Plant for works abroad should be charged to the project concerned, unless a regular unit of CPWD is maintained at the place where the work is being carried out, in which case the expenditure on Tools and Plant shall be debitable to the head "2059 Public Works CPWD Tools and Plant", and usual percentage of departmental charges as may be prescribed in this behalf from time to time, shall be levied on the concerned works.

12.4.2 Expenditure on establishment

The following procedure shall be adopted so that the accounts of the works receive debits for all items of expenditure on establishment engaged on works executed in Missions abroad:

- (a) In cases where works are executed through the agency of CPWD
 - (i) Actual expenditure incurred on the executive staff stationed at the particular place, including actual permissible home leave fare charged in the first instance to head "2059 PW Establishment", will be debited direct by the Divisional Officer executing the work to the work concerned, and credit afforded under the Head "2059 PW Establishment Charges recovered from other Government Department etc.", by raising formal debit under 8658 suspense accounts PAO suspense (MEA).

- (ii) The actual expenditure on travelling allowances of the Senior Engineers and Architects visiting the work abroad periodically will be incurred in the first instance under the head "2059 Public Work - Direction and Administration", but intimation of expenditure incurred shall be sent by the concurred Officer or the Superintending Engineer or the Director General (Works) (Cash Section) as the case may be, to the Divisional Officer executing the work so that necessary adjustment may be made by him by debiting the amount to the work concerned and by affording credit under the head "2059 Public Works - Direction and Administration recovered from other Government Department etc."
- (iii) 3% to the building cost as "Direction Charges" to cover the service of Architects and Designers and of higher level supervision. Adjustment on this account shall be made on the basis of work expenditure directly by the Divisional Officer executing the work by debit to the account of the work and credit to the head "2059 Public Works - Direction and Administration recovered from other Government Department etc."
- (b) In other cases where CPWD is associated with the work to assist and advise the local Architects in respect of the items mentioned in para 12.4(b), adjustment will appear in the accounts of F.O. to Director General (Works) if expenditure is incurred in respect of staff of the office of the Superintending Engineer or of the Director General (Works). In case, a Superintending Engineer, not attached to the Central Office, visits abroad, he should report the expenditure incurred to the F.O. to Director General (Works) (Cash Section) for further necessary action. Necessary debit on account of expenditure incurred on staff or on the travelling allowance of Senior Engineers and Architects charged to "2059 Public Works" should be raised against the Ministry of External Affairs and credit adjusted under the "Establishment charges recovered from other Government Department etc." It will be the responsibility of the office other than the Divisional Office from where the above Officer proceeds on tour for the purpose to report to the F.O. to Director General (Works) (Cash Section) for necessary action.

12.4.3 Expenditure on preliminary plans and estimates

- (1) 1% of the estimated cost shall be recovered for preparation of preliminary sketches and estimates, for which necessary adjustment will appear in the accounts of the F.O. to Director General (Works) by debiting to the grant of the Ministry of External Affairs and crediting to head "2059 Public Works - Direction and Administration recovered from other Government Department etc." In this connection the Works Section concerned with the estimates etc. shall keep a register and raise the debits against the Ministry of External Affairs under intimation to the F.O. to the Director General (Works), who will watch acceptance and carry out the adjustment in his accounts.
- (2) If any expenditure under these items is incurred by any of the Divisional Officers in the Central PWD, such expenditure will be debited by him in the first instance to "2059 Public Works", and later on corresponding debit raised against the External Affairs Ministry's grant and credit adjusted under "Establishment charges recovered from other Government Department etc."

12.4.4 Recoveries of over payments

All recoveries of over payments, irrespective of the year in which they are affected, should be treated as deduction from expenditure. Transfer of amounts from "2059 Public Works Establishment" to the work/ head concerned should be made monthly by Director General (Works) /F.O. to the Director General (Works) as the case may be, so that the accounts of the work take cognizance of the expenditure at the earliest opportunity.

12.5 Departmental charges for Fair Rent Certificate

- (1) The Central PWD may charge fees for issuing certificates of reasonableness of rent on buildings hired by the State Government at the same rates as are charged by the State Govt. P.W. Department for giving such certificates to the Central Government in respect of building taken on hire by the latter.

- (2) The Departmental charges at the rate of $\frac{1}{2}\%$ of the cost of a building shall be charged by the Central PWD for issue of certificate to an autonomous body **[even funded by the Central Government] (Modified as per OM/MAN/198)]** about the reasonableness of its rent. The recoveries on this account are adjustable under the head "0059-PW-Other receipts". No waiver of departmental charges is allowed for issuing such certificate.
- (3) Where valuation of land is also necessary in determining the rent of building, departmental charges shall be levied at the rate of $\frac{1}{4}\%$ of the land value in addition to $\frac{1}{2}\%$ of the cost of the building.
- (4) Where for a non-residential building, the only expenditure to be incurred by the Public Works Department is for the mere acquisition of the building, it should be sufficient to charge $\frac{1}{4}\%$ of the acquisition cost for examining the building and issuing suitability certificate.

12.6 Departmental charges for Coal Mines works and other agencies

Departmental charges at the rates given in the Appendix 15 shall be levied for scrutiny of estimates of Coal Mines Labour Welfare Fund by the Central PWD.

12.7 Departmental charges for works in Bhutan

It has been decided by the Government of India that departmental charges will be recovered at the rate of 2% of the estimated cost of the works for all technical services and help rendered by CPWD Officers in connection with the execution of works in Bhutan.

12.8 Departmental charges for works of National Capital Territory of Delhi

The National Capital Territory of Delhi will be treated at par with departments of Government of India for purposes of application of rules for the distribution of establishment and tools and plant charges.

12.9 Departmental charges for horticultural works

The Government of India have sanctioned the remission of departmental charges in respect of gardening jobs, e.g. the preparation of beds, etc. carried out by the Horticulture Units in the Officer's bungalows, New Delhi at the expense of the Licensees.

12.10 Departmental charges for local bodies

In the case of works executed for the New Delhi Municipal Committee and other local bodies in respect of deposit works, the rate of Establishment charges including audit and accounts and pensionary charges are levied.

12.11 Levy of fees by the CPWD Consultancy Services

The Executive Director (Consultancy), CPWD Consultancy Unit, handles consultancy works of planning and designing (with or without construction) of various projects including high-rise buildings, housing complexes etc. The Unit has been authorised to accept consultancy works of Public Sector Undertakings and other organizations to undertake construction on turn key basis, or for Mission's buildings abroad, etc. at negotiated rates. Fee for the Consultancy Services to be charged by the Unit are given in Appendix 16.

- Note:-**
1. The soil testing and preparation of models would be paid for extra by the project authorities.
 2. In addition, the project authorities shall bear the TA/DA expenses for members of the planning team who visit the site during the planning phase.

CHAPTER III CONTRACTS

SECTION 13 CONTRACTS AND FORMS

13.1 What is a contract?

- (1) When two or more persons have a common intention communicated to each other to create some obligation between them, there is said to be an agreement. An agreement which is enforceable by law is a "Contract."
- (2) According to Section 10 of the Indian Contract Act, 1872, only those agreements are enforceable by law which are made by the free consent of parties competent to contract, for a lawful consideration and with a lawful object, and are not expressly declared to be void. This is subject to any special law according to which a contract should be in writing and attested by witnesses.
- (3) The following are the essential ingredients of a contract:—
 - (a) Offer made by one person called the "Promisor".
 - (b) Acceptance of an offer made by the other person called the "Promisee".
 - (c) Doing of an act, or abstinence from doing a particular act by promisor for promisee, that is called consideration.
 - (d) The offer and acceptance should relate to something which is not prohibited by law.
 - (e) Offer and acceptance constitute an agreement, which when enforceable by law, becomes a contract.
 - (f) In order to make a valid and binding agreement, the party entering into such an agreement should be competent to make such agreement.
- (4) For the purpose of an agreement, there must be a communication of intention between the parties thereto. Hence in the forms of a contract there is:
 - (a) A proposal.
 - (b) Communication of the proposal.
 - (c) Communication of acceptance of the proposal.
- (5) The communication of acceptance of the proposal completes the agreement. An offer may lapse for want of acceptance or be revoked before acceptance. Acceptance produces something that cannot be recalled or undone. A contract springs up as soon as the offer is accepted and imposes an obligation upon the person making the offer. It has been opined by the Ministry of Law that before communication of acceptance of an offer, the tenderer would be within his right to withdraw, alter and/or modify his tender before its acceptance, unless there is a specific promise to keep the offer open for a specific period, backed by a valid consideration.

13.2 Forms to be used for contracts

- (1) The following forms shall be used for agreements with the contractors for the purpose noted against each.
- (2) Except for the statutory clauses, the NIT approving authority, not lower than the Executive Engineer, can introduce additional terms and conditions in the NIT to suit the exigencies of a work, and these would override the corresponding standard clauses of the various forms

13.2.1 CPWD Form 6

- (1) This is Notice Inviting Tender Form, and in brief is known as NIT. It is required to be invariably issued in respect of works for which tenders are to be called. The Form includes the name of