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Classification of accounts and standard form of statement

National Association of Building Owners and Managers

Classification of Accounts
and
Standard Form of Statement

of the

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PRICE $1.00

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Standard Form of Statement

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(Being a revised Edition of the Preliminary Report of the Committee on Accounting and Exchange of the National Association of Building Owners and Managers.)

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CONTENTS

FORMS AND CHARTS

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INTRODUCTION

The first edition of the report of the Accounting and Exchange Committee, issued as a supplement to the April, 1921, Bulletin, having been exhausted, it is necessary to prepare a revised edition. Only minor changes have been made in this edition. The Accounts for Building Repairs (old number A-1) and Decorating (old number A-3) have been taken out of the Operating Group of Accounts (Group-A) and transferred to the Group-B Accounts which are now called Construction Accounts. This has been done in order to leave in the Group-A Accounts only the regular operating accounts that are not ordinarily subject to unusual fluctuations from year to year. This also brings into the Group-B Accounts all those accounts on which work is done by the building mechanics, such as carpenters, painters and electricians, and which are grouped together by many buildings under some such general title, as Alterations, Repairs, Shops, etc. The transfer of the Building Repairs and Decorating Accounts has necessitated the renumbering of the Group-A Accounts.

The Committee desires especially to call the attention of the members to the fact that it was never intended to ask all members to adopt this report in its entirety. The particular feature with which the Committee is concerned is the adoption of a standard classification of the principal building accounts as shown on the Standard Form of Statement. Part II of this Report covers Cost Accounting, and is given for those who desire a complete system of Cost Accounting, but it is not urged, or even expected, that all buildings will find it necessary to adopt so complete a system. Members are urged to group their costs according to the standard classification given in Part I of this Report. By what system of accounting they arrive at this grouping is the concern of each individual building.

This report consists of two main parts as follows:

Part I.—A Standard Form of Statement and a Uniform Classification of Accounts.

Part II.—A System of Cost Accounting.

PART I.

A STANDARD FORM OF STATEMENT AND A UNIFORM CLASSIFICATION OF ACCOUNTS

Section I.—UNDERLYING PRINCIPLES

In considering this problem, your Committee has been forced to take as its primary object the development of a system of accounting which will permit a comparison of accounts between buildings of the Association. Only through the development of its work along this line is it possible for the Committee to produce anything of value to the Association as a whole. For this reason it has been necessary to change some present accounting methods which are perfectly proper for the individual building but which make it impossible to secure accurate comparisons of costs with other buildings.

The Committee has also endeavored to prepare a Uniform Classification of Accounts and a Standard Method of Accounting, which, in its larger divisions and main principles can be used by all buildings with the least possible modification of their present systems, but which will permit any building, which desires to do so, to adopt its secondary divisions and subdivisions and thus secure a detailed and complete analysis of its costs.

As the first step in the accomplishment of this end, it is necessary to establish some basis common to all buildings, upon which the Standard Form of Accounting can be built. All buildings vary in methods and quantity of their operations. Some do nothing but rent offices, others not only rent offices but provide a large list of service features for which an additional charge is made. It is evident that the one operation common to all buildings is that of renting offices, and this is taken as the basic operation upon which the System of Accounting is built.

The income and expense of operating rented offices must, therefore, be segregated from all other income and expense incidental to the operation of any individual building. The first grand division of our operating accounts will, therefore, be into two classes.

I.—Rental Income and Expense.

II.—Service Income and Expense.

In order to maintain this division, it will be necessary, in establishing our Standard Form of Statement, to observe the three following principles of accounting.

First—That all debit and all credit items be kept in separate accounts. In other words, that none of the income be credited to expense accounts, or vice-versa, so that the accounts as shown on the trial balance will be gross and not net amounts. For instance, income from electric light should not be credited to engine room operation, but should be set up as a separate item of income. In like manner, income from Ice, Water, Waste-paper, etc., should not be credited to the janitor or other departments, but should also be set up as separate income accounts.

Second—That the production cost of all services paid for by tenants should be separated from the cost of operating the rented space.

BUILDING

ADDRESS

STANDARD FORM OF STATEMENT

BUILDING No.

For the Year of 192

I. Rental Income and Expense

No.	Account	Amount	Total	Sq. Ft.
A. 1	Cleaning		8,963.88	.29
2	Electric System	$435.65		
	Power	214.81	650.45	.02
3	Heating and Ventilating	491.10		
	Steam	4,532.62	4,923.72	.16
4	Plumbing System	440.57		
	Power	45.21	485.78	.02
5	Elevators	3.756.93		
	Power	527.05	4,283.98	.14
6	General Expense	4,138.31		
	Power	389.20	4,527.51	.15
7	Power	*(5,708.89)*		*(.19)*
	TOTAL OPERATIONS (A)		$23,835.32	.78
B. 1	Alterations	335.32		.01
2	Building Repairs	773.78		.03
3	Decorating	766.44		.02
	TOTAL CONSTRUCTION (B)		1,875.54	.06
C. 1	Insurance	456.53		.02
2	Property Taxes	11,100.00		.35
3	Depreciation	5,000.00		.16
	TOTAL FIXED CHARGES (C)		$16,556.53	.53
D. 1	Ground Rent	9,583.34		.31
2	Bond Interest	5,812.50		.19
3	Interest on Notes	2,000.00		.06
4	Income and Capital Stock Taxes	1,250.00		.04
5	Net Income	39,406.87		1.27
	TOTAL DEDUCTIONS & NET INCOME (D)		$58,052.71	1.87
	TOTAL RENTAL EXPENSE AND NET INCOME		$100,320.10	3.24

No.	Account	Amount	Total	Sq. Ft.
E. 1	Offices	86,180.67		
2	Stores	10,116.00		
3	Basement	2,380.25		
4				
F	TOTAL RENT		98,676.92	3.19
G	Miscellaneous		105.13	.003
	General Expense Billed		1,538.05	.05
	TOTAL RENTAL INCOME		$100,320.10	3.24

II. Service Income and Expense

No.	Account	Amount	Total	Sq. Ft.
H. 1	Electric Light	$35.74		
	Current	573.99		.02
2	Steam			
3	Ice and Water	727.96		.02
4	Towels	249.99		.01
5	Clock Service	21.02	1608.70	
I.	Alterations Paid For		223.39	.01
J.	Jobbing		8,421.60	.27
	Profit		1,768.76	.06
	TOTAL SERVICE EXPENSE AND PROFIT		$12,022.45	.39
	GRAND TOTAL		$112,342.55	3.63

No.	Account	Amount	Total	Sq. Ft.
L. 1	Electric Light		776.19	.02
2	Steam			
3	Ice and Water		926.69	.03
4	Towels		318.24	.01
5	Clock Service		26.76	
M	Alterations		284.38	.01
N	Jobbing		9,690.19	.32
	TOTAL SERVICE INCOME		$12,022.45	.39
	GRAND TOTAL		$112,342.55	3.63

Third—That the cost of alterations made in connection with leases should be separated from all other items of rental or service operations, and not included as a part of the building maintenance or repairs. The cost of alterations should be sub-divided into (1) those paid for by the building and (2) those paid for by the tenant.

Section II.—STANDARD FORM OF STATEMENT

The following Standard Form of Statement is based upon the above principles. This statement is divided into the two grand divisions of "Rental Income and Expense," and "Service Income and Expense," each of which balances separately and the sums of the two sides of which will give the total gross income and total gross expense from all the building's operations.

Section III.—THE RENTAL GROUP OF ACCOUNTS

The groups of accounts into which the Rental Income and Expense Portion of the statement is divided are defined as follows:

GROUP A

OPERATION.—Covers all items of regular operation and maintenance of the building, not including cost of construction item such as alterations, repairs or decorating; or cost of service for which tenants pay in addition to their rent. This group represents all expense not included in Groups B, C, and D, or under "service expense." It will be more fully defined in Section VI of Part I, where the accounts comprising this group are considered.

GROUP B

CONSTRUCTION.—This group covers all work done by building mechanics, but does not include any permanent improvements to the building.

B-1 Alterations.—This account covers the cost of alterations made on account of leases in tenants premises and paid for by the building. In case a portion of the cost of the alterations is paid for by the building and the remainder by the tenant, the cost of the portion paid for by the tenant should be deducted from this group, and charged under Group I.

B-2 Building Repairs.—This account should include the cost of all alterations, repairs and decorating not on account of any lease. It should not, however, include any work of this character that constitutes a permanent improvement in the building, and which would, therefore, be added to the investment account of the building.

B-3 Decorating in Tenants' Premises.—Should cover the regular periodical cleaning and decorating of offices, varnishing of floors, woodwork, etc. Decorating clearly a part of or necessitated by an alteration job should be charged to the alterations. Decorating not in tenants premises should be charged to B-2.

NOTE—The forms and figures used throughout this Report are illustrative only. It is not the intention of the Committee that the make-up of these forms should be followed literally by any member adopting this system of accounting. The shape and arrangement of all forms will be determined by individual conditions.

The figures shown on the various forms of this Report are not actual figures taken from the records of any particular building, but are figures made up and used because it was thought the forms would be better understood if they were filled out as they would be when put into use. These figures, therefore, should not be considered in any sense a guide or indication as to what standard operating costs should be.

The figures used on the Standard Form of Statement are taken in part from the figures used on the Distribution Sheet. On the Distribution Sheet they are supposed to represent the figures for one month, while on the Standard Form of Statement they are supposed to represent the figures for one year. The same figures are used in both places in order to show clearly what figures on the Distribution Sheet are used on the Standard Form of Statement.

GROUP C

FIXED CHARGES.—Covers those items of expense which are more or less fixed from year to year, and includes the following:

INSURANCE.—All insurance, with the exception of employes' liability insurance, which should be charged to the general expense account of Group A, and boiler insurance which should be charged to Power Plant. Expense of any sprinkler system however should be included here, also buildings that carry any of their own insurance should charge here the monthly set ups for their insurance reserve.

TAXES.—All taxes based on property valuation, including real estate and personal taxes, and special assessments. All income taxes should be included under Group D.

DEPRECIATION.—Not only on the building proper, but also on the machinery and mechanical equipment of the building at a higher rate than that charged for the building itself; except, however, that depreciation on machinery and equipment used in the generation of power should be charged against the cost of operating the power plant as explained under Section V. The items under Group C should be set up as they accrue and not as they are paid.

GROUP D

DEDUCTIONS AND NET INCOME.—Includes all those accounts which represent expenditures made on account of invested capital, whether the capital be represented by actual ownership, ground leases, bonds, stocks, or other forms. The accounts included in this group would be ground rent, bond interest, interest on notes, all loan expense, net income, and also income, capital stock and excess profit taxes. Because of the variations in the forms of ownership of building properties, it is necessary, in order to secure accurate comparisons between buildings, to take as a standard situation the case where the building and land is owned outright. In such a case the net earnings over and above expenses (as represented by Groups A., B., and C.) would equal the total of Group D., and would represent the profit from the property. It follows, that if the land, for instance, is leased, the money paid as ground rent would come from that portion of the income considered as profit under the standard conditions of complete ownership. It is, therefore, necessary to group together under this account D. all accounts representing payments to invested capital, whatever the form of this investment. Under this group is also included sums paid for income, capital stock, or excess profits taxes, owing to the fact that these items are really a part of the profit on the property; and also because of the fact that the amounts of these items will vary according to the form of ownership of the property.

The items under Group D. should be set up as they accrue and not as they are paid.

GROUP E

RENT.—Included in this group is all rental income from offices or stores in the building. Account E4 is for special rental income such as theatres, clubs, and halls, and the nature of such rental should be indicated.

GROUP F

MISCELLANEOUS.—This group represents such miscellaneous income as is derived incidentally from the operation of the offices, but is not a form of service for which the tenant pays; such, for instance, as the sale of waste paper.

GROUP G

GENERAL EXPENSES BILLED.—This account represents the amount of general expenses, or overhead, charged against tenants as part of their bill for alterations or miscellaneous services. (See Definition of Group L and Account A-6.)

The total of the expense groups A. B. C. & D. will of course equal the total of the income groups E., F. & G.

Section IV.—THE SERVICE GROUP OF ACCOUNTS

As previously explained, the grand division of the statement called "Service Income and Expense Accounts" includes the cost and income from all services paid for by tenants in addition to the rent. In considering the comparative earnings of several buildings, we cannot, of course, include in the Rental Income any of the profits which some of these buildings may be making from their service features. These service features are in the nature of side lines. If one building, by having a lighting plant from which it serves an entire block and from which it makes considerable profit, can thereby increase its net profits above those of the other buildings, having no such secondary source of income, this fact must be brought out in the statement. It is also of vital importance to any building having these service features to know whether they are self-sustaining and are actually a source of profit, or whether they are being conducted at a loss. If they are being conducted at a loss, the amount by which this loss reduces the net profits should also be brought out in the statement.

The group of accounts into which the "Service Income and Expense" portion of the statement is divided is as follows:

GROUP H

ROUTINE SERVICES—EXPENSE.—This Group includes cost of all those regular or routine services for which the tenant pays in addition to his rent, and includes such items as electricity, steam, ice and water, towels, and clock service. In other words, these are the services for which a monthly charge is made.

GROUP I

ALTERATIONS PAID FOR BY TENANT—EXPENSE.—The cost of alterations for which the tenant pays should be charged to this account. If the cost of any alteration is divided between the building and the tenant, the cost of that portion paid for by the tenant should be entered to this Group I.; while the remainder of the cost paid for by the building should go to Group B.

GROUP J

JOBBING—EXPENSE.—This account covers the cost of all miscellaneous jobbing for tenants, not included under Group H. or I.

GROUP K

PROFIT.—This account is the balance of the "Service Income and Expense" group of accounts, and represents the profit on the services sold to tenants.

GROUP L

ROUTINE SERVICES—INCOME.—To this account will be credited the amount received from the tenant for services, less the proportion of General Expense included in the customer's bill, which will be credited to Group G. above. In other words, if the energy cost of electric light for one month is, say, $1,000 and the proportion of general expense (which is account No. 6 of Group A.) chargeable to cost of electricity, is $150, then the total cost of the electricity would be $1,150. However, of this cost only the $1,000 would show in the H. accounts; the $150 being included in the A-6 account "General Expense." Then, if the profit on this electricity is $150, the full amount for which the tenant is billed would be $1,300. However, of the $1,300 the amount representing the proportion of General Expense, or $150, would be credited to Group G. as a contra entry against the cost of this overhead included in Group A. The balance of $1,150 would then be entered into Group L., while the profit would, of course, be reflected in Group K. In other words, the Income Accounts in Group L. should be credited with the total income from services, minus the amount of General Expense charged against the services.

ILLUSTRATION

Rental Income and Expense

Group A. General Expense	$150	Group G. General Expense Billed	$150
Total	$150	Total	$150

Service Income and Expense

Group H. Cost of Electricity	$1,000	Group L. Electric Income	$1,150
Group K. Profit	150		
Grand Total	$1,300	Grand Total	$1,300

GROUP M

ALTERATIONS—INCOME.—To this account will be credited the amounts paid by tenants for alterations. The General Expense portion of this income would be treated as explained under Group L.

GROUP N

JOBBING—INCOME.—Income from miscellaneous jobbing for tenants General Expense treated as explained under Group L.

TOTALS

The total of the expense Groups H., I., J., and K. will of course equal the total of the Income Groups L., M., and N. Also the total of the "Rental Expense" groups plus the "Service Expense" groups will equal the total expenditures of the building for all purposes, plus net rental income and service profit. In like manner the total of the "Rental Income" groups plus the total of the "Service Income" groups will equal the total income of the building from all sources.

Section V.—THE GROUP A. ACCOUNTS

Method of Classification

In dividing the various maintenance operations of a building into separate accounts your Committee has found it necessary to adopt a principle radically different from that in effect throughout the larger number of office buildings. Perhaps the most commonly accepted method of classifying expenditures is by the departments making the expenditures, such as, Janitor Department, Elevator Department, Carpenter Shop, Power Plant, etc. Comparisons of such a classification of accounts is, however, impossible because each building has a different method of organizing its work, so that departments called by the same name in various buildings are really not the same departments and do not do the same work. An example will make this point clear, and also serve to illustrate the principle of classification adopted by the Committee.

In one building the total labor and material used by the Janitors for the year 1920 was $132,490.12. An analysis of this figure showed that it was distributed as follows:

Work done in connection with alterations	$ 77.82
Work done in connection with services for which tenants pay	18,663.33
Cleaning in tenants premises	60,952.43
Marble Polishing, Metal Polishing, toilets, etc.	18,867.14
Cleaning in corridors and public portions of the building	16,051.60
Window washing	4,976.19
Cleaning electric lamps and shades	1,331.58
Dusting elevator shafts	1,661.00
Miscellaneous work	2,200.92
General Expense	7,654.96
Heating and Plumbing	53.15
Total	$132,490.12

In other words, this building included under the head of Janitor Department items which other buildings might have classed under such headings as Repairs, Shops, Elevator, Power Plant, etc. It is thus seen that there would be little value derived from comparing costs kept under such a classification of accounts. Another point to be brought out from the above illustration, is this. Suppose a tenant in this building desires to do his own Janitor Service and the building agrees to give him a credit for doing so. If this building took the total cost of the Janitor Department and divided it by the rentable area of the building the result would be approximately 35c per sq. ft., and without going into the matter further they might decide that that was the proper credit to give the tenant. However, it is seen from the analysis of the figures that only 46 per cent of the expenditures in this department actually went to the cleaning of the tenants offices. This tenant, therefore, should be allowed a credit for only this portion of the work, or about 16c per sq. ft.

Your Committee, therefore, believes that the only possible method of dividing operating accounts that will permit of accurate comparisons is to take as a basis of such a division a grouping of the work done, instead of the department which does the work. Under this principle it is a very simple matter to provide a division of accounts for Group A. as shown.

Section VI.—DEFINITIONS OF GROUP A. ACCOUNTS

A definition of each of the accounts is as follows:

1. CLEANING OF THE BUILDING

Should include window washing, marble polishing, metal polishing, and all janitor services, whether cleaning of tenants' quarters, building corridors, toilets, cleaning of elevators and shafts, cost of vacuum systems, etc.

2. ELECTRICAL SYSTEM

Should include the cost of maintaining all electrical equipment throughout the building, from the main switchboard in the basement to the fixtures in the offices. Also cost of maintaining and renewing fixtures. To this number, however, will be charged only the cost of electricity used by the building in the corridors, toilets, and other public portions of the building, but not any of the current sold to tenants, which cost should be charged to Group H.

In other words, whether a building itself sells electricity or lighting to its tenants, whether the tenants buy the electricity from Central Station, or whether the building gives the tenant free light, in any case the building must maintain the lighting system, consisting of the main switchboard, risers, feeds, fixtures, etc., throughout the building. This, therefore, is strictly a part of the rental expense of the building. On the other hand, if the building sells current to its tenants and secures an additional income therefrom, the cost and income from that current is a strictly Service Expense and Income item, and should not be included among any of the Rental Income and Expense Accounts. For the purpose of comparison, buildings furnishing tenants with free light should still set up the cost of this current under Group H., and not under this number, for two reasons.

First.—Unless this is done, no accurate comparison of the electrical costs of various buildings can be made.

Second.—By doing so, the building itself will know just how much it is losing on this service.

The second is perhaps the more important of the two reasons, and this same method should be followed in distributing the costs of any of those building services for which some buildings make a charge and other buildings do not. The buildings who do not make a charge will then see clearly how much of a load their rental income is carrying. (See Account No. 7 below.)

3. HEATING AND VENTILATING SYSTEM

To include the cost of maintaining the entire heating system in the building from the main steam headers in the basement to the radiators in the offices, including the regulating of the thermostats; also the cost of ventilating and indirect heating systems. If possible, the cost of steam used for heating and current used for ventilating motors should be charged against this account. (See Account No. 7 below.)

4. PLUMBING SYSTEM

Should include the cost of maintaining Hot, Cold, Ice-water and Refrigeration systems in the building, from the house pumps in the basement to the wash-basins in the offices. To include also the maintenance of plumbing in toilets. Gas and air supplied in professional buildings should be included as sub-divisions here.

5. ELEVATORS

To include the wages of operators and starters, cost of cables, maintenance of signal systems, repairs to grill work and gates, etc. Current or steam used to operate the elevator system should also be charged to this account, if possible. (See Account No. 7 below.)

6. GENERAL EXPENSE

This account should cover very much more than mere office expense and administration salaries. It should include all clerical work, legal services, general supplies, the maintenance of stock room and shops, the expense of miscellaneous machinery and tools, including cost of power used by same, and all other items not chargeable to any other number of the Group A. Accounts. In other words, all the other numbers of the Group A. Accounts represent some definite plant or portion of the building on which the operating expenditure is being made. There is, however, a large item of operating expenses which cannot be definitely assigned to, or accurately divided among any of these accounts. All such expenses should be included under this heading of General Expense.

Every building should establish a percentage relation between this General Expense Account and the total of the Groups A. (less this account No. 6), B., H., I., and J. That is, the total of those groups of accounts mentioned represent the total operating expenditures among which the General Expense, or overhead, must be proportioned. For instance, if General Expense equals 10 per cent of Groups A., B., H., I., and J. then all the alteration jobs and Service Accounts should have 10 per cent added to their cost, and the amount thus added should be set up as a credit to General Expense under the Income Account G. (See definition of Group G.)

7. POWER PLANT

Under this heading should be included the entire cost of all energy production. It should not include labor and material spent in the operation of elevators, the maintenance of the heating system, or the distribution of electricity throughout the building. As the purpose of the Power Plant is to produce power for use by other departments, Power Plant records should be kept so that these other departments can be charged each month with the cost of producing the power which they use, and the Power Plant credited with that amount. Where it is possible to do this, the Power Plant Account should be entirely distributed to the other accounts and thus closed out each month. As this will not be possible under the present accounting systems used in many buildings, it will always be necessary in making comparisons of these operating accounts to state whether power is included in the account proper, or carried separately in the Power Plant Account. (For detailed description of Power Plant accounting see Section V.)

Section VII.

SUB-DIVISIONS OF THE GROUP A. OPERATING ACCOUNTS

In sub-dividing the Group A. operating accounts as given in Section III, there are two methods which may be followed. The first consists of merely dividing each account into two sub-divisions, labor and material. The second

method is to sub-divide the accounts into definite operations, that will permit of monthly and yearly comparisons, and thus indicate the rise or fall of cost of performing any of the particular operations, as well as permit the comparison of the operation between several buildings. This method requires the adoption of some form of cost accounting, and involves a certain amount of clerical labor which would be well expended in the larger buildings, but might not be worth while in the smaller. (See Part II.)

The Subdivisions shown on Form 21 are suggested, although these subdivisions would doubtless vary in each building. This list is intended primarily as a guide as to what items should be included under each account.

In addition to sub-dividing the Group A. operating accounts, as indicated, a cross division of these accounts both by labor and material, and also by the departments doing the work, is of value in making comparisons of the operating costs of any building from year to year. That is, if there is an increase, for instance, in the Elevator Account for this year over last, a sub-division of the figures into Labor and Material would indicate at once which is principally responsible for the increase. A further cross division of the Labor into elevator operators, engineers, etc., would still further definitely locate the place of increase in expenses. Such a cross division is in reality a still further subdivision of the sub-accounts.

The methods used to obtain such cross divisions of the accounts are properly a branch of cost accounting and will be considered in detail under Part II of this Report. At this point, however, attention is called to the Distribution Sheet, Form 21, showing the distribution of Labor, Material, Contracts, and Power for any month, on which the accounts are given by sub-divisions with a cross division by Labor and Material, and by departments as shown. Any details of this statement that are not self-explanatory will be covered in Part II of this Report.

Section VIII.—POWER PLANT ACCOUNTING

The comparison of Power Plant or Engine Room costs is probably the most difficult of any, owing to the many different methods of producing or obtaining power for use in buildings. While some buildings produce their entire power supply, others buy current and produce heat only, and still others buy both the steam and electricity.

Inasmuch as the Power Plant is the source of the power which is used by other departments, or plants, of the building, the operating costs of the Engine Room should be kept separate from that of all other building operations. In other words, the Power Plant Account should be so designed as to enable the Power Plant to each month bill each department of the building for the power which it consumes.

This means that Power Plant Accounting must give unit costs for steam and electricity, so that each department consuming energy can be billed for the quantity which it consumes. The extent of the Power Plant Accounting will depend upon the work performed in the Engine Room. That is, upon whether the Engine Room is a heating plant solely, or whether it generates electricity and furnishes high pressure steam for elevators or other machinery. In either case the first form in which the energy is used is that of steam, and the cost of producing steam should be arrived at first of all.

COST OF PRODUCING STEAM

The cost of producing steam will be made up of the following items:

1. Coal or other fuel.
2. Ash removal.
3. Boiler Room labor.
4. Boiler Room supplies and repairs.
5. Depreciation of Boiler Room equipment and interest on investment.
6. All Power Plant General Expense or Overhead.
7. Rental Value of space occupied by Power Plant.

The last item of Power Plant General Expense is added to the steam cost, because, as all other power produced by the Power Plant comes primarily from steam, any overhead added to the steam cost will in this way be properly distributed. Except, however, that if only heat is produced in the plant and electricity is purchased, it would then be necessary to distribute part of the Chief Engineer's time, and perhaps some of the other plant overhead to the maintenance of the electrical equipment. This, however, would not be charged under Account No. 7 Power Plant, but to Account No. 2 Electric System, or such other of the building operations as are responsible for the expense. That is, all Power Plant Overhead left in Account No. 7 should be included in the cost of producing steam.

The total of the above costs should be divided by the amount of steam produced each month or year, and thus obtain a cost per thousand pounds of producing steam.

STEAM METERING

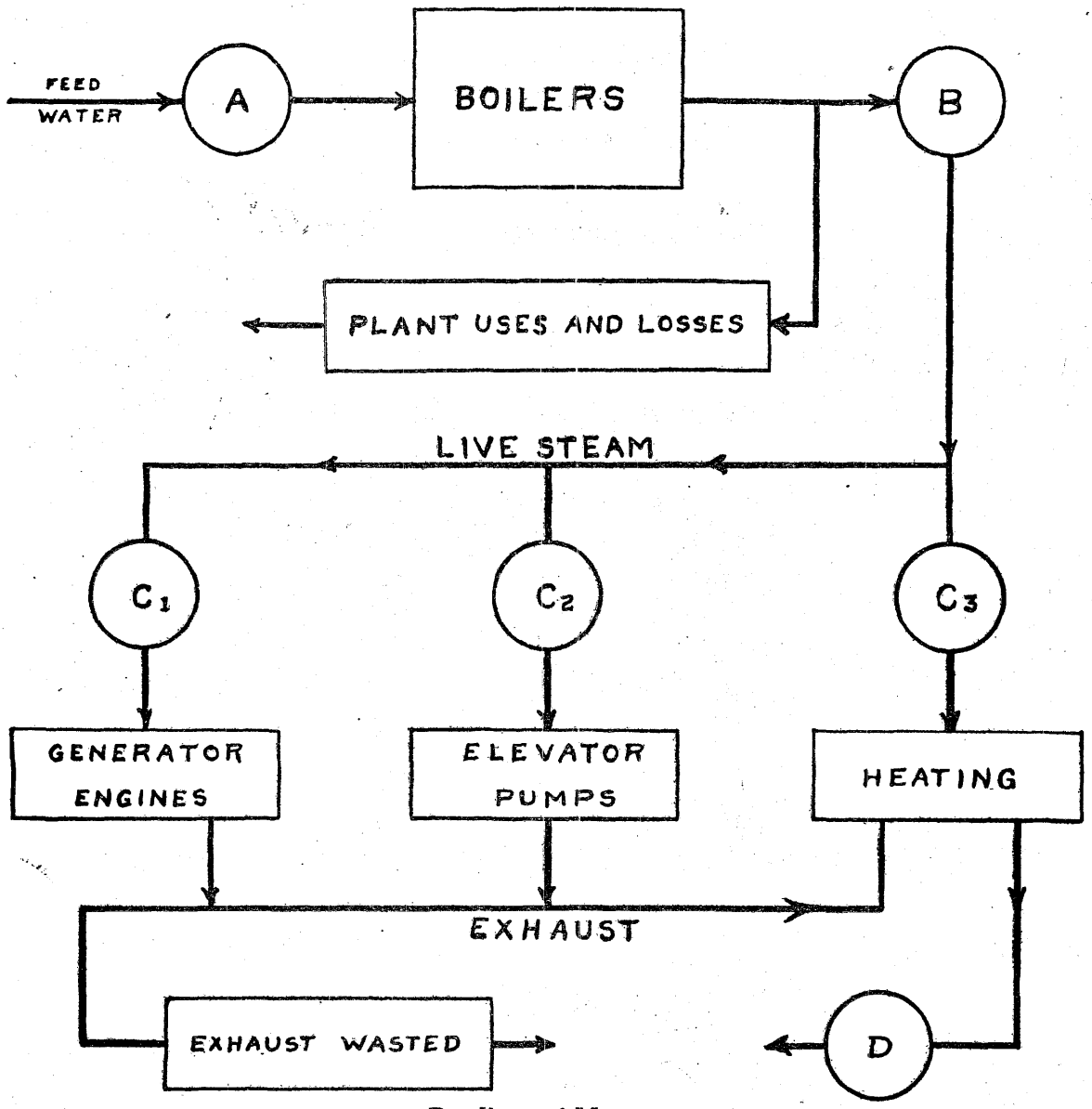
In nearly all office building power plants it will be necessary, in order to obtain accurate information as to the quantity of steam produced and consumed, to use steam meters. Even where the Power Plant produces only heat, so that no division of the Power Plant Expenses is necessary, steam meters would still be a very valuable aid to economical regulation of steam consumption.

For a complete isolated plant the following steam meters should be installed:

B. Flow Meters on the boiler room headers, to measure the quantity of steam actually produced. Quantities obtained by measuring the feed water through water meters (A) are always too high, as they include all leaks, blow-offs, and the consumption of steam by stoker engines, feed pumps, etc. This method, therefore, does not give an accurate measurement of the amount of steam usefully employed for generators or heating. A feed water meter, however, is valuable as providing a check on the quantity of such plant losses.

C1. C2. C3. Separate flow meters should be installed to measure the quantity of steam used by the generators, elevators, if hydraulic, and the quantity of live steam supplied to the heating system. In cases where there is only a short distance between the boilers and the generators, or other steam using apparatus, the total of these meters will give practically the same result as the reading of the flow meters on the boiler headers. The boiler header meters could in that case be eliminated.

STEAM METERING DIAGRAM



Readings of Meters.

A. Boiler Feed Water Meter = Water supplied to boilers.
B. Boiler Header Steam Meter = Steam generated.
C-1, C-2, C-3. Steam Consumption Meters = Steam used.
D. Condensation Meter on Heating System Return = Total steam used for heating.
A. — B. = Plant Losses and Uses.
B. — (C-1, C-2, C-3) = Line Losses.
D. — C-3 = Exhaust Steam Used in Heating System.

D. If exhaust steam is used for heating, the returns from the heating system should be measured by a condensation meter. The difference between the reading of the condensation meter and the meter supplying live steam to the heating system will give the amount of exhaust steam used for heating. Credit for this exhaust steam used for heating should be given to the generators, or pumps, in proportion to the amounts used by the generators, or pumps.

The following metering diagram for an isolated plant indicates the location and purpose of the various meters above described:

With such a metering system, the cost of producing steam per thousand pounds can be determined and the value of the steam metered to the various equipment using it, or to any outside users, such as restaurants and other customers, can be determined, and each of these consumers charged for the amount so used.

COST OF PRODUCING ELECTRICITY

Having determined the steam cost per thousand pounds, the cost of producing electricity will then be made up of the following items:

1. Cost of steam used.
2. Labor for generators and engines only.
3. Repairs and supplies for generators and engines.
4. Depreciation on generators and engines and interest on investment.
5. Credit for the exhaust steam actually used for heating.

It is an engineering fact, that after steam has been used through engines or pumps it retains approximately 90 per cent of its value for heating. The larger part of the 10 per cent loss is due to condensation of the steam in the cylinders, which condensation is drained off through the steam traps, and consequently does not form a part of the exhaust and so will not be metered by the condensation meters after having passed through the heating system. While these losses do not represent the entire value of the energy taken out of the steam by the engines, it is the opinion of the Committee that the results obtained by crediting to the generators the amount of exhaust steam, as determined by subtracting the live steam used in the heating system from the full amount, as determined by the condensation meters, will be sufficiently accurate.

The total cost of producing electricity should be divided by the number of K. W. hours produced, to determine the cost per K. W. hour of generating electricity. Electric elevators, lighting system, power motors, etc., should then be billed at this rate for the quantity of electricity consumed by them. The cost of repairs and maintenance of elevators, or lighting system should not be included in this account, as they are already included in the operating accounts for elevators or electric operation.

COST OF OPERATING HYDRAULIC ELEVATORS

If a building is equipped with hydraulic elevators, the cost of operating the elevator pumps would be determined as follows:

1. Cost of steam used.
2. Labor for pumps only.
3. Repairs and supplies for pumps.
4. Depreciation on pumps and interest on investment.
5. Credit for the exhaust from the pumps actually used for heating.

The cost of any other equipment using steam, such as refrigerator pumps, house pumps, sewer ejectors, etc., which it may be desirable to obtain, can be found in the same manner as outlined above.

HEATING

The cost of heating a building will consist of the following:

1. The cost of any live steam used in the heating system.
2. The cost of the exhaust steam actually used in the heating system.

Repairs and maintenance of the heating system throughout the building would not be included here, as they would be charged direct to the operating account of Heating and Ventilating. That is, if employees of the Engine Room maintain the heating system throughout the building, their labor and the cost of supplies used, would be charged direct to Account A-3.

STEAM AND ELECTRICITY SOLD

All steam and electricity sold should, of course, be metered to the customers, and such customers billed at a proper rate per thousand pounds, or per K. W. hours. In the case of electric rates, these should correspond with the rates charged by the Central Station Electric Company operating in the city. The same would be true of the steam rates, where there are Central Station Heating Plants. Should there be no such plants from which to obtain steam rates, the Committee will be pleased to supply any member with further information on this point.

Further details of Power Plant Accounting will be given under Part II of this Report.

Where it is possible to keep accurate Power Plant Accounts as described herein, the Power Plant Account will be entirely distributed to the other accounts, and thus closed out each month.

In these cases, therefore, there will be no entry on the "Standard Form of Statement" for Account No. 7, Power Plant; but all the accounts under Group A. that use power will have a sub-division for power to which the various power entries will be made. This will enable proper comparisons between the Operating Expenses, exclusive of power, of such buildings and of those buildings that charge all power to Account No. 7.

In plants where the cost of energy cannot be actually determined and measured, an effort should at least be made to make accurate estimates of the amount of energy used by each operating department, and charges made to the department on that basis. If even this cannot be done, the Power Plant Account will have to be carried as a separate item under Account No. 7, from which, however, should be excluded, as much as possible, the cost of maintaining the machinery and equipment outside the engine room, such as elevators, lighting system, etc. In other words, the Committee wishes Account No. 7 to represent only the cost of producing or purchasing power, and not any cost in connection with the consumption of it.

Of course in following out the principles already outlined, no income from energy sold from the engine room will be credited to Account No. 7, but to the accounts under Group L. Also the cost of the energy thus sold will be charged to Group H.

The following is an illustration of how Power Plant Costs are made up and distributed:

A. **Cost of Steam.**

1.	Coal	$ 8,750.00
2.	Ash Removal	70.00
3.	Boiler Room Labor	3,000.00
4.	Boiler Room Supplies and Repairs	775.00
5.	Boiler Room Depreciation	1,550.00
6.	All Plant Overhead	775.00
7.	Rental value of space	500.00
		$15,420.00

Total steam production	25,700,000 lbs.	
Cost per thousand pounds	60c	
Steam to Generators	22,500,000 lbs.	
Live steam for heating	3,200,000 lbs.	
	25,700,000 lbs.	
Total steam for heating	16,000,000 lbs.	
Live steam for heating	3,200,000 lbs.	
Exhaust used in heating	12,800,000 lbs.	

B. **Cost of Electricity.**

1.	22,500,000 lbs. steam @ 60c	$13,500.00
2.	Labor for generators	3,000.00
3.	Supplies and Repairs for generators	1,500,00
4.	Depreciation on generators	960.00
		$18,960.00
5.	Credit exhaust for heating 12,800,000 lbs. @ 60c	7,680.00
		$11,280.00

Total output, 500,000 K. W. Hours
Cost per K. W. Hr. = 2¼c.

Charge Electric Light Sold	150,000 K. W. @ 2¼c	$ 3,375.00
Charge Electric System for	60,000 K. W. @ 2¼c	1,350.00
Charge Elevators for	175,000 K. W. @ 2¼c	3,945.00
Charge to General Expense	115,000 K. W. @ 2¼c	2,610.00
		$11,280.00

Cost of Heating and Hot Water.

1.	Live steam, 3,200,000 lbs. @ 60c	$ 1,920.00
2.	Exhaust for heating 12,800,000 lbs. @ 60c	7,680.00
	Total cost of Heating	$ 9,600.00

From these figures can be made up the

		POWER PLANT STATEMENT	Debit	Credit
A.	1.	Coal	$ 9,250.00	
	2.	Ash Removal	70.00	
	3.	Boiler Room Labor	3,000.00	
	4.	Boiler Room Supplies and Repairs	775.00	
	5.	Boiler Room Depreciation	1,550.00	
	6.	All Plant Overhead	775.00	
B.	2.	Labor for Generators	3,000.00	
	3.	Supplies and Repairs for Generators	1,500.00	
	4.	Depreciation on Generators	960.00	
C.	1.	Labor for Heating System	450.00	
	2.	Labor for Electric System	550.00	
	3.	Labor for Elevators	750.00	
A.	4.	Electric System		1,900.00
A.	5.	Heating System		10,050.00
A.	7.	Elevators		4,695.00
A.	8.	General Expense		2,610.00
H.	1.	Electricity Sold		3,375.00
		Total or Account A9.0	$22,630.00	$22,630.00

Departments	COMPARATIVE RECORD OF ACCOUNT A5.1						REPAIRS AND REPLACEMENTS TO ELEVATORS						
Charge for month of	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL
A Labor			.70		.35		4.00	4.03				21.67	30.75
A Material								2.00				142.94	144.94
B Labor													
B Material													
C Labor		1.27											1.27
C Material	36.12		33.70	32.73			11.05	.85		12.65	82.40	244.39	453.89
D Labor				6.98		27.35	23.59	5.60	22.86	2.31	15.06	6.61	110.36
D Material	20.44	23.79	7.25	37.20	23.73	23.54	145.92	183 39	101.56	19.64	434.26	20.61	1,041.33
E Labor													
E Material													
F Labor													
F Material													
G Labor													
G Material													
H Labor													
H Material													
I Labor													
I Material				208.94		20.38	54.57		181.42		55.00	541.91	1,062.22
J Labor													
J Material													
Total Labor		1.27	.70	6.98	.35	27.35	27.59	9.63	22.86	2.31	15.06	28.28	142.38
Total Material	56.56	23.79	40.95	278.87	23.73	43.92	211.54	186.24	282.98	32.29	571.66	949.85	2,702.38
COMBINED TOTAL	56.56	25.06	41.65	285.85	24.08	71.27	239.13	195.87	305.84	34.60	586.72	978.13	2,844.76
COMBINED CHARGE UP TO MONTH OF													
A Labor			.70	.70	1.05	1.05	5.05	9.08	9.08	9.08	9.08	30.75	
A Material								2.00	2.00	2.00	2.00	144.94	
B Labor													
B Material													
C Labor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	
C Material	36.12	69.82	102.55	102.55	102.55	113.60	114.45	114.45	127.10	209.50	453.89		
D Labor			6.98	6.98	34.33	57.92	63.52	86.38	88.69	103.75	110.36		
D Material	44.23	51.48	88.68	112.41	135.95	281.87	465.26	566.82	586.46	1,020.72	1,041.33		
E Labor													
E Material													
F Labor													
F Material													
G Labor													
G Material													
H Labor													
H Material													
I Labor													
I Material			208.94	208.94	229.32	283.89	283.89	465.31	465.31	520.31	1,062.22		
J Labor													
J Material													
Total Labor	1.27	1.97	8.95	9.30	36.65	64.24	73.87	96.73	99.04	114.10	142.38		
Total Material	80.35	121.30	400.17	423.90	467.82	679.36	865.60	1,148.58	1,180.87	1,752.53	2,702.38		
COMBINED TOTAL	81.62	123.27	409.12	433.20	504.47	743.60	939.47	1,245.31	1,279.91	1,866.63	2,844.76		

MEMORANDUM OF ACCOUNT

April I.	Replacing Cable on No. 8 car (labor only)	$ 31.00
April I.	Rescoring sheaves on No. 6 car	177.94
		$208.94
June I.	Repairing tile floor in Cars No. 11 and 12	20.38
July I.	Repairing tile floor in Car No. 9. Also installing bearings on No. 7 car	54.57
July D.	One No. 326 Gurney Bearing	90.00
Sept. I.	Replacing motor bearing on commutator end of No. 1 car	65.38
	Replacing bearing on secondary sheave of Car No. 4	62.71
	Straightening counterweight posts on No. 8 Car	53.33
		181.42
Sept. D.	Repairing 1 ball bearing, No. 326	72.50
Nov. D.	Material—One No. 340 Gurney Bearing	250.00
Nov. D.	Material—Three No. 326 bearings for secondary sheaves	165.00
Nov. I.	Installing bearing on No. 10 car (labor only)	55.00
Nov. C.	Material—New stock of carbon contacts	
Dec. A.	Material—Rubber tile for elevator cars and cement	91.10

SECTION IX

ANALYSIS OF THE STANDARD FORM OF STATEMENT

It is evident that no conclusions can be drawn from a direct comparison of the figures on the Standard Form of Statement of two or more buildings because of the differences in size and class of the several buildings. It is, therefore, necessary to reduce all figures to some common unit or basis. This may be done in two steps.

FIRST—Divide all figures by the total number of rentable square feet in the building, and thus reduce all costs and income to a square foot basis. These square foot figures may be used for the purpose of comparing the figures of the same building for succeeding years.

Such comparison is greatly facilitated if some form of comparative report, such as shown herewith is used. One of these sheets is used for each of the sub-divisions of the Groups A and B Accounts, and the figures are posted for the individual months, and also for the accumulated period from the beginning of the year to date. Each account can thus be studied separately, and the sheet for this year compared in detail with the sheet for the preceding year of the same account. This process of comparing the account for two or more years will be greatly helped, if on each comparative sheet memoranda are made explaining any unusual or special changes in the amount of the particular account in question. Memoranda of this sort are especially valuable after a lapse of time, as they obviate the necessity of making laborious examinations of these accounts after the conditions surrounding them have been more or less forgotten.

SECOND—For the purpose of comparing square foot figures of one building with those of another, it is necessary to determine a standard set of square foot figures for the several classes of buildings. Buildings may be classified according to their valuation per rentable square foot, obtained by dividing the total value of land and building by the total rentable square feet of the building. Standard figures for any valuation are given in the Exchange Report of the Accounting & Exchange Committee.

The most important figure on the Standard Form of Statement is, of course, the total of Group D, Deductions & Net Income. This figure represents the earnings on the total investment in land and building. If it does not equal the desired percentage of return on such total investment, it is an indication, either that operating costs are too high, or the building's rentals are too low. Complete analysis of these conditions are contained in the Experience Exchange issued each year.

PART II. COST ACCOUNTING

SECTION I. PURPOSE AND ELEMENTS OF COST ACCOUNTING

As its name implies, Cost Accounting deals only with costs, and with costs from the particular point of view of individual operations. That is, Cost Accounting as applied to office buildings would not be concerned with the total cost of operating a building, but would be concerned with determining the costs of each of the building's operations, such as, Janitor Service, Elevators, Heating, etc.

Cost Accounting is really a form of analysis of costs, or rather it is the arrangement of costs in such form as to permit of detailed analysis.

The elements of Cost Accounting briefly consist in keeping accurate records of Labor and Material, and distributing them to the several operations whose cost is to be determined. The first step in Cost Accounting is, therefore, to provide a classification of the operations, whose cost is desired. This has been done in Part I. of this report. The second step is to provide the necessary systems of Labor and Material Accounting. The third step is to bring together the Labor and Material Costs for each operation or account.

SECTION II. ACCOUNT AND JOB ORDER NUMBERS

The beginning of Cost Accounting lies in the issuance of orders for work to be done on account of the various operations or accounts concerned. In office buildings these operations group themselves into two general classes:

1st. Routine Operations continuously performed, such as Janitor Service, Elevators, etc.

2nd. Special Operations, such as Alterations, Jobbing for Tenants, etc.

The first group of operations is represented by the accounts under Groups A. and H. The second, by accounts under Groups B. I. and J. For the first group the Account Numbers are used as permanent Work Order Numbers, and all work done for these accounts will every month be charged to these numbers. For the second group called Special Work Orders, an individual Work Order must be issued in every case. The form of such a Work Order is shown on Form 10. These Work Orders are numbered consecutively. Such numbers being the account number to which Labor and Material will be charged. They are signed and approved by the proper authority, and a copy is issued to each of the building's departments interested in the job. If these forms are bound up in books, the stub can be checked indicating the departments to whom orders are sent, as well as the nature of the work and to whom the bill for the work is to be rendered. Upon the completion of the work covered by this order, each department should return their copy, thus indicating that the work is completed.

An index of all Special Work Orders issued should be kept by room numbers on a card form, such as is indicated on Form 11.

NOTE: The Committee again calls attention to the fact that the forms used in this Report are used solely for the purpose of illustrating the principles involved. In fact, the Committee does not urge the adoption of any particular form of cost accounting, but is only interested in showing the necessity and value of cost accounting as applied to office building accounting. Part II. of this Report is primarily intended to be an explanation of the principles and theory of cost accounting. The individual members are at liberty to make use of this theory in any form that will best suit their requirements.

The Committee also wishes to warn members against the idea that cost accounting necessarily means additional clerical help and consequent additional expense. Much of the work outlined herein can, except in the larger buildings, be handled by the building's present organization. For instance, the Daily Labor Reports can be made out by the department foremen. The Stock Records, Material Requisition, and perhaps other items can be handled by the Stock-keeper. In fact, this work can be divided up in almost any manner desired.

NO. 7712

DATE 2-12-21

CHARGE TO

The Northwestern Company

DO Alterations as per plan approved

CUST. NO.

THIS JOB COVERS ORDERS TO DEPTS. CHECKED

Depts.	√	Ret'd
Office	√	
Supt.	√	
Carpentry	√	
Painting	√	
Electrical	√	
Enginer'ng		
Elevator		
D. Janitor		
N. Janitor		
Contracts		

(61)

_____ BUILDING WORK ORDER

Do the Following Work in Room No. 800 **Date** February 12, 1921

Make alterations as per plan approved

Approved _____ Manager **Signed** _____

(Form 10. Special Work Orders.)

ROOM NO. 800

JOB NO.	DATE	DESCRIPTION OF WORK	TENANT'S ORDER NUMBER	CHARGE TO
	1921			
7712	2-12	Making alterations as per plan approved	Northwest	ern Co.
7741	4-1	Repair desk as directed		,, ,,

Form 11. Work Order Index Card.

Upon receipt of a copy of the Work Order by the Cost Clerk, a Job Cost Sheet is made out for each of the Special Work Orders on a Form as shown on No. 12. A similar sheet is also made out monthly for each of the Account Numbers, as shown on Form 12A. The top of this sheet contains a copy of the original Work Order giving the character of the work done, to whom it is to be charged, etc. The rest of the sheet contains columns in which can be posted the hours and amounts of labor, and the requisition numbers and amounts of material used on the job. These sheets are all filed in a loose leaf binder in numerical order. The further handling of this sheet will be considered in Section VII.

At the same time that the Work Order Sheet is made up a Work Order Envelope is also made up. In this envelope is placed all the information regarding the job, such as, the Tenant's Order, any estimates that may have been made, the original tracing of plans for alterations, etc. This envelope is then filed in a pending file until the work has been completed and billed, when it is transferred to a permanent file.

SECTION III. MATERIAL ACCOUNTING

For accurate accounting of the Material used in an office building, whether for work done for tenants or for the regular maintenance of the building, it is necessary that all such Material should be handled through a stock room. Such a room should be used for all Material and Supplies for all departments, and also for all old material which may accumulate through remodeling and alterations. This stock room should be in charge of a stock-keeper, so that

No - 7712

Do the Following Work in Room No. 800 Date July 12 - 1921 1919

	LABOR		MATERIAL				
Carpenter	117	43	5	30	Job Cost	286	83
Painting	111	80	5	66	Overhead	43	07
Electrical	40	50	6	14		379	85
Plumbing					Profit	49	97
Steamfitting					Billed	379	82
Janitor							
Elevator							
Plaster							
Contracts							
Total -	269	73	17	10			
Grand Total			286	83			

Making Alterations as per plan Approved - Charge to - The Northwestern Co.

JOB COST

Carpenter

Date	Hours	Rate	Amount	Date	Req. No.	Amount
7/20/21	1	1.30	1.30	7/21	5500	5.30
"	4	1.75	5.00			
21	4	1.30	4.60			
"	13	1.75	16.75			
22	4	1.30	4.60			
"	15	1.75	18.75			
"	8	1.00	8.00			
24	4	1.30	4.60			
"	8½	1.25	10.63			
26	14	1.25	17.50			
"	6	1.00	6.00			
28	4	1.30	5.20			
"	8	1.75	10.00			
Feby total			106.43			
3/1	6	1.25	7.50			
"	1	1.00	1.00			
3	4	1.75	4.50			
March total			11.00			
Grand total			117.43			

Painter

Date	Hours	Rate	Amount	Date	Req. No.	Amount
7/20	4	1.30	4.60	7/21	5600	5.66
"	18	1.75	31.50			
21	3	1.30	3.90			
"	14	1.75	24.50			
22	1	1.30	1.30			
"	4	1.75	5.00			
28	3	1.30	3.90			
"	24	1.25	30.00			
Feby total			96.70			
3/1	4	1.30	2.60			
"	4	1.75	5.00			
3	4	1.75	4.50			
4	4	1.75	5.00			
March total			15.10			
Grand total			111.80			

Electrician

Date	Hours	Rate	Amount	Date	Req. No.	Amount
7/21	1	1.37½	1.37	7/21	5705	3.37
"	6	1.25	7.50	"	5710	2.17
22	3	1.25	3.75	"	5717	.60
24	1	1.37½	1.37			6.14
"	4	1.25	5.00			
25	1	1.37½	1.38			
28	3	1.25	3.75			
Feby total			24.17			
3/1	1	1.37½	1.38			
"	4	1.25	5.00			
4	6	1.25	7.50			
5	2	1.25	2.50			
March total			16.38			
Grand total			40.50			

Form 12. Job Cost Sheet. (Form reduced in size.)

NOTE.—The term "overhead" used on this form should have been "General Expenses."

No - A7-1

Do the Following Work in Room No. _____ Date July 1921 1919

	LABOR		MATERIAL		
Carpenter	4	38			
Painting					
Electrical	75	82			
Plumbing ~~ENGINEER~~ Steamfitting	2	35	3	90	Repairs and Replacements to Elevators
Janitor					
Elevator					
Plaster					
Contracts					
Total	87	55 85	3	90	

JOB COST

Carpenter

Date	Hours	Rate	Amount	Date	Req. No.	Amount
7/10/21			1.88			
17			7.50			
			9.38			

Electrician

Date	Hours	Rate	Amount	Date	Req. No.	Amount
7/1/21			567			
7			695			
3			367			
4			789			
5			1750			
8			100			
9			463			
10			100			
11			731			
17			300			
13			150			
15			731			
16			300			
17			700			
18			731			
19			363			
20			731			
27			567			
30			467			
			7587			

Engineer

Date	Hours	Rate	Amount	Date	Req. No.	Amount
7/13/21			7.35	7/13	4016	3.90

Form 12a. Account Cost Sheet. (Form reduced in size.)

the records of the receipts and disbursements of all materials can pass through one person's hands and thereby be fully accounted for. It is not the best practice to have each department keep their own material and depend upon the memory of several different persons for accurate material records.

The first form used in the handling of material is the Purchase Order. This Purchase Order will be issued in triplicate, the original, Form No. 13, going to the vendor; the duplicate, Form No. 14, being filed numerically in the office, and the triplicate, Form No. 15, going to the stock-keeper. The triplicate will be held by the stock-keeper until receipt of the goods ordered, whereupon the stock-keeper will check the quantities and condition of materials and then return the triplicate to the bookkeeper. The bookkeeper is thus informed of the receipt in proper condition of the goods ordered, and he should always have this stock receipt before paying the bill for the goods.

Upon receipt of the goods, the stock-keeper will also make the necessary entries on the proper stock cards, using a separate card, Form No. 16, for each item.

When any department desires material it must be requisitioned from the stock room, using the requisition Form No. 17. This requisition, bound up in duplicate in books, is made out and signed by the various foremen; the duplicate remaining in the book. This requisition must state the quantity and description of material required and the account, or job number, to which it is to be charged. The person to whom the goods are given acknowledges receipt of the same on the original of the requisition which is then left with the stock-keeper. The stock-keeper thereupon enters the issuance of the goods upon the proper stock cards and forwards the requisition to the Cost Clerk. The Cost Clerk enters the prices of the material, makes the necessary extensions, and enters this amount, together with the requisition number, on the Job Cost Sheet, Form No. 12. The Material Requisition is then filed in the Job Envelope.

SECTION IV. LABOR ACCOUNTING

The employees of an office building are of two general classes. First, those who do nothing but routine work, such as, elevator men, and whose entire time would, consequently, be charged to one account. Second, those who do many different things during the day, all chargeable to different accounts. In the first class, a Departmental Labor Report, such as shown on Form No. 18, will be sufficient.

In the second case, it will be necessary for each employee to make out a Daily Labor Report Card, Form No. 19, upon which he will indicate where he worked, description of the work, the hours on each job, and the job number to which the job or jobs should be charged. These Daily Labor Report Cards should be turned in to the foremen each night and by the foremen entered upon a Departmental Labor Report, such as, Form No. 20. These Departmental Labor Reports may be expanded into Operating Reports of the various departments by providing for information other than that of time, as indicated on Form 18.

BUILDING PURCHASE ORDER No. 3747

_____ STREETS

DATE 2-10- 19 21

Adam Schillo Lumber Company,
1560 Kingsbury St,,
Chicago, Ill.

NOTE.—RENDER ALL BILLS IN DUPLICATE GIVING ABOVE ORDER NUMBER.

QUANT.	*Kindly Deliver the following goods to Building:*	RATE	PRICE
500'	1" Pine		
1000'	2" ,,		

and charge to account of

_____ BUILDING

TELEPHONE_____

BY _____ MANAGER

Form 13. (Original) Purchase Order to Vendor.
Form 14. (Duplicate) Purchase Order to Cost Dept.

BUILDING MATERIAL RECEIPT on P. O. No. 3747

DATE 2-10 19 21

Adam Schillo Lumber Company,
1560 Kingsbury St.,
Chicago, Ill.

NOTE.—STOCK MAN WILL CAREFULLY COUNT GOODS AND CHECK IN LEFT HAND COLUMN.

CHECK	QUANT.	*Received the following material in good condition:*	RATE	COST
	500'	1" Pine		
	1000'	2" "		

REC'D DATE _____ BY _____

ENT'D DATE _____ BY _____

BY _____ MANAGER

(25)

Form 15. (Triplicate of 13) Material Receipt, to Stockroom.

PART NO.	1" Pine	COST	SELL	LOCATION	MAX
	SIZE DESCRIPTION	$.50¢			MIN
		MODELS		SEC. BIN	MIN. WILL LAST
E 54					UNIT

ORDERED			RECEIVED			ISSUED							
DATE	PUR. NO.	QUANTITY	DATE	REC. NO.	QUANTITY	DATE	REC. NO.	QUANTITY	ON HAND	DATE	REC. NO.	QUANTITY	ON HAND
2/11/21	3747	500'	2/12/21		500'	2/21/21	5500	12'	488'				
BACK ORDERED		DIRECT SHIPMENT	BACK ORDERED		FACTORY SHIPMENT								
DATE	PUR. NO.	QUANTITY	DATE	REC. NO.	QUANTITY								

MADE BY BAKER-VAWTER CO.

(26)

Form 16. Stock Card.

5500

_____ BUILDING

STOCK REQUISITION

STOCKMAN: If this requisition is properly signed by a Department Foreman,

Date 2-21-21

Deliver to CARPENTER

WORK ORDER NO	QUANTITY	MATERIAL	P.O. NO.	RATE	AMOUNT	WHERE USED
7712	12'	1" Pine	3366		1.20	800
	54'	2" ,,	3307		4.10	
					5.30	

Received above Material _____

Entered on Stock Record _____

Signed _____

Foreman

Form 17. Stock Requisition.

DAILY REPORT OF NIGHT JANITOR DEPARTMENT

N

Form 462

DATE Saturday July 19 1924

SECTIONS	Floors	A2-7 Clock Number	Hours	Amount	A2-4 Clock Number	Hours	Amount	A2-7 Hours	Amount	A7-0 Hours	Amount	Hours	Amount	A2-7 Hours	Amount	A8-1 Hours	Amount
1					300	-										14½	8.33
2	19				767			9½	4.98								
3		160	8	3.70	767	9½	4.98										
1		189	8	3.70	191	8	3.04										
2	18				763	8½	4.48										
3		197	8	7.88	781	8	3.36										
1		185	8	3.70	737	8	3.70										
2	17	166	8	3.70	764	9½	4.79										
3		153	8	3.70	751	8	3.36										
1		183	8	3.70	760	9½	4.41										
2	16	747	8	3.04	738			8	3.70								
3		775	8	3.70	736			8	3.04								
1		152	8	3.70	717			8	7.88								
2	15	176	8	7.88	777			—									
3		169	8	3.70	733	4	1.52	3	1.14	1	.38						
1		255	8	3.70	778	4	1.52	3	1.14	1	.38						
2	14	209	8	3.70	746	4	1.44	3	1.08	1	.36						
3		255	8	3.70	179	4	1.44	3	1.08	1	.36						
1		162	8	3.70	180			8	7.88								
2	13	207	8	3.70	158			8	7.88								
3		737	8	7.88	734			8	3.04								
1		177	8	7.88	746			8	7.88								
2	12	735	8	3.70													
3		743	8	3.70													
1		156	8	7.88													
2	11	704	8	3.70													
3		186	8	3.70													
1		766	8	3.70													
2	10	715	8	3.70													
3		758	8	3.70													
1		739	8	3.70	761	1	.51	1	.50					7½	3.78		
2	9				781											8	3.70
3		171	8	3.70	787											8	3.70
1	)	163	8	2.88													6.40
2	8	181	8	3.70													
3		175	8	3.70													
1		250	8	3.04													
2	7	167	8	3.70													
3		777	8	3.70													
1		749	8	3.70													
2	6	748	8	3.04													
3		168	8	3.70													
1		747	8	3.04													
2	5	188	8	3.70													
3		199	8	3.70													
1		771	8	3.04													
2	4	731	8	3.04													
3		157	8	3.04													
1		701	8	3.70													
2	3																
3		776	8	3.70													
1		741	8	3.04													
2	2	746	8	3.70													
3		197	8	3.70													
1		154	8	7.88													
2	1																
3		779	8	3.70													
		51-		$159.68	75		$37.83		$30.77		$1.48				$3.78		$14.73

Cuspidors Polished on Floors
17- 11- 10- 9- 8- 7- 6

Adjust Heat in Rooms 478 - 1035 - 1741

Employees Absent

Clock No.	Name	Clock No.	Name
190	Macina		
730	Kolofski		
A1-24 155	Casper		
151	Jones		

REMARKS

Rooms Scrubbed 1975 - 1775 - 1375 - 1131 - 1075 - 747 340 - 745 - Mez Toilet - Elect Shop - Stairs and Elevators - 1960 - 6 - 8 - 10 - 75 - 45 - (1300-777)

General Remarks
Hot Water faucet leaking in room 1774
Cuspidor missing in room 1817

Time Charged for Service to Job 771Y Room 800

Clock No.	Work	Hours	Amount
777	Janitor Work	8	3.70
767	" "	8	.53
761	" "	1	.51
760	Mopping	1	.47
763	"	2	1.01
764	"	1	.51
767	"	1	.49
300	Supervision	1	.67
			$7.39

SUPERINTENDENT'S NOTES

Job. A2-7. $190.40
A2-4. 37.83
A7-0 1.48
A2-7 3.78
A7-24 6.40
A8-1. 8.33
771Y - 7.39
$255.61

REPORT O. K. Chas D Lewis Superintendent

EMPLOYEES IN DEPARTMENT

Printed on Time Sheet	Men 7	Women 73	Total 80
Laid off	Men 0	Women 0	Total 0
Absent	Men 0	Women 4	Total 4
	Men 7	Women 69	Total 76
Hired	Men 0	Women 0	Total 0
Present this Date	Men 7	Women 69	Total 76

Signed J. Mount Supervisor

Form 18. Departmental Labor Report. (Form reduced in size.)

DAILY LABOR REPORT CARPENTER Dept.

Name JOHN NELSON Clock No. 52

ROOM NO.	DESCRIPTION OF WORK	HRS.	O. T.	JOB NO
800	Alterations	7	--	7712
1314	Repair Desk	1	--	8001
O. K.	Foreman. Total,	8		

Form 19. Daily Labor Report Card.

By this system of Departmental Labor Reports a complete daily record of the distribution of the time of all employees is provided for the use of the Cost Clerk. Unless the building has comparatively few employees, these Daily Sheets, however, should not be used as payroll sheets, but some additional form of payroll timekeeping should be employed. The results of the two systems should then be balanced at least once a week. The value of this consists in the fact that there may be times when the office force will not have the Daily Labor Reports figured in time to use as the payroll. In other words, if these are not used as payroll sheets they can be accumulated for a week at a time before being figured.

Upon receipt of these Departmental Labor Reports, the Cost Clerk will enter the rates of pay and make the necessary extensions and additions to determine the amounts to be charged against each job or account number. These amounts are then posted to the proper columns of the Job Cost Sheet, Form No. 12.

SECTION V. CONTRACTS

The Labor and Material Accounting described in Sections III. and IV. will of course cover only labor of the building's own employees, and material used by the building's employees. Every building, however, uses both labor and material furnished by others. This material may be furnished either on contract or on a time and material basis, but for the purpose of this System of Cost Accounting all such expenditures are classed under the heading of Contracts, and no distribution is made of these Contracts into the items of

DAILY REPORT OF CARPENTRY DEPARTMENT

C

DATE Saturday Feby 19 1921

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 amt	Total Time	Room	JOB	JOB NUMBER
TIME OF EACH MAN ON EACH JOB			1½												188	1½		Repair Glue Press	a8-4
					½										62	½	800	Make 3 Keys	a1-20
					3½										438	3½	1912	Repair Washing Machine	a8-4
	1						4			4					1130	9	Basement	Closing up switch board	a4-0
									½						62	½	1st Floor	Repair Adams St Revolving Door	a1-20
			½					½							175	1	1741	Take down drop cloth	7777
	1		2	2½											693	5½	1833	Repair Table.	7741
	1			1½		4									817	6½	1724	Alterations as per plan	7675
								2½							313	2½	643	Repair Chair	7739
								1							175	1	1600	" "	7743
	1								3½						569	4½	1718	" Partition and Door	7736
																		— Laborers —	
												2			200	2	Roof.	Cleaning Roof and Gutters	a1-10
												1			100	1	1724	Alterations as per plan	7625
												1			100	1	Shop.	Cleaning up Shop.	a8-4
														$49.70					
amt	5.70		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00		4.00	$49.70						
	4		4	4	4	4	4	4	4	4		4				40	TOTAL TIME		
Absences, Changes, Etc.	Geo. A. Ramsay		A. Soderberg	H. Kemkeizin	J. Nordblom	J. Erickson	G. Helin	J.J. Kempelein	M. A. Hilin	M. A. Matson		Ed. Butet							

EMPLOYEES IN DEPARTMENT

Printed on Time Sheet	11
Laid Off	0
Absent	1
Hired	0
Present this Day	10

Report Correct Geo. A. Ramsay. Foreman

NOTE:—BELOW TO BE FILLED IN BY SUPERINTENDENT. EXPLAIN ALL OVERTIME, UNUSUAL, SPECIAL AND CHARGE WORK. EXPLAIN OR REPORT PROGRESS ON ALL JOBS REQUIRING OVER EIGHT HOURS' TIME.

Room	REMARKS
	All of the above Jobs were completed today except #7736 - #7625

REPORT O. K. Chas W. Lewis
Superintendent

Form 20

Labor and Material. A Purchase Order is issued for all such labor and material furnished by others. Upon receipt of the bill for this contract labor or material, the Cost Clerk makes out a Requisition for it, using the same Requisition, Form No. 18, used by the foremen in requisitioning material from the Stock-keeper. This Requisition does not go through the Stock-room, however, but is entered directly to the Job Cost Sheet, Form No. 12, of the proper account and then filed in the Job Envelope.

SECTION VI. POWER

Where power in the form of electricity or steam is purchased from Central Station, the Cost Accounting of it will be handled exactly the same as Contract Material, described above, except that it will be entered on the Job Cost Sheet, Form No. 12, under the separate heading of Power. The necessary Requisitions distributing the Power to the various accounts should also be made, in order to have complete documentary evidence in the Job Envelope. If the power is generated by the building's own Power Plants, the Power Plant should be treated as an outsider and bills from the Power Plant would then be handled in the same way as bills from Central Station.

If power cannot be distributed to the various operating accounts, the total cost of all power must naturally be entered against Operating Account No. 7, as explained in Section V. of Part I.

SECTION VII. JOB COST SHEETS

After the various items of Labor, Material, Contract, and Power have been entered to the Job Cost Sheets, these various amounts are totaled up as shown on Form No. 12. If the Job Cost Sheet is for any of the accounts under Groups B., H., I., or J., to the totals is then added the proper overhead. If the job is to be paid for, there should also be added whatever profit is to be charged on the job.

If the work represented by any Job Cost Sheet is not completed at the end of the month, sub-totals should be made the same as described above for the complete totals and these sub-totals should be entered as shown.

All Job Cost Sheets for accounts under Groups A. and H. will, of course, be closed out each month, as these represent the Routine Operating Accounts. At the end of each month the several totals of each Job Cost Sheet of Groups A. and H. are posted to the Labor, Material, Contract, and Power Distribution Sheet, Form No. 21. Sub-totals are then made on this Distribution Sheet for each of the principal accounts under Group A., and also a total for each of the Groups of Accounts.

All Job Cost Sheets, other than those for the Group A. and H. Accounts, will represent special jobs, either of alterations or jobbing for tenants, and will thus come under Groups B., I. and J. Before these accounts can be posted to the Distribution Sheet they must be collected together so as to give Group Totals by means of a Work Ledger, a typical sheet of which is shown on Form No. 22.

SECTION VIII. WORK LEDGER

The columns of these Work Ledger Sheets consist of the following groups:

First—Two debit columns on the left hand side, headed Work Billed and Work Incomplete.

Second—Columns for the name of the tenant for whom the work is done, and the Job Cost Sheet Number.

Third—A Group of credit accounts, similar to those on the Distribution Sheet, Form No. 21, with the addition of 3 columns headed Work Incomplete, General Expense, and Profit.

One of these sheets will be used each month for each of the Groups B., I., and J.

In the case of Job Cost Sheets that are completed and billed during the current month, the total amount billed to the customer will be entered under the debit column headed Work Billed, then will be listed the tenant's name and job number. After which the various totals on the Job Cost Sheet will be distributed under the proper credit columns. In this case nothing will be entered under the debit column Work Incomplete or under the credit column also called Work Incomplete.

In the case of a Job Cost Sheet not completed or billed during the current month, the sub-totals representing the amounts charged to this job for the current month will be entered as follows: The total amount so far chargeable against the tenant will be entered in the debit column Work Incomplete, then the name of the tenant and the job number, following which will be a distribution of the totals to the various credit columns. Nothing, however, will be entered under the credit column Work Incomplete.

If the job thus incomplete during the current month is completed and billed during the following month, the following entries will then be made. The total amount billed to the tenant in the debit column Work Billed, then the name and job number, and the distribution of the accumulated totals to the various credit accounts. Finally the full amount of the job previously charged as Incomplete will be entered in the credit column Work Incomplete. This means, that in the first month the Ledger Account, Work Incomplete was debited with the amount of the job charged up to that time. While in the second month the same amount will be credited to the Ledger Account, Work Incomplete.

In case a Job Cost Sheet is incomplete for several months, the amounts added to the Job Cost Sheet for each succeeding month will be entered as Work Incomplete, as described above for the first month, when the job was incomplete. That is, each month only the amount added during the month and not the accumulated totals will be entered. When the job is finally billed, the amount of the accumulated totals prior to the current month will then be entered in the credit column, Work Incomplete.

When all the jobs for the month, either complete or incomplete, have been entered to the proper sheet of the Work Ledger, the various columns are then totaled, and the totals of the credit columns, except General Expense, Profit and Work Incomplete, transferred to the Distribution Sheet.

Work Ledger

Work Billed Dr.	Work Incomplete Dr.	NAME	Job. No.	Carpentry		Painting	
				Labor	Material	Labor	Material
.....	$ 323.15	Northwestern Co.....	7712	$ 106.43	$ 5.30	$ 96.70	$ 5.66
.....	375.80	Commonwealth Edison Co.....	7713	147.20	1.15	18.40	1.06
.....	5,813.70	Public Service Co.....	7714	921.50	138.45	124.20	14.28
.....	2,021.81	Middle West Utilities Co.....	7715	623.50	210.41	30.24	5.20
$ 396.75	.....	Lewis Construction Co.....	.....	300.00	.....	.....	.....
369.67	.....	J. J. Spansus Corp.....	7654	123.10	63.66	.....	4.60
132.63	.....	Glen Mount & Co.....	7655	87.54	9.40	1.60	.15
587.46	.....	John G. Schroder Eng. Co.....	7656	198.50	21.10	.....	22.45
1,222.36	.....	Bainbridge Sales Co.....	7657	226.26	38.27	24.92	14.40
2,312.12	8,534.46	Total.....	.....	2,734.03	487.74	296.06	67.80

Form 22. Left hand page.

Work Ledger

Electrical		Engineering		Day Janitor		Night Janitor		Elevator Labor	Office Mat.	Contracts	General Expense Billed	Profit	Work Inc.
Labor	Material	Labor	Material	Labor	Material	Labor	Material						
$ 24.12	$ 6.14	.....	.....	.....	.....	.....	.....	.....	.....	.....	$ 36.65	$ 42.15	.....
11.15	1.42	.....	$16.28	$87.50	.....	.....	.....	.....	.....	.....	42.63	49.01	.....
1359.65	1104.25	147.55	.....	115.25	4.40	170.14	.....	.....	$6.52	289.80	659.40	758.31	.....
622.10	14.85	.....	.....	14.50	1.82	6.16	.....	.....	.....	.....	229.32	263.71	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45.00	51.75	.....
8.21	14.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	32.04	36.86	87.10
1.40	.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	15.04	17.30	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	202.16	66.63	76.62	.....
437.81	60.73	.....	.....	43.60	2.20	4.52	.....	.....	.....	57.44	136.52	156.99	18.70
2464.44	1201.69	147.55	16.28	260.85	8.42	180.82	.....	.....	6.52	549.40	1263.23	1452.70	105.80

Form 22. Right hand page. (Both pages much reduced in size.)

SECTION IX. DISTRIBUTION SHEET

When all the Job Cost Sheets have been entered to the Distribution Sheet, either directly or by means of the Work Ledger, sub-totals are then made for the Total Operations, Total Rental Expense, and the Total Service Expense. If there have been any expenditures for the month chargeable to any of the asset accounts, such as permanent improvements, they should be entered in line L. 14. These having been entered, a grand total is made indicating the total amounts expended through the Operating Departments for the month.

This grand total of expenditures for the month can be made to agree with the vouchers for the month, by taking into account the quantity of material on hand and labor unpaid. That is, the amount of the material on hand as shown by the inventory at the beginning of the month should be entered under the total material column in the line Labor and Inventory Brought Forward, and subtracted. The amount of material on hand at the end of the month will then be entered on the line Labor and Inventory Carried Forward, and added.

In like manner, if employees are not paid by the half month, or monthly period, but on a weekly or bi-weekly basis, there will be certain portions of their time which they will work in the current month but for which the pay roll voucher will not be issued until in the succeeding month. The amount of last month's time paid in this month's voucher would be entered under the Total Labor column on the line Labor and Inventory Brought Forward, and subtracted. The amount of labor worked this month, but which will not be paid for until next month should be entered on the line Labor and Inventory Carried Forward, and added. These final balances will then be the total amounts of cash paid out as evidenced by the vouchers.

SECTION X. GENERAL LEDGER ACCOUNTS

In the General Ledger there will be two classes of accounts:

First—General Ledger Expense and Income Accounts.

Second—General Ledger Controlling Accounts.

Expense Accounts will be opened in the General Ledger for Labor, Material, Contracts, and Power for each of the main accounts of Group A. (not the sub-accounts) Groups B., H., I. and J. To these accounts will be debited the totals for Labor, Material, Contract, and Power as shown on the Distribution Sheet.

Credit accounts will be opened in the Ledger for General Expense and Profit, and to them will be credited the total of these accounts as shown on the Work Ledger Sheets.

Controlling Accounts will be opened for the grand total of Labor, Material, Contracts, and Power, also for Work Billed (Accounts Receivable), and Work Incomplete. Inasmuch as the purpose of Controlling Accounts is to indicate the current status of affairs—such for instance, as the amount of material on hand—they are an exception to the general principle set forth in Part I. and both debit and credit items may be entered to them.

To the Controlling Accounts for Labor, Material, Contracts, and Power will be credited the grand totals of these columns from the Distribution Sheet. The debit side of these accounts would come from the Voucher Register. The Controlling Account, Work Billed, will be debited with the total of this column on the Work Ledger. The credit side of this column would come from the Cash Account. The Controlling Account, Work Incomplete, will be both debited and credited from the Work Ledger.

The balance of these Controlling Accounts will have the following significances:

LABOR—Balance will indicate the amount of labor accrued.

MATERIAL—Balance will represent value of stock on hand.

CONTRACTS AND POWER—These two accounts should balance off each month, as there is no element of stock or unearned labor in Contracts and Power.

WORK BILLED—This account really represents Accounts Receivable, and may be so called if desired. This balance, of course, represents the amount of bills unpaid.

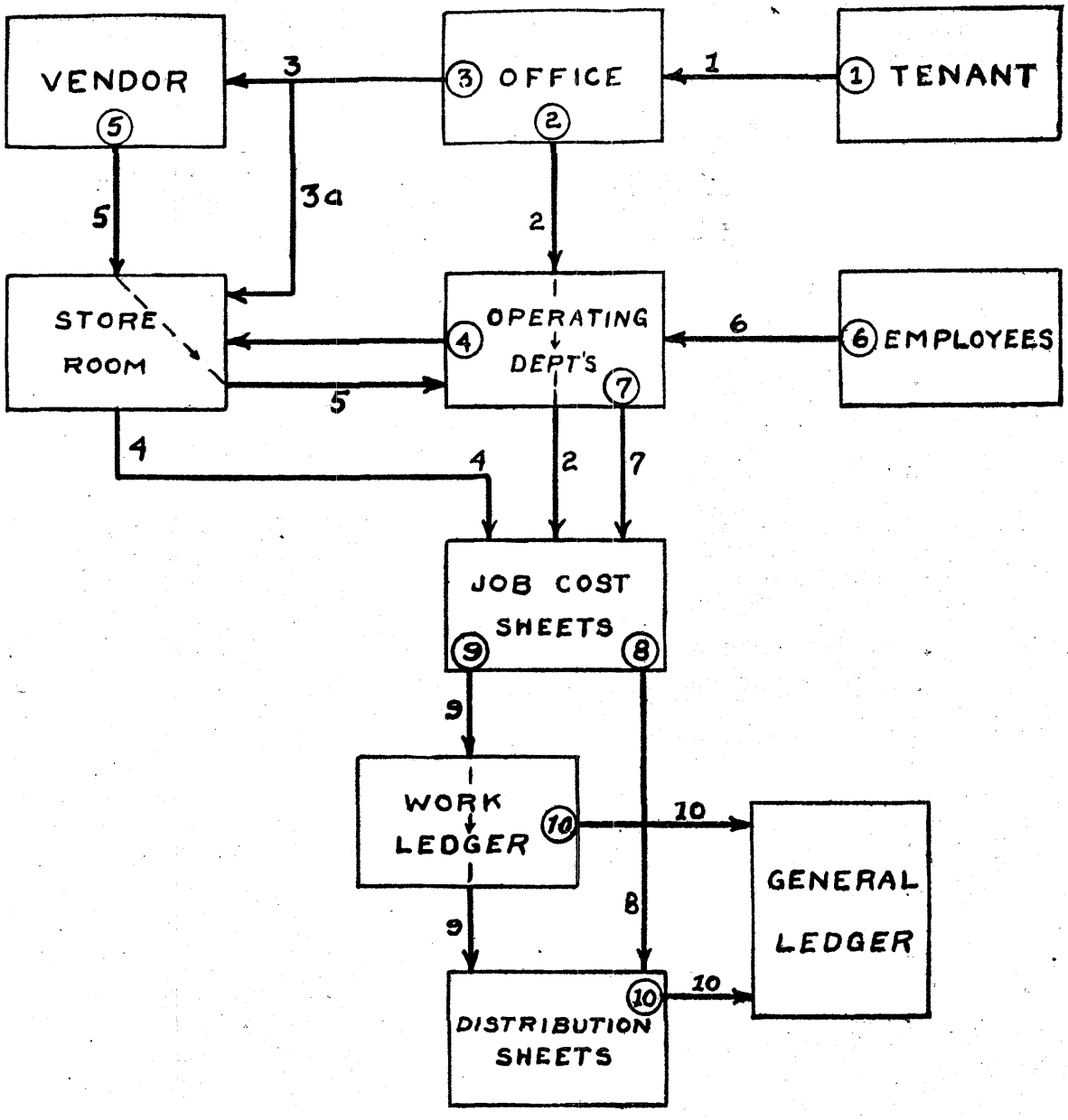
WORK INCOMPLETE—Balance represents the amount of work in progress not yet billed.

Inasmuch as this Report is concerned entirely with Cost Accounting, it does not touch upon any ledger accounts concerned principally with the income items, but which might in a complete system interconnect with the expense accounts covered in this Report. In other words, this Report only deals with such Ledger Accounts as are essential to the Cost Accounting portion of bookkeeping, and these accounts are described from the Cost Accounting standpoint, only.

This Report also describes the entries to these various Ledger Accounts as being taken direct from the Distribution Sheet or Work Ledger. As a matter of fact, it will probably be necessary, in a complete system of accounting, to journalize these items and post to the Ledger from such Journal Entries. The purpose of the Report is simply to indicate the original source of these items and the final entry of them.

This Report does not call for ledger acccounts for the various subaccounts of Group A. because we have not felt it desirable to cumber the ledger with a large number of separate accounts. Statements of these accounts may be obtained from the Comparative Record Sheets explained in Section VI, of Part I. (Page 17).

COST ACCOUNTING DIAGRAM



Numbers in circles indicate point of origin.

1. Tenant's Order.
2. Work Order.
3. Purchase Order.
3a. Triplicate Purchase Order.
4. Material Requisition.
5. Material.
6. Employees' Labor Card.
7. Departmental Labor Report.
8. Groups A. and H. Accounts.
9 Groups B., I., and J., Work Orders.
10. Totals.