EFFECTIVENESS OF MIS OPERATIONS IN PROJECT MONITORING AND INSPECTION

A CASE STUDY OF FEDERAL HOUSING AUTHORITY ABUJA

BY

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PGD / MCS / 98 / 99 / 789

PROJECT SUBMITTED TO THE DEPARTMENT OF MATHS AND COMPUTER SCIENCE SCHOOL OF SCIENCE AND SCIENCE EDUCATION

IN PARTIAL FULFILMENT FOR THE AWARD OF POST – GRADUATE DIPLOMA IN COMPUTER SCIENCE

FEDERAL UNIVERSITY OF TECHNOLOGY
MINNA,
NIGER STATE

SEPTEMBER 2000

CERTIFICATION

This is to certify that this project had been read and approved as meeting the requirement of the department of Mathematics / Computer Science, Federal University of Technology Minna.

Sign _____ _____

Dr. Yomi Aiyesimi Date

Supervisor

Sign_____ _____

Dr. S.A Reju Date

Head of Department

Sign _____ _____

External Supervisor Date

DEDICATION

I dedicated this project work to my Lord Jesus Christ and my aunty Josephine Mbara.

ACKNOWLEDGEMENT

I wish to acknowledge the presence of God Almighty for the wisdom and knowledge he imparted in me while writing this work. I thank him for His divine direction.

I would like to thank my able supervisor **Dr. *Yomi Aiyesimi*** for the useful criticisms he gave in this work. I would not fail to acknowledge the contribution of my Head of Department ***Dr. Reju*** and the rest of the lecturers in Maths/Computer department for their able support. I give my sincere gratitude to ***Mr. Uba*** of Federal Housing Authority Abuja for wonderful contribution and support he gave me in the course of this work. Finally I am grateful to my family, friends and well wishers for their contribution, one way or the other in making this project a success.

May God bless them all, Amen.

1. To provide the importance of information system in effective project monitoring,

which include to provide information in the right form at the right time and location to those involve in the supervision work and for management decision so that efficient buildings and structures result with a minimum cost to the total construction process.

2. To achieve an information retrieval system for the Authority which include user

orientation, serviceability, timeliness, result representation, user–convenience, coverage and motivation aspects.

3. To stress the importance of combining the Computer and manual procedures for optimizing the quality and standard of work done on site.
4. To achieve a maximum and accurate record of work progress on site.
5. For easy accessibility to site information by management for decision making.

1.3 DEFINITION OF TERMS

Database : Computerized stores of retrievable information. It is also a sheet steel cabinet protecting a set of hard disks.

DBMS: Is a set of programs which enable one to find the information on a harddisk.

Data processing: Computer – controlled multiplications, Additions, Divisions, subtractions, classification and other logical operations on stored numbers or names.

File directory: A list of the files on a floppy disk. It can be displayed on the **VDU** if the user presses a few keys and can almost as easily be printed out.
A file is any text, program or other information that is held in auxiliary storage and is therefore permanently available as long as the Computer is working.

System analysis: Is the examination of the organization of a business to ensure that it provides the information needed to work well and that the information also reaches the computer for processing.

Computer program : Are instructions to the ***CPU*** of a computer which have to be loaded into it either by laborious key board work or more easily from a disk or tape.

Program development: is the work of programmers and system analyst. Everything done on a program from the earliest writing to the final and often longest task of debugging and testing.

FLOW CHART: Is a diagram to show what happens and in what sequence, it enforces the logical thought that is needed before the writing of the program begins.

Remote work: Working at a terminal connected by telephone or dedicated line to the normal work place.

Databus: Wires for sending data through a computer which connect the CPU to its memory or peripherals as instructed by the user's keying.

Documentation of a software: Description of a program in understandable language stating what it does and how it does it.

1.4 OVERVIEW OF F H A

The Federal Housing Authority was established under degree NO 40 of 1973 to implement government's policies and plans on housing development in Nigeria.

- Prepare and submit to government, proposals for national housing programmes from time to time.
- Make recommendations to government on urban and Regional planning transportation, communications, electric power, sewage and water

supply development relevant to the successful execution of housing programmes approved by the government.

- Implementing housing programmes approved by the government.

CORPORATE OBJECTIVE

It develops and manage real estate on commercial and profitable basis in all states of federation.

It provides low income houses in all State of the Federation from funds allocated by the Federal Government.

It operates in an effective cost conscious and goal oriented manner.

In all human societies, provision of housing is considered as one of the necessities of life, thus one of the worst characteristic features of destitution and neglect is homeless. Human development in all ramification essentially requires descent shelter. Also one of the yardstick measuring of a successful life in most societies is acquisition of one's own house. One need a house to start a family to be creative. The provision and acquisition of decent shelter is one of the challenges of life.

Some past FHA project

Abuja FCT

a). Karu housing Estate

b). Kubwa phase I housing Estate

c) Kubwa phase ii " "

d) Kubwa phase iii " "

e) Kubwa phase iv " "

f) Maitama Estate

g) Asokoro Housing Estate

h) Kado Housing Estate I & II

i) Gwarimpa II Housing Estate.

Lagos

a) Festac town

b) Ipaja Estate

c) Abesan II Estate

Niger

Bosso Housing Estate, Minna.

Benue

North Bank Estate Makurdi.

Kaduna

Gonin – Gora Estate Kaduna

Kano

Sharada Housing Estate

Sokoto

Runjin sambo Estate

Rivers

a) Trans – Amadi Estate PortHarcount

b) Rumueme Estate PortHarcount

Adamawa

Yola Housing Estate.

F H A is mode up of five department;

1) project implementation

2) finance & supplies

3) Estate services

4) Management services

5) Office of the Chief Executive

The organogram is in the overleaf page.

CHAPTER TWO

LITERATURE REVIEW

2.1 Gwarimpa II Housing project

Background

The sudden and mass influx of public servants into Abuja has worsened the housing stock and supply couldn't meet up with the housing demand. The limited housing stock available are either too expensive to rent or disposal rates are ridiculously high.

The Gwarimpa II Estate is therefore F H A's response to the demand for decent and affordable accomodation in the Federal Capital. Apart from achieving this stated objective, the Estate on completion shall help stabilize rental values in the new Capital City.

Location size and Topography

1. The Gwarimpa II housing project is located in phase II area of the Abuja master plan, which is made up of a whole planning district. It is located in a prime and vantage area with splendid view of the inner city of Abuja.

The estate covers an approximate area of 850 heatares. Its Topography is fairly undulating and well drained with seasonal streams criss–crossing the Estate area providing natural drainage channels. Some rock out crops exist within the Estate area.

The planning concept adopted is that of simple neighbourhood clusters known as community area each accomodating about three to two house type. A total of 4800 housing units were envisaged to be constructed on completion of the estate with seven diff house type

On commencement of work, sites were cleared, followed by appointment of infrastructural and building contractors. The designs, working drawings and the bill of quantities for the project are prepared by the staff of the Authority. The supervision is also carried out in – house.

A total of 4802 housing units are under construction. About three hundred, three bedroom bungalows are practically completed while the remaining houses of various house types are at different stages of completion.

The infrastructural work including water supply and distribution, Roads and drainages, HT/LT electrical power distribution Network and 2x15 MVA 33/IIKV injection sub – station are all in their various stages of completion.

The diff. House types under construction on site,

S/NO	DESCRIPTION	HOUSE TYPE
1	3- Bedroom bunglow	Bakassi
2	3- Bedroom flat in single storey of 4 flat	Bonny A
3	3 – Bedroom flat in single storey of 6 flats.	BonnyB Badagry
4	3 – Bedroom Twin Duplex	
5	4- Bedroom Twin Duplex	Masfa
6	4 – Bedroom Detached Duplex	Maiwa
7	5 - Bedroom Detached Duplex	Abriba

2.2 Project Monitoring and Inspection

Is the process of administering the field operations of a construction project by the owner / designer or their representatives. The owner / designers

representative is on – site, full-time project representative to whom has been delegated the authority and responibity to administer.

The architect / Engineer who was responsible for the determination of site conditions and for the preparation of the plans and specification are retained during the construction phase to provide field administration and quality control for the owner, the safety of the public and the professional reputation of both the design firm and the contractor.

Although a design firm acting as the agent of the owner during the construction phase of a project does not quarantee the work of the contractor, nor does such agent in any way relieve the contractor of any responsibilities under the terms of the construction contract. The design firm, through its field inspection forces must endeavour to guard the owner against defects and deficiencies in the work.

When the plans and specification are not being properly followed from the designer's judgement and the designer was not able to obtain compliance by the contractor, the owner is notified so that appropriate measures can be taken.

Inspection is performed during the progress of the work. Inspection after completion defeats the purpose of providing quality control and assurance on the jobs, as many potential difficulties must be detected during construction, otherwise they may be permanently covered. The result would be a latent defect that may not be discovered. For years, then, when it is discovered it may be too late, as it may have been instrumental in contributing to a structural failure or other disaster.

Monitoring of project entails

1. control of progress in project
2. control of quality in construction project

Control of progress

Control is complementary to planning, therefore it must be carried out to make planning effective. Without control, planning loses much of its values it must be applied continuously to update the plans and to enable reconsideration of work ahead in the light of what has already taken place.

Control involves comparing at regular intervals the actual achievement with the plans and then taking any necessary corrective action to bring things back on schedule. During the construction period, advancement of the work is monitored by measuring and reporting the field progress at regular intervals. These data are analyzed and time control measures are taken as appropriate to keep the work progressing on schedule.

Progress measurement for time – control purposes is an appropriate and effective control process and is based on determining the time status of each individual job activity. Progress is normally measured by noting those activities that have been completed and estimating the times required to complete those in the process.

Monthly or weekly meetings is a valuable tool in the control of progress. Work which is not proceeding as planned will receive particular attention and explanations will be required where sufficient progress is not being achieved.

Methods of recording progress

Progress can be recorded on pictorial diagrams by colouring plans and elevations when certain sections of work are completed. This method is often

used on housing project and it gives a quick visual impression of overall progress.

Control of quality

The actual quality of construction depends largely upon the control of the construction itself, thus involving the contractor to a great extent.

The physical act of checking a work is called quality control when a contractor does it and quality assurance when the owner does it.

Whether the subjject be called "quality control" or "quality assurance" the function performed is essentially construction inspection and testing of materials and workmanship to see that the work meets the requirenents of the drawings and specifications.

Quality assurance by the designer / owner includes a continous on site inspection during all structural construction of a building by one or more competent, technically qualified and experienced inspectors. It is the responsibility of the inspectors to see that all details of the Engineer's / Architect's design drawings are constructed strictly with accordance to their respective requirement. In addition, each inspector must see that all the workmanship and construction practices are equal to or in excess of the standards called for in the construction contract documents.

Quality assurance may be by visual inspection, tests, certification reports and similar produres.

The items that control quality include the following:

Location of the project

Magnitude of each phase of construction

Availability of local materials

Contemplated life of the construction

Climatic and operating conditions

Cost limitations

The desires of the Architect or Engineer

File and Records

It is the Responsibility of the resident project representative to determine what the specific needs of the employer are with regard to the type of construction records that must be established and maintained for a specific project.

A project representative or inspector maintains a daily diary in which notes and records of daily activities and conversations are kept. Included in such a diary should be abstracts of all oral commitments made to or by the contractor, field problem encountered during construction, how such problems were resolved, notices issued to the contractor. The inspector maintains also a daily construction report which decribes the construction progress.

unpredictable, long-range and related to the future, not just past and / or current activities.

A company's MIS must be able to supply information to upper management as needed in periodic reports, event – initiated reports, and on – demand reports.

The information must show all the company's operations and departments are related to and affected by one another. The decision made at this level are unstructured. An unstructured decision is most complex type of decisions that managers are faced with.

The Role of MIS in a Business

MIS must provide managers with information (reports) to help them perform activities that directly relate to their specific areas of responsibilities.

MIS must provide manger with information about other functional areas of the business – finance, project implementation, marketing so that they can coordinate their departmental activities with the activities in these areas.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

Prior to system analysis, system investigation is carried out to determine whether the existing system is satisfying the goals and objectives of the organization. The first step in performing system investigation is to form an investigation team which is charged with the responsibility of gathering and analysing data, preparing a report on the Justification of system analysis and design and presenting the result to top – level managers who will make the final decision concerning the proposed analysis and design.

3.1 Analysis of the existing system (FHA)

Analysis of a system is the procedural study of its operation with an attempt to discover what its basic problem are. It is also the method of determining how best to use computers with other resources to perform tasks which meet the information need of an organization.To make a proper assessment of the existing system, facts must be gathered and examined.

To gather this facts, the first step is the assembling a team of individuals to study the existing system. They are not only responsible for investigating the condition of the existing system but also the responsibility of performing systems design and aiding in implementation of the new system. On assembling the

study team, a list of specific objective and activities and a schedule for obtaining the objectives and completing the specific activities were developed.

The present system must be criticized against the principles of procedure after which the strength and weakness of the system would be apparent .

The next stage is the data collection, whose purpose is to seek additional information about the problem or needs under investigation. In this process, emphasis is given to the strength and weakness of the existing data and information processing system. Data collection requires that ltwo steps be performed sequentially. The first step is to identify and locate the various sources of data. There are internal sources and external sources.

The internal source are – (1) organization charts (2) forms and documents (3) procedure manuals and written policies (4) Data processing documentation manuals (5) Top, middle and low –level managers (6) Other employees of the organization (7) System analyst and computer programmers (8) Data processing manager (9) The users

While The

External source are: (1) contractors (2) Clients (3) Government documents (4) Textbooks (5) Newspapers (6) Operational journals related to the organization

(7) Data processing journals (8) Similar Report of other organisation (9) External consultants.

The second step is the actual collection of the data. It requires a number of tools such as interviews, direct observation and development of questionnaires.

For the interview, the questions are not written in advance. The best questions are asked from experience to uncover some of the inherent problems and weakness of the existing system.

There is direct observation where one can determine which forms and procedures are adequate and which ones are inadequate and need improvement.

With direct observation, great skill is not really needed. The observer simply sees what is really happening and is not influenced by his or her own feelings.

Activities were simulated to see how the existing system reacts thus Data flow bottle necks were created to see how the existing system respond to these situations. The data collected from the data collection stage is usually not adequate to make a determination of the effective ness and efficiency of the existing data processing system. The data is usually manipulated into a form that is usable by the members of the study team. The manipulation is called data analysis.

The common tecniques used in this project are;

System flow chart

Program flow chart

Structure charts.

The system analysis concludes with a formal report on the status of the existing system. It contains both the strengths and weaknesses of the system. Particular attention is placed on those areas that could use improvement.

3.1.1 Existing project monitoring system in Gwarimpa II project

In Gwarimpa II project, monitoring is done according to the position of an individual inspector on site. The team manager or project manager is the Chief inspector or the Resident project representative who is in charge of the whole project. He has subordinates (inspectors) who carry out his instructions. The main work is to inspect contractors' work and make corrections where need be and report which is mostly either verbal or written form is passed to the team manager, it passes through some other top inspectors known as the team leader and the group leader.

In Gwarimpa II project, Due to the complexity and Bulkiness of the site, is divided into seven sectors for easy monitoring and management with each sector or team headed by a team leader. Each team is further divided into groups which are overseen by group leaders. The team manager takes complete control of the entire project site. When observations made on site can not be handled by the group or team leader of a team the observation is submitted as a report (written form) to the team manager who now issue instructions on how to go about them.

Extra work made on site by contractors are documented in site files for record purposes or future reference. Change order meant for the contractors are being issued to them through their immediate inspectors to carry out. Copies of the change orders are documented by both contractors and the inspectors.

Monthly / weekly progress report and Quality control charts are made. This reports are in chart form by the inspectors and are later summarized by the team leaders who pass them on to the team manager for documentation or for management use.

Intended and unintended errors are discovered only when changes on drawings and specifications issued to the contractors are documented and date of issuance recorded.

We have various professionals on site – the Engineers (Electrical, mechanical and structural), Architects, Builders and Quantity surveyors. They are assigned to their various professional jobs as inspectors. They work together as a project team.

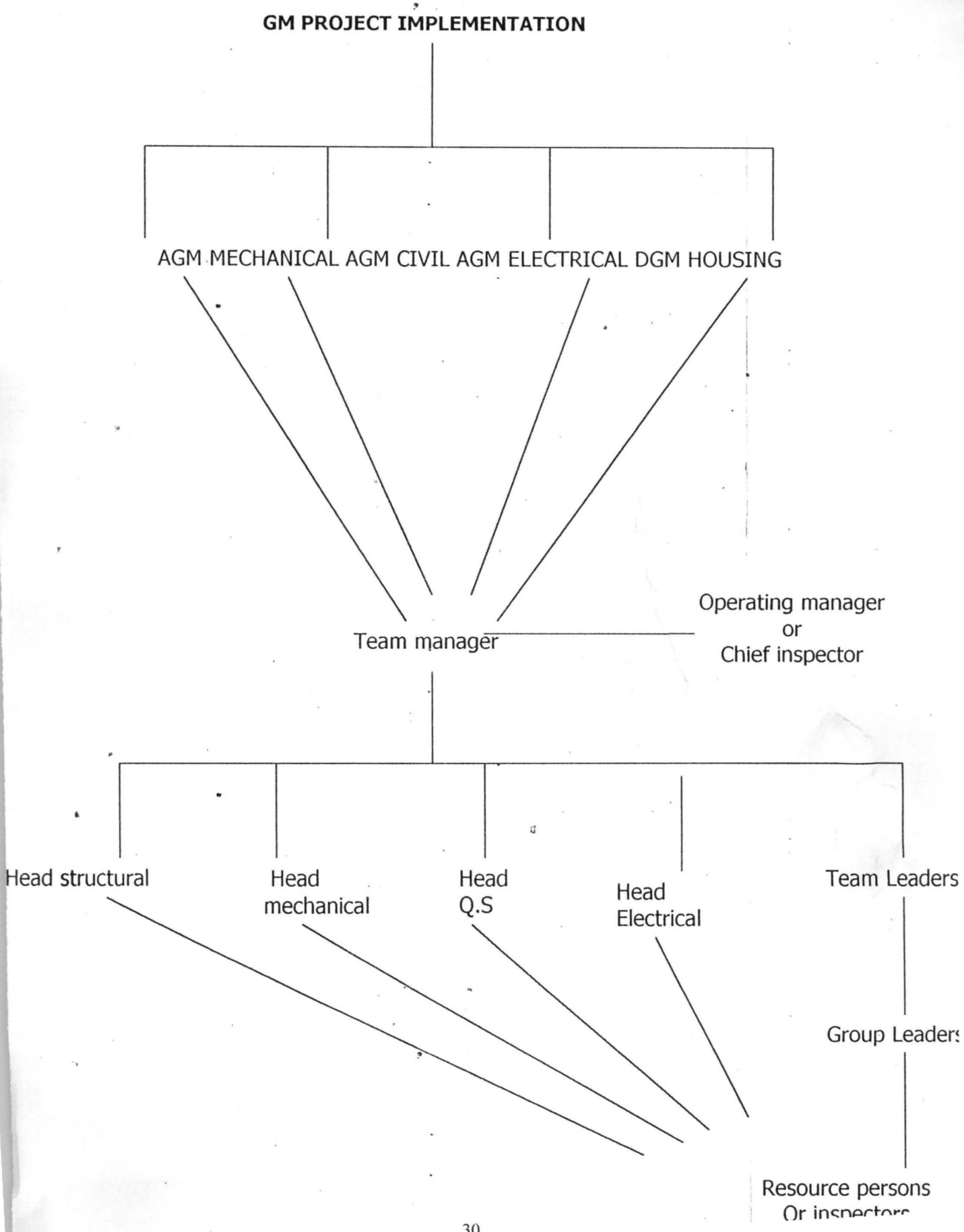
When structural reports on some houses are carried out, the report is first taken to the team manager who then forwards it to the head office for management decision. most times staff personnels are send to the site to collect recorded information pertaining to the site.

Status report of site work are carried out in this manner when on demand. Abandoned or slow site work are noted down and documented by the inspectors.

Completed work are inspected and made ready for taking over from the contractors to give to their various buyers. For progress payment purposes, the contractor on applying for his payment, make request for valuation tothe team manager who refers it to the appropriate team leader. The Team leader obtains contractor's payment file and make an Identical copy for Gwarimpa site operations. He instructs his inspectors to visit the site area and approve on the stage of work properly done on site. This approval is made on the clearance form. He then forwards the site operational file to the Head Q.S for valuation. The head Q.S assigns the job to a scheduled Q.S who prepares the payment certificate and signs the breakdown. On endorsement, the Head Q.S. returns the completed valuation to the team manager via the team leader who then completes a confirmation of work form.

The team leader forwards both operational site and payment file with the completed documents to the team manager for further processing.

ORGANIZATION STRUCTURE OF PROJECT SITE STAFF



Resources Persons or Inspectors' Duties.

(1) They study the plans and specifications as they apply to the work to be inspected.

(2) If any material or portion of the work does not conform to the requirements, the inspector notifies the contractor, explain why it does not conform and record it in the daily diary.

(3) He includes in his daily report, a recording of the day's happenings, the contractor's activity on the work being inspected, instructions that are given the contractor and any agreement made.

(4) He makes prompt and timely inspections and test by :

(a) Checking materials as soon after they are delivered as possible.

(b) Inspecting work as it progresses

(5) He reports to the group leader or team leader any tolerance governing the contractor's work that is found to be unrealistic.

(6) Unacceptable work that are recognized in its early stages, are reported to the contractor in writing before it develops into an expensive and time-consuming operation.

(7) He calls to the attention of the contractor any dangerous condition that is observed on the job and also notes it in the site diary.

(8) He approves materials and workmanship that meet the contract requirement and gives approval for next stage of work.

Team Manager's Responsibility

1. He coordinates and provides general direction of work and progress.
2. He assists in resolution of construction problems.
3. The team manager evaluate contractor's claims.
4. He maintains log of change orders and contractor submittals.
5. He develops and administer a quality control program by

a. Demanding proofs of compliance

b. Defining required tests

c. Maintaining quality control reporting system and records.

6. He participate in field management meetings
7. He provides negotiation assistance on contractor claims
8. He maintains daily log and construction records
9. He supervises inspection forces and site office staff.

Site Records and Files

Construction Records

1. **Progress of the work:** Contains a description of the work commenced, new work started, status of work in progress, manpower. If no work was performed at all, a daily report should be filed, stating " no work". The report is compiled from various inspector's daily record of work progress.

2. **Test of materials:** A record of all material samples sent out to the laboratory for testing is kept as well as the tests performed on site.

DUPLICATE

FEDERAL HOUSING AUTHORITY
SITE INSTRUCTION

PROJECT GUARIMPA 2 ESTATE

LOCATION ABUJA

CONSULTANT FHA

CONTRACT NO _____

CONTRACTOR _____

INSTRUCTION:

SKETCH;

DESCRIPTION;

MATERIALS:

COPY

* CONTRACTOR
* SITE FILE
* CONTRACT FILE
* OFFICER

OFFICER: _____

DESIGNATION: _____

APPROVED BY: _____

SIGNATURE _____

DATE _____

ORIGINAL

FEDERAL HOUSING AUTHORITY
SITE DIARY

PROJECT _____

LOCATION _____

CONSULTANT _____

CONTRACT NO _____

CONTRACTOR _____

COMMENTS :

COPY

* CONTRACTOR
* SITE FILE
* CONTRACT FILE
* VISITOR

VISITING OFFICER: _____

ADDRESS: _____

SIGNATURE: _____

DATE _____

SUMMARY OF COMPLETION STATUS 4A

S/NO	HOUSE TYPE	TOTAL NO OF UNITS	20 - 29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	REMAR
1	MASFA	28	-	-	-	14	-	4	-	10	10 H/
2	BADAGRY	146 ~~26~~	-	46	38	4	2	40	-	16	14 H/
3	BAKASSI	106	-	-	-	2	33	-	-	71	40 H/
	TOTAL	**274**	**-**	**46**	**38**	**20**	**35**	**44**	**-**	**97**	**64 H/**

SUMMARY OF COMPLETION STATUS 4B

S/NO	HOUSE TYPE	TOTAL NO OF UNITS	20 - 29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	REMAR
1	MASFA	152	42	-	34	32	-	4	16	24	
2	BADAGRY	76 ~~84~~	6	-	8	12	10 ~~16~~	2	18 ~~18~~	20 ~~-~~	16 H/
3	SPECIAL UNITS	36	36	-	-	-	-	-	-	-	
	TOTAL	**264**	**84**	**-**	**42**	**44**	**14**	**6**	**30**	**44**	**16 H/**

FEDERAL HOUSING AUTHORITY, ABUJA.

GWARINPA II PROJECT

QUALITY CONTROL CHART FOR (BUILDING)

REPORT NO:________________________ LOCATION________________ DATE __________

NAME OF CONTRACTOR:____ VALUE OF WORK TO DATE________________

S/N	NAME OF CONTRACTOR	HOUSE TYPE	NO OF UNIT	VALUE OF CONTRACT	No. OF BLOCKS	QUALITY REPORT							
							STAGE OF WORK	DEFECTS	NATURE OF DEFECTS	REMEDY	QUALITY GRADE	REMARK	NAME & SIGNATURE
						Architectural							
						Structural							
						Electrical							
						Mechanical							
						Architectural							
						Structural							
						Electrical							
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						Mechanical							
						Architectural							
						Structural							
						Electrical							
						Mechanical							

____
Coordinator's Name & Sign

LEGEND
A - Very Good
B - Good
C - Average
D - Poor

____
Supervisor's Name & Sign

____
Approval by General Manager (P)

____
Group Leader's Name & Sign.

FEDERAL HOUSING AUTHORITY, ABUJA.

GWARINPA II PROJECT

PROGRESS REPORT CHART (BUILDING)

REPORT NO: ____________________ LOCATION: ____________________ DATE: __________

NAME OF CONTRACTOR ____________________ VALUE OF WORK TO DATE ____________________

S/No.	NAME OF CONTRACTOR	HOUSE TYPE	NO. OF UNITS	VALUE OF CONTRACT	CERTIFIED TO DATE	BLOCK% COMPLETION													
						STAGE	BK. 1	BK. 2	BK. 3	BK. 4	BK. 5	BK. 6	BK. 7	BK. 8	BK. 9	BK. 10	% COMPL	REMARK	SUPERVISOR'S NAME & SIGN
						A													
						B													
						C													
						D													
						E													
						F													
						A													
						B													
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Supervisor's Name & Signature

____

Team Leader's Name & Signature

Legend

A Sub Structure
B Superstructure up to 1st floor slab
C Superstructure up to 2nd floor slab
D 2nd floor block work to head course
E Roofing
F Finishing

____

Project Manager's Name & **Signature**

3. **Dairy or log:** A daily dairy is maintained by each member of the field staff.

4. **Log of submittals:** All materials being transmitted to the authority via the team manager are logged in and out.

5. **Construction progress payment request**

6. **Extrawork and change order report**

7. **Quality control report.**

Site Files

All site files are kept up to date and maintained for ready reference at the job site. Files are maintained by team manager's clerk or Admin staff who retains some and forward others to the head office for retention.

The site office files include the following:

Correspondence: Copies of all correspondence concerning the project that are sent to the team manager are maintained.

Job drawings and specifications: Drawings of clarification or changes on drawings that contain supplemental information are filed at the site office, in addition to contract drawings.

Requisitions: Copies of all approved requisitions for payment are kept for site reference and as a guide

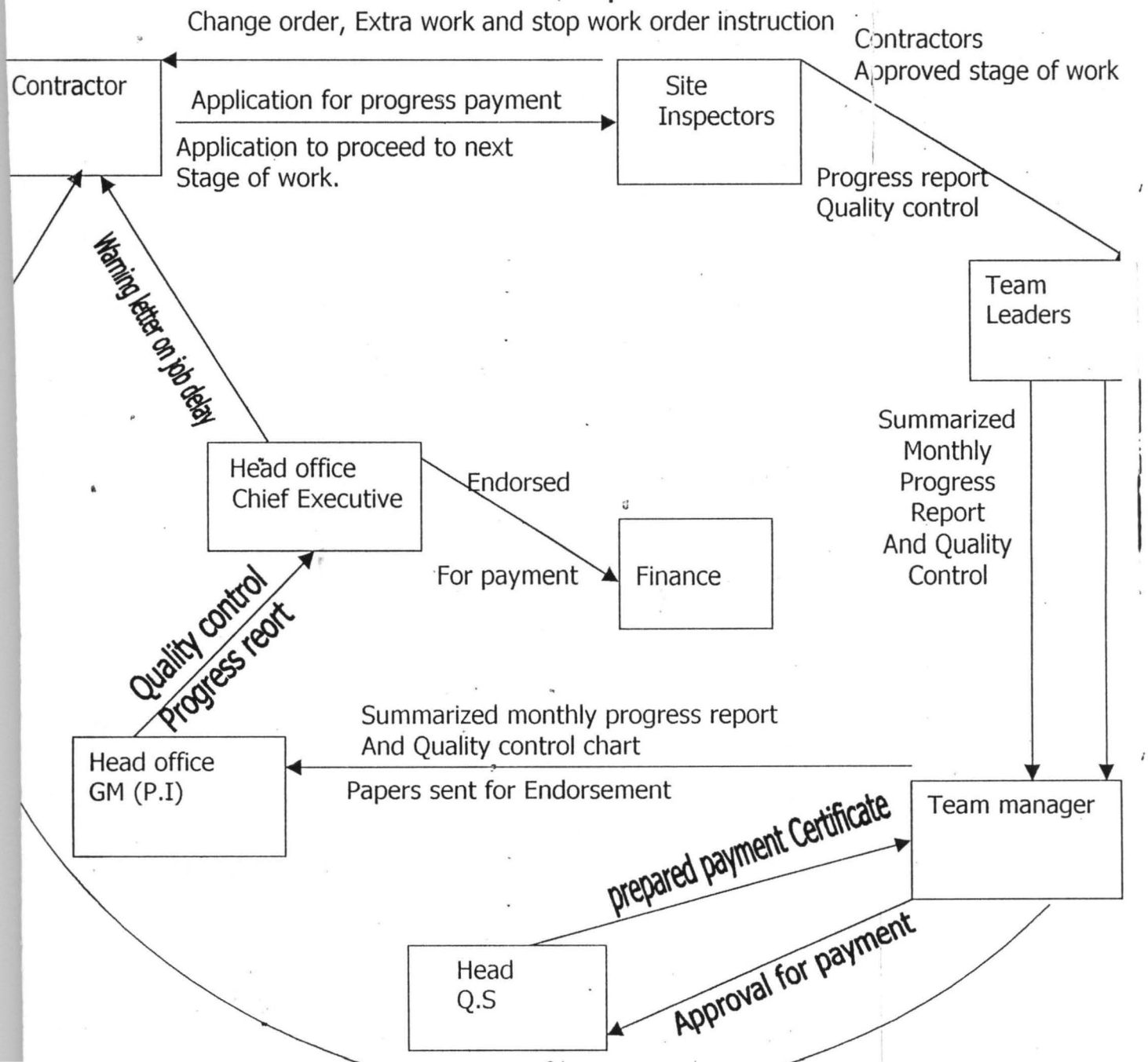
Reports: Copies of all reports of all types are filed by date.

Samples: All approved samples showing materials are kept at the job site as a basis of comparison.

Deviation Requests: Whenever a request for deviation is received, a copy is maintained with the disposition of the request.

Bill of Quantities

-SYSTEM FLOW CHART OF EXISTING SYSTEM



3.1.3 Problems and Requirements List

The interviews and direct observations made were able to give enough information to produce problems and requirement list for the project. Forms and manual aids which contain remarks were reproduced which suggest that there are faults in the present system. The impact of these problems on the authority were considered.

The following are the impacts, which the problems had on the authority.

1. Delay in the processing of periodic progress payment
2. Increase in costs of providing information to all concerned by the use of paper forms of different sizes which are kept for storage at the end of the day.
3. The bulkiness in carrying papers containing site information to the head office monthly or on demand.
4. Provision of incomplete information on site work for decision making.
5. Ineffectiveness in project monitoring and inspection that is, incapable of detecting intended and unintended errors made on site.
6. Deterioration in contractors' loyalty due to delay in their payment.
7. Ineffeciency in use of material on site that is, lack of proper documentation of FHA materials used on site by contractors.
8. Delay in handing over houses to prospective buyers (client) due to delay in the payment of contractor who are constructing the building.

9. Lack of management information that is, incorrect repetitive, and ambiqous information (unstructured) leading to improper management decisions and loss of business.
10. There is loss of goodwill.
11. Drastic loss of income; net income is reduced by the increase in the overhead cost due to the purchase of information papers (paper work), which led to reduced profit.
12. Time wastage on paper work.
13. Management can not assess site informations directly from their terminal.

3.2 DESIGN OF A NEW SYSTEM

The emphasis of systems design is to develop a new system that will help to achieve the goals and objectives of the authority and overcome some of shortcomings and limitations of the existing system.

In the design of a new system, the following elements are put under consideration:

1. Organizational constraints
2. Functional design
3. Output desgn
4. Input design
5. Processing design
6. File and database design

7. Procedures design

8. Personnel and Job design

INPUT DESIGN: Considering the input is greatly inlfuenced by the needs of output;

The following are considered in the design of input,

(a) Data collection method and validation

(b) Types of input media available

(c) Volumes of input document

(d) Design of input layout

OUTPUT DESIGN: It is necessary to consider what is required from the system before deciding how to set about producing it. The analyst will need to consider,

(i) Form

(ii) Types

(iii) Volume and frequency of reports and document

FILES: It is linked to input and output. Considerations involved in designing files are:

(a) Storage media

(b) Method of file organisation and access

(c) File Security

(d) Record layouts

PROCEDURES: They are the steps which unify the whole process, which link everything together to produce the desired output. It start with the source document and end with the output document for distribution.

It is Important to determine which backup systems are required. Everything should have a backup including all hardware, softtware, data and personnel. What to do in case of a computer – related disaster should aslo be considered in the design phase.

The documentation of the new system is very similar to the documentation of the existing system. Tools such as flow charts, decision tables are used. The important of good documentation cannot be over emphasized. In most cases there is both user and technical documentation. Without good documentation, the new system may never be used and it may be virtually impossible to modify the system in the future.

3.2.1 COST – BENEFIT ANALYSIS FOR MIS EXPENDITURE

Cost benefit analysis is the methodology most widely used by practitioners as a means of comparison of alternatives for both pre-implementation decision – making and post implementation assessment. It relies on the qualification of all costs and benefits related to the project under consideration and their aggreggation into a single figure which in some sense represents its worth. The

sum is generally to choose that project which has the maximum value of all benefits minus all costs. It is used to determine econmic feasiblity.

Historically, the problem of determining MIS costs and benefits are relatively very easy to solve. Early MIS department dealt with trasactions costing and direct hardware costs were readily available. Software costs were fairly straight forward unless large custom made programs were involved. The consequences of early computer applications were more easy quantified because they used transactional data and basic account information accounting information for front line operations managers whose needs were clearly defined. However as MIS system evolved they changed from transaction – processing system to complicated information – retrieval systems. The newer, more complicated system bought with them a greater difficulty in justifying MIS, particularly when determing the benefits affiliated with such system.

Several criteria is used with weighted scoring models to determine if MIS expenditures are appropriate.

The cost factor check list includes:

- The application development time
- The use of personnel to develop the system
- The development cost
- The type of management and MIS personnel involved
- The ease of development

Criteria to estimate the benefit affiliated with an MIS application include;-

- The impact on profits
- The reduction in management time due to the application. from the cost analysis, it is obvious that the cost of implemetation is capital intensive, it needs large sum of money but the benefits are more, they supersede the cost of development and implementation.

THE BENEFITS

- The provision of information in the right form at the right time and location to those involved in the construction work and for management decision so that efficient buildings and structures results with a minimum cost to the total construction process.
- The Achievement of maximum and accurate record of site progress work.
- The optmization of the quality and standard of work done on site.

On being convinced, we therefore enter into the design proper by first making a request to the management for the project to continue. There is a need for authorisation from the management to continue with this project.

3.2.2 DESCRIPTION OF INFORMATION SYSTEM

The information system of an organisation is a system that has the function of planning the behaviour of this organisation, of alerting the organisation to changes in its environment and in itself, signal the need for action and of controlling action towards the implementation of a plan. While production system of an organisation is that part in which matter is transformed into some new product. As a government establishment, FHA is mainly engaged in information handling where physical activities in form of product are given out as contract to contractors to execute.

Project monitoring and supervision is information activity of construction work. Information system may be summerized in this scheme leaving the people and other sublets out.

Existing ⟶ Information Activity ⟶ New Information

When the existing informations is recorded, it is called information store. New information is called information result. It should be emphasized that any information result will function as information store to another information activity.

The collection of words e.t.c is called vocabulary, the rules for combing these words are called rules of grammer or basic syntax.

Management information system is therefore that part of the information providing system specially designed for providing the decision making system with information.

LIMITS OF INFORMATION SYSTEM

The limits of any information system can be most unambiquosly described by means of its information result. Given a particular information result, one may establish which information activities have led to it, who performed these and what hardware was used. Thus an information sub (system) is defined by its result, the information which produced it should be comparable.

3.2.3 EVALUATION OF ALTERNATIVE INFORMATION SYSTEM

The essence of evaluation is to compare particular characteristics of something against a set of standard requirements or against a completing alternative.

The evaluation of the information system involves;

(1) Establishing comparability by establishing the content of an information result

(2) Listing possible criteria.

(3) Selecting a set of relevant criteria

(4) Measuring attributes, corresponding to the selected criteria.

(5) Comparing measured attribute, i.e values, with criteria and concluding whether

system evaluation is below, at, or above standard as set by criterion.

Certain criteria are used to measure the attribute of some selected information system which will lead to the achievement of its objectives.

The variuos criteria are;

(1) **Technical feasibility:** It tries to see if the technology needed is available and if available whether it is used.

(2) **Operational feasibility:** It is a measure to find out if the proposed solution can fit in with existing operations and whether the right information at the right time is provided to the users.

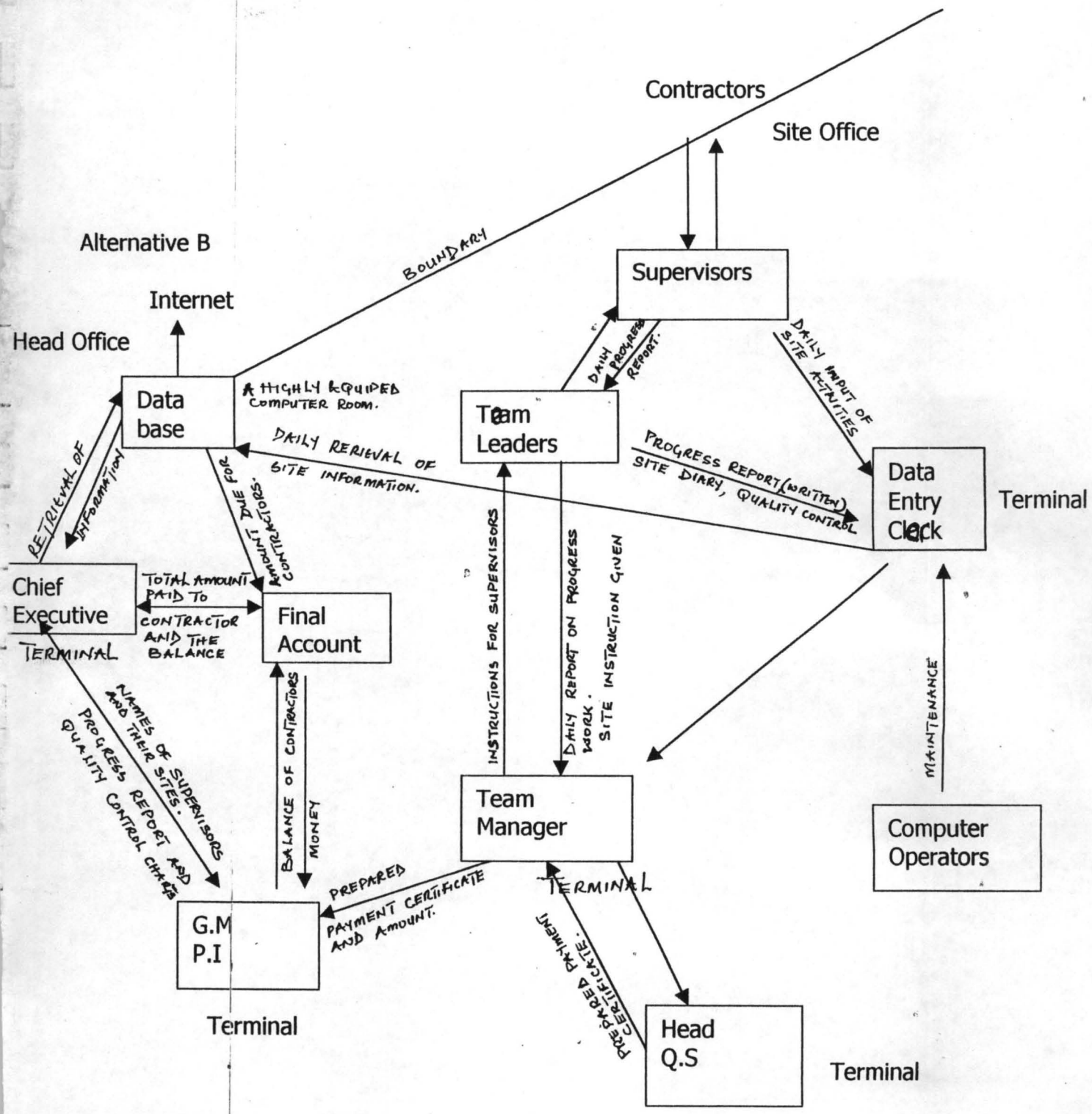
(3) **Economic feasibility:** The question is whether finance are available for implementing the proposed solution and whether the money spent is recovered by better user satisfactory.

With the first two criteria being same for the alternatives and using the last criteria, being the economic feasibility, cost benefit analysis is used to achieve the economic feasibility.

It is therefore used in the selection of the proposed information system.

DESIGN ALTERNATIVE A AND B

In designing the alternative information system, various factors were considered;

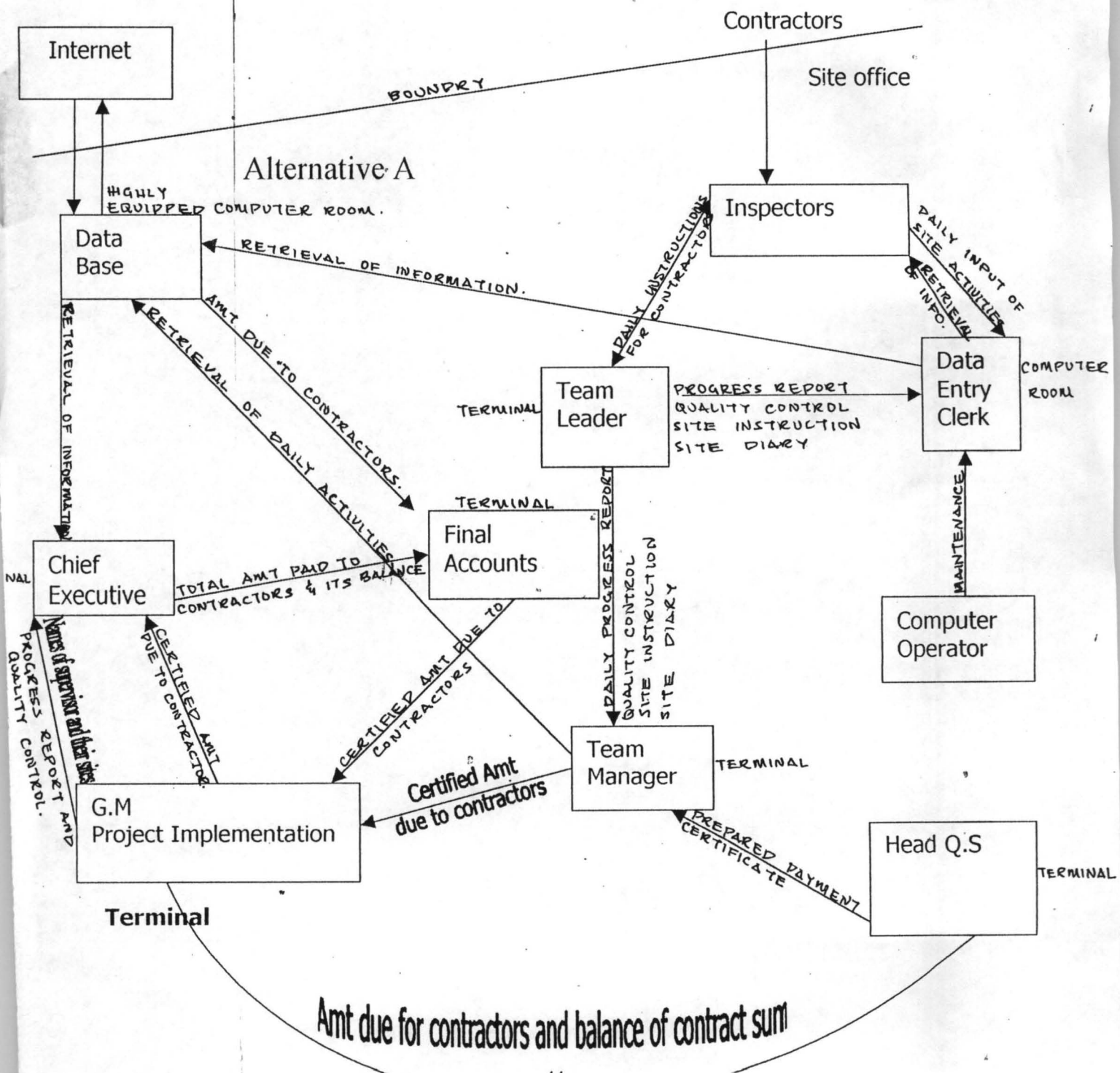

Contractors
Site Office
Alternative B
BOUNDARY
Supervisors
Internet
Head Office
Data base
A HIGHLY EQUIPED COMPUTER ROOM.
DAILY PROGRESS REPORT.
DAILY INPUT OF SITE ACTIVITIES
Team Leaders
DAILY REVIEVAL OF SITE INFORMATION.
PROGRESS REPORT (WRITTEN) SITE DIARY, QUALITY CONTROL
Data Entry Clerk
Terminal
RETRIEVAL OF INFORMATION
AMOUNT DUE FOR CONTRACTORS.
Chief Executive
TOTAL AMOUNT PAID TO CONTRACTOR AND THE BALANCE
Final Account
TERMINAL
INSTRUCTIONS FOR SUPERVISORS
DAILY REPORT ON PROGRESS WORK. SITE INSTRUCTION GIVEN
MAINTENANCE
NAMES OF SUPERVISORS AND THEIR SITES. PROGRESS REPORT AND QUALITY CONTROL CHARTS
BALANCE OF CONTRACTORS MONEY
Team Manager
Computer Operators
PREPARED PAYMENT CERTIFICATE AND AMOUNT.
TERMINAL
G.M P.I
PREPARED PAYMENT CERTIFICATE
Head Q.S
Terminal
Terminal

(1) Design of output that will be produced under the new system

(2) Design the processing steps that will be needed to produce the desired output.

(3) Design of the necessary inputs

(4) Incoporate necessary controls



Using the cost – Benefit analysis in the selection of a proposed system.

(A)	**EQUIPMENT COST**	Alt. A	Alt B
(1)	Capital cost of computer	8xN100,000	6xN100,00
	Peripheral devices	N50,000	N40,000
B)	**INSTALLATION COST**		
	Highly equiped	N1,500,000	N1,480,000
	Computer - Room		
C)	**DEVELOPMENT COST**		
	Software consultancy	N500,000	N500,000
	Changeover cost	N600,000	N400,000
D)	**PERSONNEL COST**		
	Staff training	N1,50,000	N80,000
	Staff recruitment	N300,000	N300,000
	Staff salaries	N3,000,000	N2,800,000
	Overheads	N400,000	N365,000
(E)	**OPERATING COST**		
	Consumable materials	N 90, 000	N60,00
	Maintenance cost	N 2,500,000	N1,500,000
	Insurance, power and Telephone	N5,000,000 per annum	N4,200,000 per annum

Standby generator	N 8,000,000	N8,000,000
ARRANGEMENT		
TOTAL COST	**N23,8900,000**	**N20,425,000**

From the above cost analysis, I recommend that Alternative B be chosen since the overall cost of implementation is less.

3.2.4 DESIGN OF SELECTED MIS FOR PROJECT MONITORING.

The end of the system design stage requires a report to document the findings. The purpose of the system design report is to give management enough background so that they can decide upon the best alternative.

The report includes;

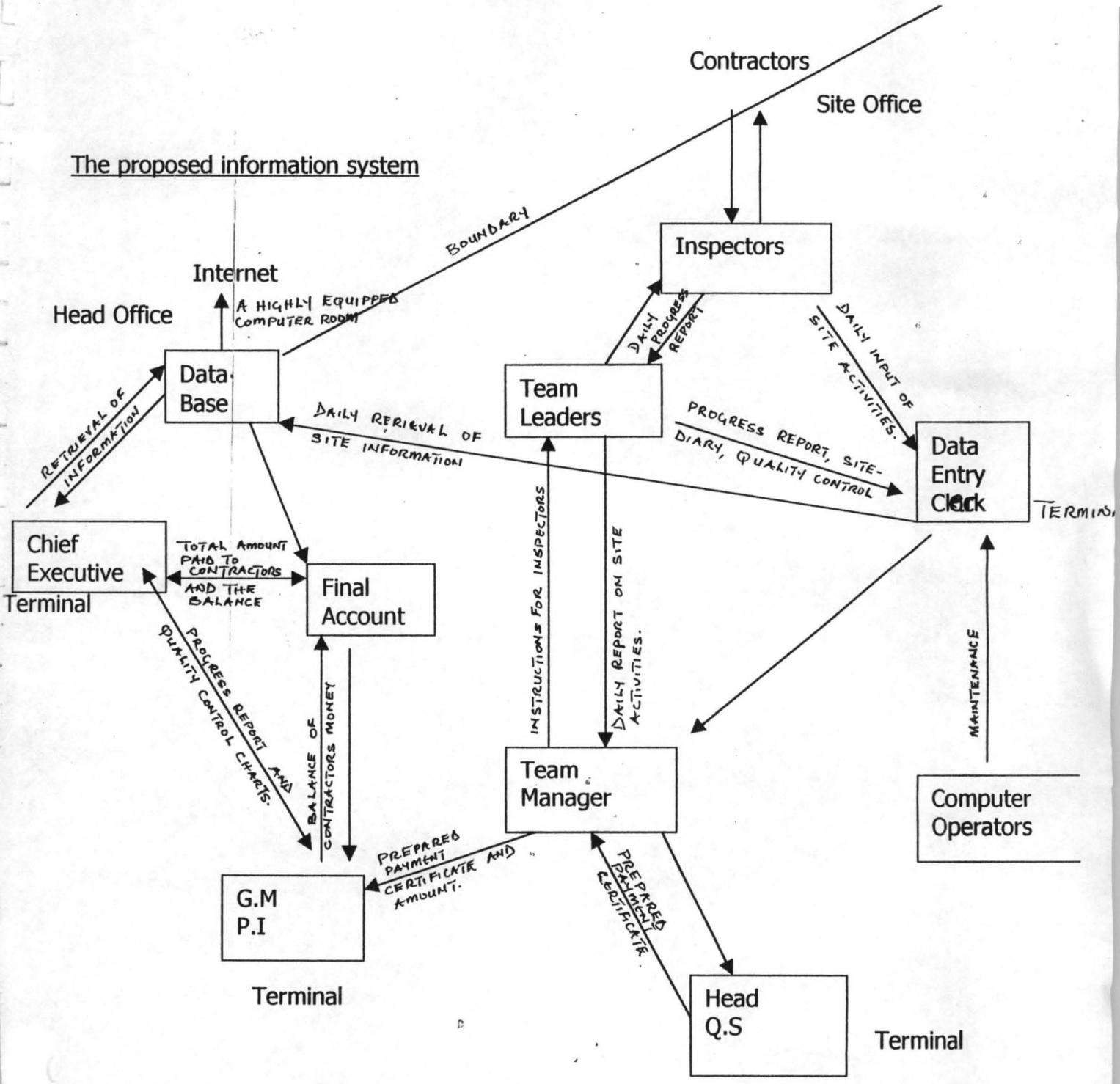
(1) The scope and objectives of the design study

(2) Two alternative design

(3) An economic feasibility report

(4) Discussions of the probable effects of the proposed informaion system on FHA

(5) The report recommend one alternative, stating the assumptions and logic behind the recommendations.


Contractors
Site Office
The proposed information system
BOUNDARY
Inspectors
Internet
Head Office
A HIGHLY EQUIPPED COMPUTER ROOM
DAILY PROGRESS REPORT
DAILY INPUT OF SITE ACTIVITIES.
Data Base
Team Leaders
RETRIEVAL OF INFORMATION
DAILY RERIVAL OF SITE INFORMATION
PROGRESS REPORT, SITE-DIARY, QUALITY CONTROL
Data Entry Clerk
TERMINAL
Chief Executive
Terminal
TOTAL AMOUNT PAID TO CONTRACTORS AND THE BALANCE
Final Account
INSTRUCTIONS FOR INSPECTORS
DAILY REPORT ON SITE ACTIVITIES.
MAINTENANCE
PROGRESS REPORT AND QUALITY CONTROL CHARTS.
BALANCE OF CONTRACTORS MONEY
Team Manager
Computer Operators
PREPARED PAYMENT CERTIFICATE AND AMOUNT.
PREPARED PAYMENT CERTIFICATE
G.M P.I
Terminal
Head Q.S
Terminal

For the proposed system, contractors make request to their various inspectors asking for approval to continue work on site and the approval for the stage of work done for payment.

This request is passed to the team leaders who approves for continuation and submits the request for payment and the stage of work properly done to the team manager who stores it in his terminal.

The Head Q.S retrieves the information and computer the contractors payment which is then retrieved by team manager and make it available for the G.M (P.I) to assess. The G.M also assesses the monthly progress report, the Quality control chart, the site instruction and the site diary on daily basis to know if any problem is encountered on site. This information is passed on to Chief Executive who assess it with the help of his terminal.

The Database or Databank is the storage system where all information about the Authority including the site activities are stored. Information or management decision are retrieved from the Chief Executive and stored in the bank. unstructured decision information) while structured information are retrieved directly from the Site Data Entry Clerk terminal. The Data Entry Clerk is assisted by the computer operators for maintainance purposes.

Note that the team manager supplies the Head Q.S with data on stage of contractors work on site.

The final account receives information on payment from the G.M's terminal for further processing .

The Chief Excutive retrieves information from the final account for balance of account of contractors.

This system can be facilitated with the help of a remote Network System.

CHAPTER FOUR

SYSTEM DEVELOPMENT

4.1 PROGRAM DEVELOPMENT

Program development encompasses all the facets of software. The various component of a program must be combined into a single unit to make up the program. These major components includes:

(a) Menu Design

(b) Input Specification

(c) Out put specification

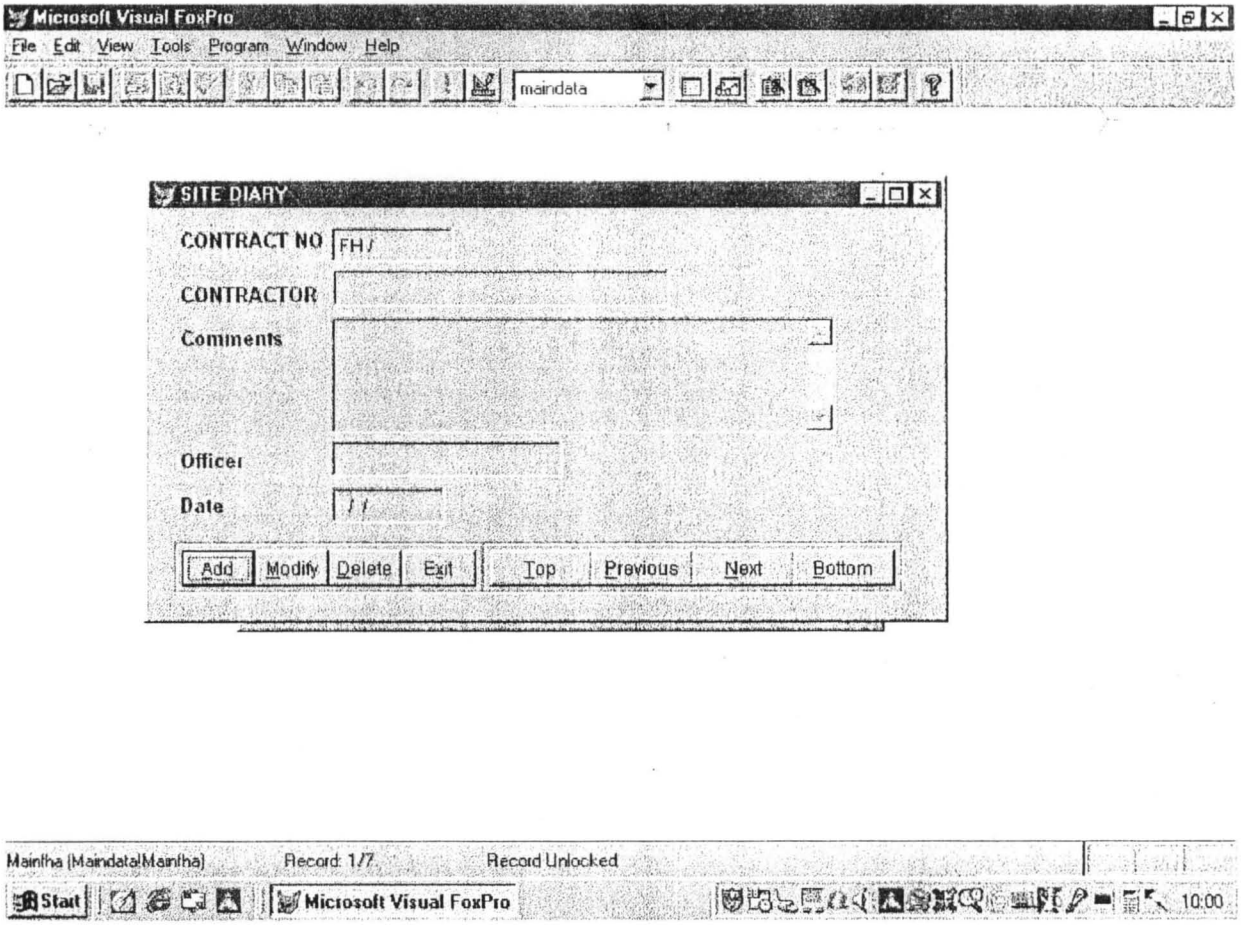
4.1.1 MENU DESIGN

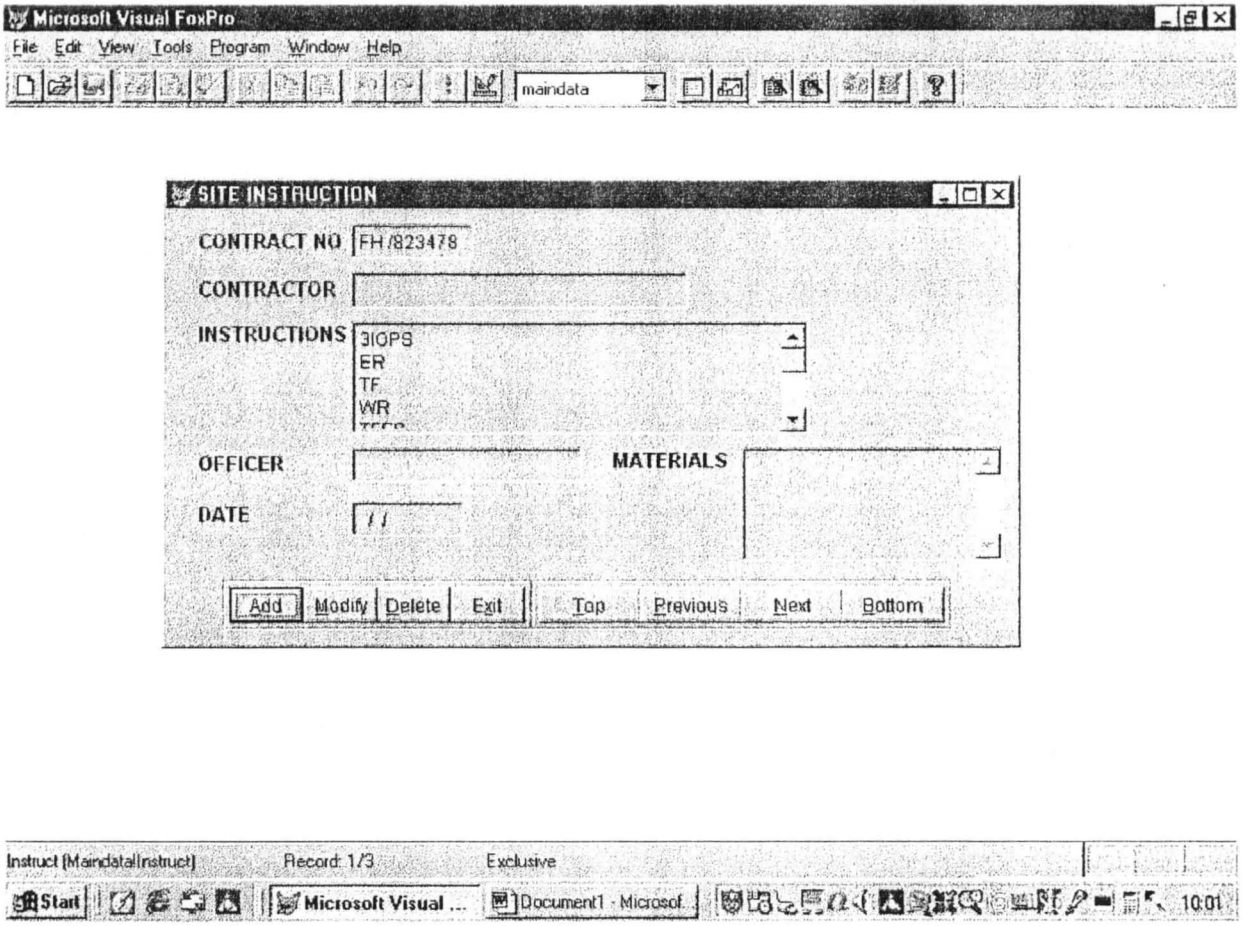
The use of menu in programs today have became almost compulsory with the advent of the windows programming environment. The use of mouse to make selections is quite easier than the conventional keyboard data Entry.

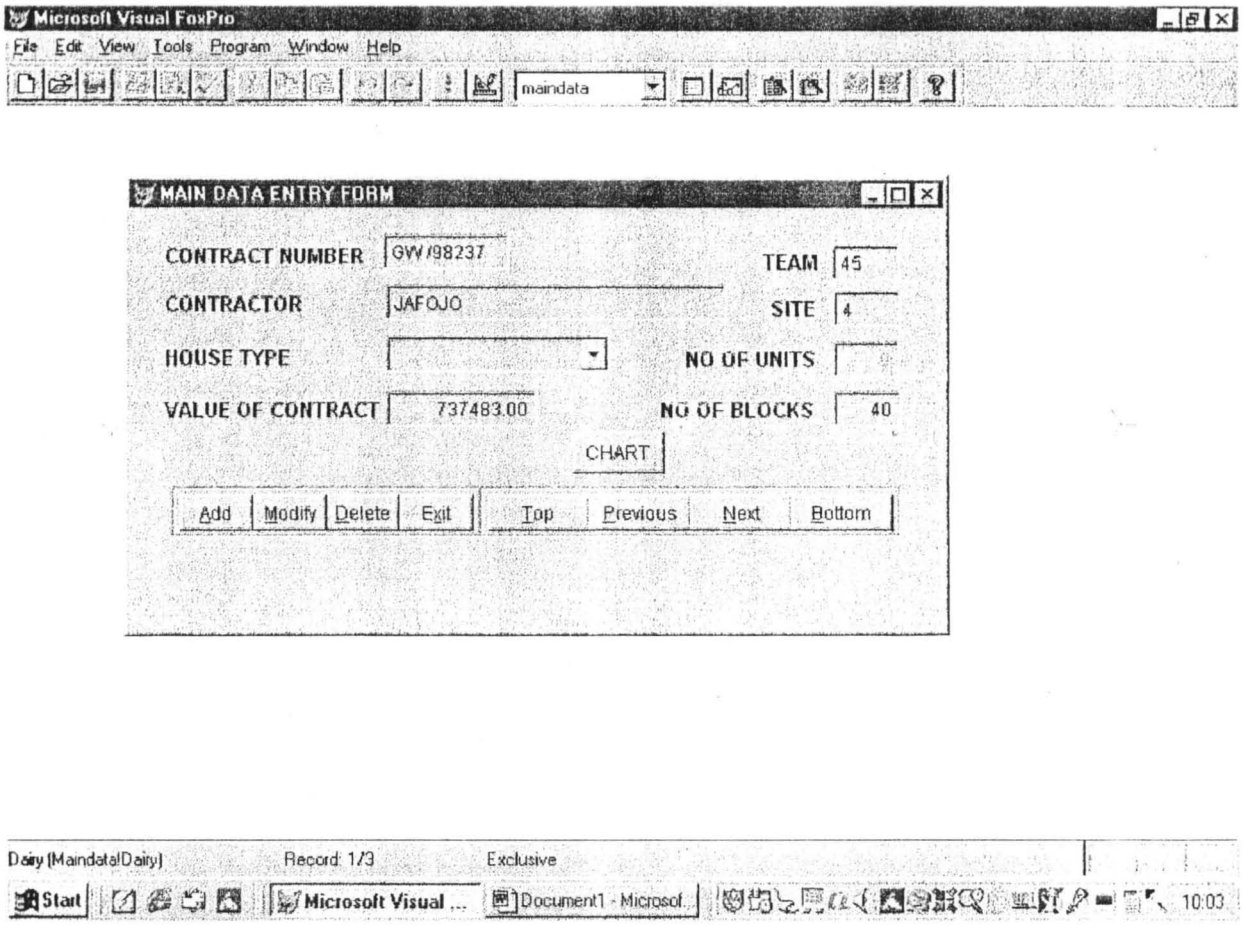
A menu is a list of available options from which a computer user can select. The FHA software is made up of a Bar menu (main menu) as shown.

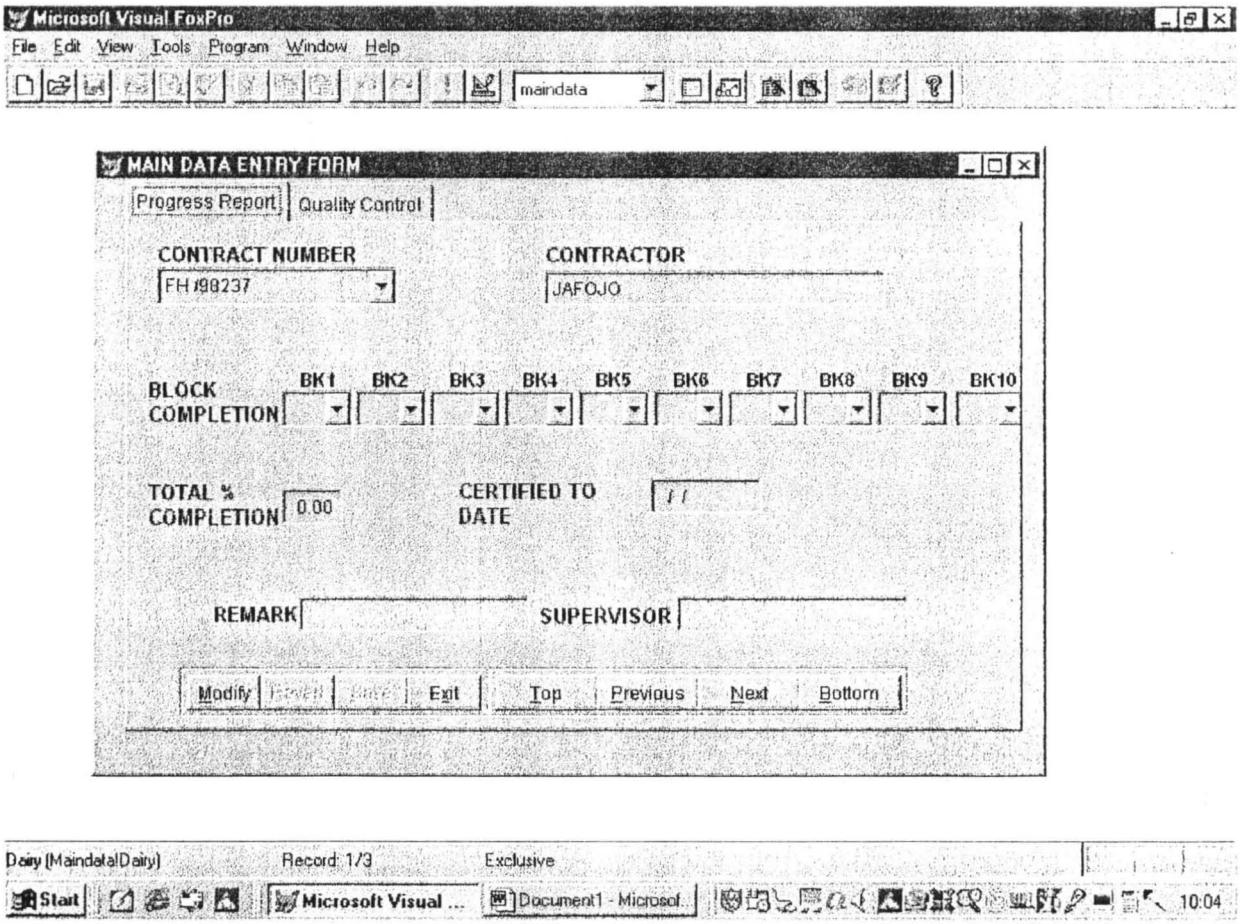
CONTRACT	SITE DIARY	SITE INSTRUCTION	REPORT	QUIT

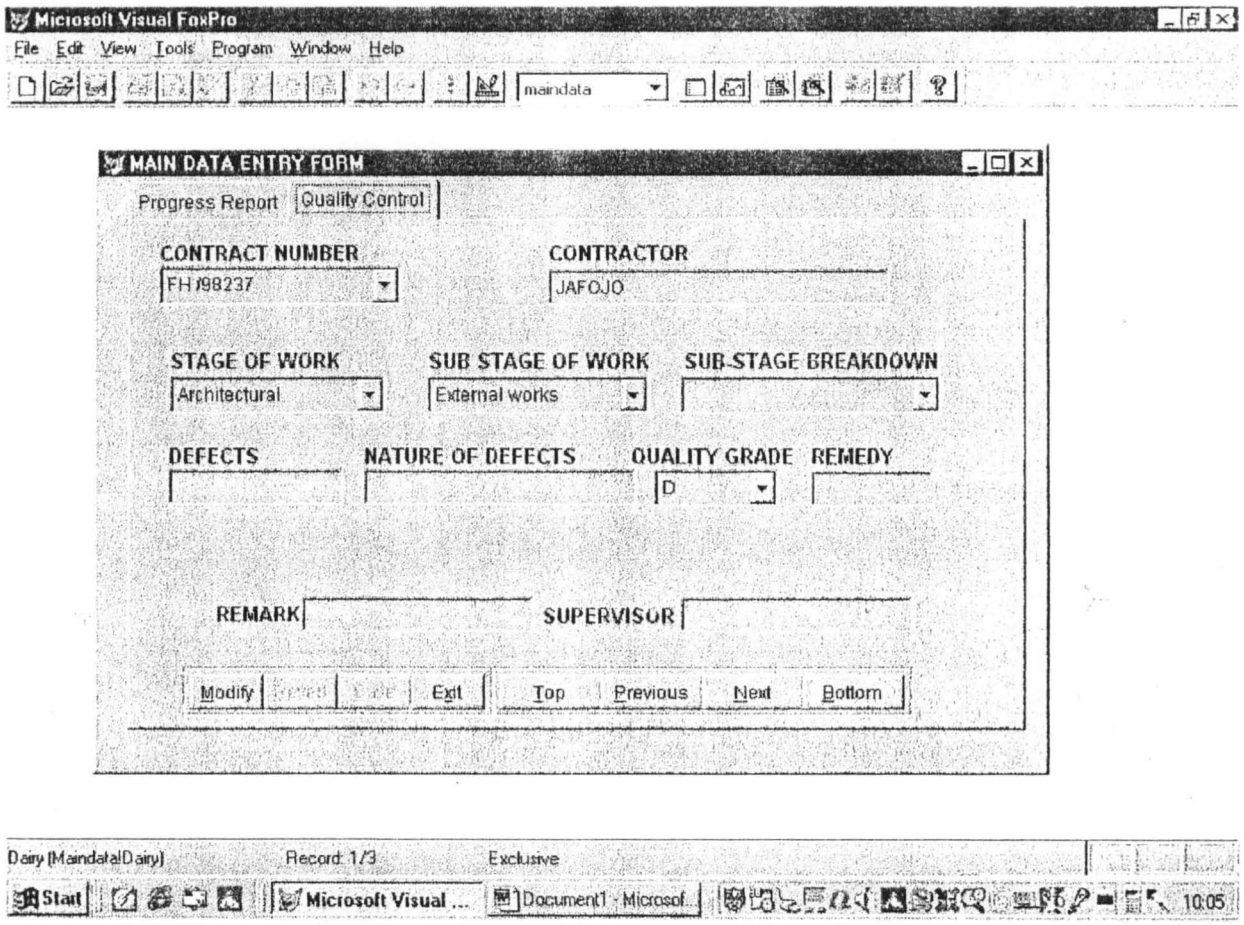
Each of the items of the menu causes a form to be loaded except the quit option that closes the programm and the report option which causes a sub menu to be loaded.

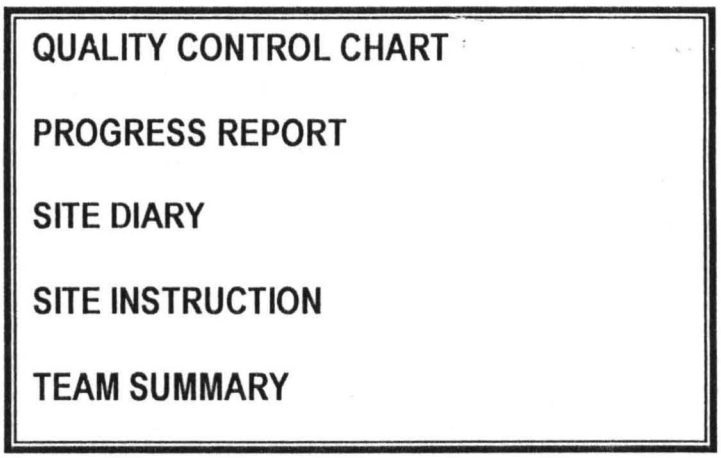

Microsoft Visual FoxPro
File Edit View Tools Program Window Help
maindata
SITE DIARY
CONTRACT NO
FH/
CONTRACTOR
Comments
Officer
Date
/ /
Add
Modify
Delete
Exit
Top
Previous
Next
Bottom
Maintha (Maindata!Maintha)
Record: 1/7
Record Unlocked
Start
Microsoft Visual FoxPro
10:00


Microsoft Visual FoxPro
File Edit View Tools Program Window Help
maindata
SITE INSTRUCTION
CONTRACT NO
FH /823478
CONTRACTOR
INSTRUCTIONS
3IOPS
ER
TF
WR
OFFICER
MATERIALS
DATE
/ /
Add
Modify
Delete
Exit
Top
Previous
Next
Bottom
Instruct (Maindata!Instruct)
Record: 1/3
Exclusive
Start
Microsoft Visual ...
Document1 - Microsof...
10:01


Microsoft Visual FoxPro
File Edit View Tools Program Window Help
maindata
MAIN DATA ENTRY FORM
CONTRACT NUMBER
GW/98237
TEAM
45
CONTRACTOR
JAFOJO
SITE
4
HOUSE TYPE
NO OF UNITS
VALUE OF CONTRACT
737483.00
NO OF BLOCKS
40
CHART
Add
Modify
Delete
Exit
Top
Previous
Next
Bottom
Dairy (Maindata!Dairy)
Record: 1/3
Exclusive
Start
Microsoft Visual ...
Document1 - Microsof...
10:03


Microsoft Visual FoxPro
File Edit View Tools Program Window Help
maindata
MAIN DATA ENTRY FORM
Progress Report
Quality Control
CONTRACT NUMBER
FH /98237
CONTRACTOR
JAFOJO
BLOCK COMPLETION
BK1 BK2 BK3 BK4 BK5 BK6 BK7 BK8 BK9 BK10
TOTAL % COMPLETION
0.00
CERTIFIED TO DATE
REMARK
SUPERVISOR
Modify
Exit
Top
Previous
Next
Bottom
Dairy (MaindatalDairy)
Record: 1/3
Exclusive
Start
Microsoft Visual ...
Document1 - Microsof...
10:04


Microsoft Visual FoxPro
File Edit View Tools Program Window Help
maindata
MAIN DATA ENTRY FORM
Progress Report
Quality Control
CONTRACT NUMBER
FH /98237
CONTRACTOR
JAFOJO
STAGE OF WORK
Architectural
SUB STAGE OF WORK
External works
SUB-STAGE BREAKDOWN
DEFECTS
NATURE OF DEFECTS
QUALITY GRADE
D
REMEDY
REMARK
SUPERVISOR
Modify
Exit
Top
Previous
Next
Bottom
Dairy (MaindatalDairy)
Record: 1/3
Exclusive
Start
Microsoft Visual ...
Document1 - Microsof
10:05



Each of the item in this sub menu causes the appropriate report to be generated.

4.1.2 INPUT SPECIFICATION

The input specification describes the input that goes into the program to be processed in order to get the appropriate output. Forms were the major source of input to the FHA software. The following forms were used;

1. Main data Entry form
2. Progress Report form
3. Quality Control Form
4. Site Diary
5. Site Instruction

Samples of these forms are attached.

4.1.3 OUTPUT SPECIFICATION

The output specification describes the results expected from the processing of any software. The FHA software has five reports as seen in the reports sub menu.

QUALITY CONTROL CHART
PROGRESS REPORT
SITE DIARY
SITE INSTRUCTION
TEAM SUMMARY

Copies of these reports are attached in the appendix

4.2 DATABASE DESIGN

Database design, which is also known, as file design is the common denominator of any system. It contains the raw material (Data) necessary to produce the output.

In manufacturing, for example, it is only when the product to be made is decided upon that the raw materials could be specified and ordered. In the process of developing an information system. Output requirements are first decided upon before input data are specified. In a sense, output requirement can be thought of as input database design.

Therefore the database file design include all the database files used throughout the system for proper stage of contract record. Below are the physical descriptive structures of the entire database file used.

MAIN FHA. DBF

The main fha. dbf database is the main database. It contains all contract records and the structure is as follows:

Field Name	Type	Width
Contract NO	Character	10
Contractor	Character	30
Team	Character	2
Site	Character	2
House type	Character	10
Units	Numeric	2
Cont Value	Numeric	13
Blocks	Numeric	3
Breakdown 1	Character	30
Breakdown 2	Character	30
Legend 1	Character	1
Legend 2	Character	1
Legend 3	Character	1
Legend 4	Character	1

Legend 5	Character	1
Legend 6	Character	1
Legend 7	Character	1
Legend 8	Character	1
Legend 9	Character	1
Legend 10	Character	1
Remark	Character	20
Completion	Numeric	5
Supervisor	Character	20
Cert. to date	Date	8
Defects	Character	15
Nature of defects	Character	18
Q.grade	Character	13
Remedy	Character	15

INSTRUCT DBF

The instruct. dbf database contains records of site instruction, the structure is as follows:

Field Name	Type	Width
Contract No	Character	10
Instruction	Memo	4
Materials	Memo	4

Officer	Character	20
Date	Date	8

DIARY

The diary database contains records of site diary and has the following structures

Field Name	Type	Width
Contract No	Character	10
Comments	Memo	4
Officer	Character	4
Date	Date	8

4.3 CHOICE OF PROGRAMMING LANGUAGE

From the previous analysis, it is pertinent to say that the proposed system is going to be used to store large number of data / information and time to time retrieval of record. Due to this fact, the choice of the programming language chosen for the development of the system is database management system (DBMS) package with special preference for visual foxpro.

In the course of the programmes, writen specifications which are reviewed before programs are written and its proper documentation is done by the use of flow chart.

4.4 ORGANISATION OF FILES AND DATA

Data can be defined as a piece of raw fact or figure, since data is the core of any software development, it is essential to manage data carefully. Data make up records and records make up files. A file is a combination of related records.

The FHA software has been written in such a way that less strain is placed on the memory, data are stored in the database on disk and the program accesses the database each time it requires such data.

4.5 SECURITY

Security is a very important aspect of any software development. The use of password is a reliable form of security because users cannot gain access to programs until they know such password.

This method of security is implemented in FHA software. A backup system which make a difference between success and failure if something awful happens to the system is aslo implemented.

4.6 SYSTEM IMPLEMENTATION

System implpementation is a broad term that encopasses testing and Debugging, hardware anmd software requirement, system installation and system conversion.

It is aslo the co-ordination of the fact which are necessary in ensuring of the operation of the new system.

4.6.1 SYSTEM TESTING AND DEBUGGING

The essence of program testing is to make sure that the program is error free and that all the logic involved are well defined and straight forward. However, it is often seen as means of establishing that a program is error free and that it does what it is required. This is a very dangerous view. It is virtually imposible to test a program thorougly and refer it as free from error. In most cases, fixing one error gives rise to host of others which in turn have to be corrected exhaustively. It is much more realistic to think of testing as a "Process of finding errors" when a program appears to run perfectly it does not mean that there are no more errors, it simply means that the errors have not been discovered. If proper flow charts are used, it is possible to test every part of a program with sample batches of real data as well as artificial "worst case" test data.

It is advisable that software, hardware and procedures are each tested seperately and then combined and tested as a group. The tests consists of feeding dummy or made-up data into the system, following it as it is converted to information and evaluating the results.

4.6.2 HARDWARE AND SOFTWARE REQUIREMENT

To make maximum utilization of proposed system, certain hardware and software needs to be installed.

Hardware Requirement

This comprises of all the physical component of the computer system and its accessories. Therefore the chioce of the computer requirements is done to suit both the current and the future needs of the organisation with respect to the volume and types of data to be processed. In summary, a computer system with the following minimum requirement is needed.

a. Complete Computer System

Pentium 283

10 GB HDD

64 MB RAM

150 W Speaker

50 x CD Rom drive + Sound Card

14" SVGA Monitor

1.44 MB FDD

Microsoft Mouse

Window Keyboard

B. Other components

Uninterrupted power supply (UPS)

Automatic Voltage Regulator (Stabilizer)

EPSON LQ 2180 Printer

HP Laser Jet 1100 Printer

A packet of 3.5" Diskette.

CHAPTER FIVE

SUMMARY

Building and civil works as we said earlier are becoming increasingly complex and simultanously the time alloted for design and construction is decreasing. All this serve to illustrate how important it is for the Authority to develop information systems which ensure that the right information arrives at the right time in the right place.

Information system for monitoring purposes enhances the probability of achieving efficient buildings at a minimum cost but however a good information system is not an absolute guarantee for good design and management. The provision of housing is considered as one of the necessities of life, thus one of the worst characteristic features of destitution and neglect is homeless. Human development in all its ramification essentially requires descent shelter.

FHA in its decree is establised in the provision of this said shelter to the public. In order to meet up the public demand for shelter, the introduction of computerised information system for its monitoring purposes is needed. The information system is an attempt to improve the efficiency, accurancy and the economy of the existing system.

As an establishment concerned with the issuance of contract and monitoring of this contract project. It serves as supervisory team of government. The existing system already have its setbacks, it is not able to

achieve the goal of the authority by delivering houses at the right time with minimum cost, it ends up with adhoc jobs to achieved this goal.

Information is not supplied at the time needed, certain time need to be given for it to be provided. Due to delay in providing this information, improper decisions are made by management. This improper decisions led to the deterioration of the system.

Therefore, the purpose of this research work is to make alternative for the existing system and this was done by analysing the existing system i.e. finding out the problems and constraints it undergoes and introducing a new information system based on their requirement and needs for affective project monitoring and inspection.

The new system introduced cannot work without other support. It needs certain requirements – hardware and software for maximum utilization of the new system.

These requirements have been explained in this work to enlighten readers and users. There is need for training of personnels before changeover is made for proper and successful information system.

5.1 ANALYSIS OF RESULT

On the basis of the hypothesis that given a certain class of information results, the information (Sub) system producing such information results should be comparable. It is much possible by stating the names of the items or their

attributes and comparing them with the output specification i.e the information result obtained.

Sub system / Attributes

(1) Data Compilation

- Data Selection and transformation
- Scope of information
- Data acquisition

(2) Data Preparation

- Identification
- Classificaton
- Data control
- Formal Unification

(3) Storage and Distribution

- Scope of service
- Access / search tools

(4) Updating

- Scope (period of updating)
- Storage (Period of updating)
- Distribution of updated inforamtion

	Quality Control	Progress report	Site Diary / Instruction	Team Summary
1. Data Selection & transformation	Good	Good	Good	Good
2. Scope of information	Good	Good	Good	Good
3. Data acquisition	Good	Good	Fair	Good
4. Idenfication	Good	Good	Good	Good
5. Classification	Good	Fair	Fair	Good
6. Data control	Good	Good	Fair	Fair
7. Formal Unification	Good	Good	Fair	Good
8. Scope of services	Fair	Fair	Good	Good
9. Access / Search tools	Good	Good	Good	Fair
10. Scope updated process	Good	Good	Good	Good
11. Storage	Good	Good	Good	Good
12. Distribution of Updated	Good	Good	Good	Good
information	Good	Good	Good	Good

5.2 OBSERVATION AND CONSTRAINTS

A new information system is important to Authority for delivery of efficient building structure with minimum cost and specified time, but as a government establishment, it is posed with certain constraints.

- Unwillingless of the governement to fund the new information system

- Lack of fund to take up the new system by itself.
- Changes in government policies which might affect decisions made in the Authority.
- Not appoved by some user – managers who see it as distraction and waste of money and are comfortable with the old system.
- Lack of maintainance, which might lead to failure of the system after a certain time. This arises from the "I don't care" attitude which is often experienced in governement establishment where government properties are often neglected.
- The use of computer terminals rather than mails to deliver information may increase the chance of clerical error. Clerks must be well trained to accept datas from the supervisory team.
- The new software is always tailored to the company specific application and problems may result from these.

5.3 RECOMMENDATION

The purpose of the present effort is to provide a basis for improvement and co-ordination of the exsting systems.

This work is restricted to the monitory aspect of project implementation. It refused to delve into software for periodic payment but concerns itself with the work properly done by contractor requesting for payment.

I recommend that research work should be made on thre total project implementation process which includes;

1. Project design
2. Construction proper
3. Contractor's personal data
4. Supplies of materials
5. Bill of Quantities
6. Project Finance

There is room for improvement on this work, researchers should make effort in Improving the situation already placed in this study.

I recommend more work to be done on the software specification and requirement especially the software for monitoring of infrastructures.

5.4 CONCLUSION

Management personnels can now with the introduction of the new system, make jdicious decisions and proper judgement on the day-to-day activities of the site work. These decisions will invariably lead to effective monitoring and supervision of project on site.

FHA needs assistance from government or investors to actualize this dream for efficiency and improvement on the economy of the Authority.

REFERENCE

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APPENDIX

```
**********************
*Menu Section
**********************
set device to screen
clear
*RUN \projinfo\info.EXE
SET SYSMENU OFF
CLOSE ALL
CLEAR
set safety off
set color to w/b
set exclusive on
set date to brit
set century on
set status off
set talk off


clear
set path to \fha
PUBLIC MY, myear
store space(9) to myear


_screen.icon = "seccast.ico"
_screen.caption = "Federal Housing Authority (MIS)"
_screen.picture = "contract.bmp"


my =0
do form frmpass
sele 1
use mainfha again exclusive
sele 2
use instruct again exclusive
sele 3
use diary again exclusive

sele 1
do fhamenu.mpr
read events
return
```

```
*************************************************
*-- Form:        form1 (c:\fha\formmain.scx)
*-- ParentClass:  form
*-- BaseClass:    form
*
DEFINE CLASS form1 AS form


        Top = 41
        Left = 50
        Height = 228
        Width = 526
        DoCreate = .T.
        Caption = "MAIN DATA ENTRY FORM"
        FontSize = 10
        Name = "Form1"


        ADD OBJECT lblcontractno AS label WITH ;
                AutoSize = .T., ;
                FontBold = .T., ;
                FontSize = 10, ;
                WordWrap = .T., ;
                BackStyle = 0, ;
                Caption = "CONTRACT NUMBER", ;
                Height = 18, ;
                Left = 23, ;
                Top = 22, ;
                Width = 130, ;
                TabIndex = 11, ;
                Name = "lblContractno"


        ADD OBJECT txtcontractor AS textbox WITH ;
                Comment = "", ;
                ControlSource = "mainfha.contractor", ;
                Format = "!", ;
                Height = 23, ;
                Left = 168, ;
                MaxLength = 30, ;
                TabIndex = 2, ;
                Top = 49, ;
                Width = 219, ;
                Name = "txtContractor"


        ADD OBJECT lblcontractor AS label WITH ;
                AutoSize = .T., ;
                FontBold = .T., ;
                FontSize = 10, ;
                WordWrap = .T., ;
                BackStyle = 0, ;
                Caption = "CONTRACTOR", ;
                Left = 23, ;
                Top = 53, ;
                Width = 90, ;
```

```
        TabIndex = 12, ;
        Name = "lblContractor"


ADD OBJECT txtteam AS textbox WITH ;
        Comment = "", ;
        ControlSource = "mainfha.team", ;
        Format = "99", ;
        Height = 23, ;
        InputMask = "99", ;
        Left = 455, ;
        MaxLength = 2, ;
        TabIndex = 5, ;
        Top = 23, ;
        Width = 43, ;
        Name = "txtTeam"


ADD OBJECT lblteam AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontSize = 10, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "TEAM", ;
        Left = 410, ;
        Top = 26, ;
        Width = 36, ;
        TabIndex = 13, ;
        Name = "lblTeam"


ADD OBJECT txtsite AS textbox WITH ;
        Comment = "", ;
        ControlSource = "mainfha.site", ;
        Format = "!", ;
        Height = 23, ;
        InputMask = "!!!", ;
        Left = 456, ;
        MaxLength = 3, ;
        TabIndex = 6, ;
        Top = 53, ;
        Width = 43, ;
        Name = "txtSite"


ADD OBJECT lblsite AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontSize = 10, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "SITE", ;
        Left = 415, ;
        Top = 56, ;
        Width = 29, ;
```

```
        TabIndex = 16, ;
        Name = "lblUnits"


ADD OBJECT txtcontvalue AS textbox WITH ;
        Comment = "", ;
        ControlSource = "mainfha.contvalue", ;
        Format = "9999999999.99", ;
        Height = 23, ;
        Left = 168, ;
        TabIndex = 4, ;
        Top = 118, ;
        Width = 97, ;
        Name = "txtContvalue"


ADD OBJECT lblcontvalue AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontSize = 10, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "VALUE OF CONTRACT", ;
        Height = 18, ;
        Left = 23, ;
        Top = 122, ;
        Width = 140, ;
        TabIndex = 17, ;
        Name = "lblContvalue"


ADD OBJECT txtblocks AS textbox WITH ;
        Comment = "", ;
        ControlSource = "mainfha.blocks", ;
        Height = 23, ;
        Left = 456, ;
        TabIndex = 7, ;
        Top = 85, ;
        Width = 43, ;
        Name = "txtBlocks"


ADD OBJECT lblblocks AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontSize = 10, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "NO OF BLOCKS", ;
        Height = 18, ;
        Left = 344, ;
        Top = 89, ;
        Width = 99, ;
        TabIndex = 18, ;
        Name = "lblBlocks"
```

```
ADD OBJECT cmdgrpeditor AS commandgroup WITH ;
        AutoSize = .T., ;
        ButtonCount = 6, ;
        BackStyle = 1, ;
        Value = 1, ;
        Height = 33, ;
        Left = 28, ;
        Top = 180, ;
        Width = 201, ;
        TabIndex = 8, ;
        BackColor = RGB(192,192,192), ;
        Name = "cmdgrpeditor", ;
        Command1.AutoSize = .F., ;
        Command1.Top = 5, ;
        Command1.Left = 5, ;
        Command1.Height = 23, ;
        Command1.Width = 48, ;
        Command1.Caption = "\<Add", ;
        Command1.Name = "cmdadd", ;
        Command2.AutoSize = .F., ;
        Command2.Top = 5, ;
        Command2.Left = 53, ;
        Command2.Height = 23, ;
        Command2.Width = 48, ;
        Command2.Caption = "\<Save", ;
        Command2.ColorScheme = 2, ;
        Command2.Name = "cmdsave", ;
        Command3.AutoSize = .F., ;
        Command3.Top = 5, ;
        Command3.Left = 100, ;
        Command3.Height = 23, ;
        Command3.Width = 48, ;
        Command3.Caption = "\<Delete", ;
        Command3.Name = "cmddelete", ;
        Command4.AutoSize = .F., ;
        Command4.Top = 5, ;
        Command4.Left = 148, ;
        Command4.Height = 23, ;
        Command4.Width = 48, ;
        Command4.Caption = "E\<xit", ;
        Command4.Name = "cmdexit", ;
        Command5.AutoSize = .F., ;
        Command5.Top = 5, ;
        Command5.Left = 5, ;
        Command5.Height = 23, ;
        Command5.Width = 48, ;
        Command5.Caption = "\<Revert", ;
        Command5.Name = "cmdrevert", ;
        Command6.AutoSize = .F., ;
        Command6.Top = 5, ;
        Command6.Left = 53, ;
        Command6.Height = 23, ;
        Command6.Width = 48, ;
        Command6.Caption = "\<Modify", ;
        Command6.Name = "cmdmodify"
```

```
ADD OBJECT cmdgrpnavigator AS commandgroup WITH ;
        AutoSize = .T., ;
        ButtonCount = 4, ;
        BackStyle = 1, ;
        Value = 1, ;
        Height = 33, ;
        Left = 228, ;
        Top = 180, ;
        Width = 271, ;
        TabIndex = 9, ;
        BackColor = RGB(192,192,192), ;
        Name = "cmdgrpnavigator", ;
        Command1.Top = 5, ;
        Command1.Left = 5, ;
        Command1.Height = 23, ;
        Command1.Width = 66, ;
        Command1.Caption = "\<Top", ;
        Command1.Name = "cmdtop", ;
        Command2.AutoSize = .F., ;
        Command2.Top = 5, ;
        Command2.Left = 70, ;
        Command2.Height = 23, ;
        Command2.Width = 66, ;
        Command2.Caption = "\<Previous", ;
        Command2.Name = "cmdprevious", ;
        Command3.Top = 5, ;
        Command3.Left = 135, ;
        Command3.Height = 23, ;
        Command3.Width = 66, ;
        Command3.Caption = "\<Next", ;
        Command3.Name = "cmdnext", ;
        Command4.AutoSize = .F., ;
        Command4.Top = 5, ;
        Command4.Left = 200, ;
        Command4.Height = 23, ;
        Command4.Width = 66, ;
        Command4.Caption = "\<Bottom", ;
        Command4.Name = "cmdbottom"


ADD OBJECT command1 AS commandbutton WITH ;
        AutoSize = .T., ;
        Top = 144, ;
        Left = 288, ;
        Height = 27, ;
        Width = 59, ;
        Caption = "CHART", ;
        Name = "Command1"


ADD OBJECT txtcontractno AS textbox WITH ;
        Comment = "", ;
        ControlSource = "mainfha.contractno", ;
        Format = "!", ;
```

```
        Height = 23, ;
        InputMask = "GWA/999999", ;
        Left = 166, ;
        MaxLength = 10, ;
        TabIndex = 21, ;
        Top = 16, ;
        Width = 81, ;
        Name = "txtContractno"


PROCEDURE Init
        public modified

        modified = .f.

        public    mcontractno,mcontractor,mteam,msite,mhousetype,munits,;
                        mcontvalue,mblocks
ENDPROC


PROCEDURE Activate
        sele 1


        thisform.cmdgrpeditor.cmdadd.visible = .T.
        thisform.cmdgrpeditor.cmdmodify.visible = .T.
        thisform.cmdgrpeditor.cmdrevert.visible = .F.
        thisform.cmdgrpeditor.cmdsave.enabled = .F.


        thisform.cmdgrpnavigator.enabled = .T.
        Thisform.setall("Readonly",.T.,"Textbox")
        Thisform.setall("Readonly",.T.,"EDITbox")
        Thisform.setall("Readonly",.T.,"Combobox")
ENDPROC


PROCEDURE cbohousetype.InteractiveChange
        if thisform.cbohousetype.value = "Bakassi" then
          thisform.txtunits.value = 1
        endif
        if thisform.cbohousetype.value = "Bonny A" then
          thisform.txtunits.value = 4
        endif
        if thisform.cbohousetype.value = "Bonny B" then
          thisform.txtunits.value = 6
        endif
        if thisform.cbohousetype.value = "Badagry" then
          thisform.txtunits.value = 2
        endif
        if thisform.cbohousetype.value = "Masfa" then
          thisform.txtunits.value = 2
        endif
        if thisform.cbohousetype.value = "Maiwa" then
          thisform.txtunits.value = 1
        endif
```

```
        if thisform.cbohousetype.value = "Abriba" then
          thisform.txtunits.value = 1
        endif
        *thisform.refresh()
ENDPROC


PROCEDURE txtblocks.LostFocus
        thisform.txtunits.value = thisform.txtunits.value * thisform.txtblocks.value
        thisform.cmdgrpeditor.cmdsave.setfocus
        thisform.refresh()
ENDPROC


PROCEDURE txtblocks.InteractiveChange
ENDPROC


PROCEDURE cmdgrpeditor.cmdadd.Click
        APPEND BLANK

        modified = .f.
        Thisform.setall("Readonly",.F.,"Textbox")
        Thisform.setall("Readonly",.F.,"combobox")
        Thisform.setall("Readonly",.F.,"EDITbox")
        thisform.cmdgrpnavigator.enabled = .F.

        thisform.cmdgrpeditor.cmdadd.visible = .F.
        thisform.cmdgrpeditor.cmdmodify.visible = .F.
        thisform.cmdgrpeditor.cmdrevert.visible = .T.
        thisform.cmdgrpeditor.cmdsave.visible = .T.
        thisform.cmdgrpeditor.cmdsave.enabled = .T.

        *
        THISFORM.REFRESH()
ENDPROC


PROCEDURE cmdgrpeditor.cmdsave.Click
                        replace contractno with thisform.txtcontractno.value
                        replace contractor with thisform.txtcontractor.value
                        replace team with thisform.txtteam.value
                        replace site with thisform.txtsite.value
                        replace housetype with thisform.cbohousetype.value
                        replace units with thisform.txtunits.value
                        replace contvalue with thisform.txtcontvalue.value
                        replace blocks with thisform.txtblocks.value


        thisform.cmdgrpeditor.cmdadd.visible = .T.
        thisform.cmdgrpeditor.cmdrevert.visible = .F.

        thisform.cmdgrpeditor.cmdmodify.visible = .T.

        thisform.cmdgrpnavigator.enabled = .T.
        Thisform.setall("Readonly",.T.,"Textbox")
```

```
        Thisform.setall("Readonly",.T.,"EDITbox")
        Thisform.setall("Readonly",.T.,"Combobox")
ENDPROC


PROCEDURE cmdgrpeditor.cmddelete.Click
        store 0 to rep1
        rep1 = messagebox("Are you really sure ?", 36, "Want to Delete ?")
        if rep1 = 6 then
        DELETE
        PACK
        THISFORM.REFRESH()
        endif
        if this.parent.cmdadd.visible == .F.
                this.parent.cmdadd.visible = .T.
                this.parent.cmdrevert.visible = .F.
                this.parent.cmdsave.enabled = .F.
        endif
ENDPROC


PROCEDURE cmdgrpeditor.cmdexit.Click
        THISFORM.RELEASE()
ENDPROC


PROCEDURE cmdgrpeditor.cmdrevert.Click
        if modified == .f.
        GO BOTTOM
        DELETE
        PACK
        else

                        replace contractno with mcontractno
                        replace contractor with mcontractor
                        replace team with mteam
                        replace site with msite
                        replace housetype with mhousetype
                        replace units with munits
                        replace contvalue with mcontvalue
                        replace blocks with mblocks


        endif
        Thisform.setall("Readonly",.T.,"Textbox")
        Thisform.setall("Readonly",.T.,"EDITbox")
        Thisform.setall("Readonly",.T.,"Combobox")


        thisform.cmdgrpeditor.cmdadd.visible = .T.
        thisform.cmdgrpeditor.cmdmodify.visible = .T.
        thisform.cmdgrpeditor.cmdrevert.visible = .F.
        thisform.cmdgrpeditor.cmdsave.enabled = .F.


        thisform.cmdgrpnavigator.enabled = .T.
```

```
        THISFORM.REFRESH()
ENDPROC


PROCEDURE cmdgrpeditor.cmdmodify.Click

        Thisform.setall("Readonly",.F.,"Textbox")
        Thisform.setall("Readonly",.F.,"editbox")
        Thisform.setall("Readonly",.F.,"Combobox")

        thisform.cmdgrpnavigator.enabled = .F.

        modified = .t.
                        mcontractno = thisform.txtcontractno.value
                        mcontractor = thisform.txtcontractor.value
                        mteam = thisform.txtteam.value
                        msite = thisform.txtsite.value
                        mhousetype = thisform.cbohousetype.value
                        munits = thisform.txtunits.value
                        mcontvalue = thisform.txtcontvalue.value
                        mblocks = thisform.txtblocks.value



        thisform.cmdgrpeditor.cmdadd.visible = .F.
        thisform.cmdgrpeditor.cmdmodify.visible = .F.
        thisform.cmdgrpeditor.cmdrevert.visible = .T.
        thisform.cmdgrpeditor.cmdsave.visible = .T.
        thisform.cmdgrpeditor.cmdsave.enabled = .T.


        *
        THISFORM.REFRESH()
ENDPROC


PROCEDURE cmdgrpnavigator.cmdtop.Click
        GOTO TOP
        THISFORM.REFRESH()


        this.parent.cmdprevious.enabled = .F.
        this.enabled = .F.

        this.parent.cmdnext.enabled = .T.
        this.parent.cmdbottom.enabled = .T.
ENDPROC


PROCEDURE cmdgrpnavigator.cmdprevious.Click
        IF !BOF()
                SKIP -1
                this.parent.cmdbottom.enabled = .T.
                this.parent.cmdnext.enabled = .T.
                IF BOF()
```

```
                    GO TOP
                    this.parent.cmdtop.enabled = .F.
                    this.enabled = .F.

                    this.parent.cmdnext.enabled = .T.
                    this.parent.cmdbottom.enabled = .T.
                else

                    this.parent.cmdtop.enabled = .T.
                    this.enabled = .T.
                ENDIF
        ENDIF
        THISFORM.REFRESH()
ENDPROC


PROCEDURE cmdgrpnavigator.cmdnext.MouseDown
        LPARAMETERS nButton, nShift, nXCoord, nYCoord
ENDPROC


PROCEDURE cmdgrpnavigator.cmdnext.Click
        IF !EOF()
                SKIP
                this.parent.cmdtop.enabled = .T.
                this.parent.cmdprevious.enabled = .T.
                IF EOF()
                        GO BOTTOM
                        this.parent.cmdbottom.enabled = .F.
                        this.enabled = .F.

                        this.parent.cmdprevious.enabled = .T.
                        this.parent.cmdtop.enabled = .T.
                ENDIF
        ENDIF
        THISFORM.REFRESH()
ENDPROC


PROCEDURE cmdgrpnavigator.cmdbottom.Click
        GO BOTTOM
        THISFORM.REFRESH()


        this.parent.cmdnext.enabled = .F.
        this.enabled = .F.

        this.parent.cmdtop.enabled = .T.
        this.parent.cmdprevious.enabled = .T.
ENDPROC


PROCEDURE command1.Click
        do form formchart
ENDPROC
```

```
ENDDEFINE
*
*-- EndDefine: form1
**************************************************
```

FEDERAL HOUSING AUTHORITY

GWARINPA II PROJECT

QUALITY CONTROL CHART FOR BUILDING

REPORT NO:_____ LOCATION: ABUJA DATE: 29/02/

NAME OF CONTRACTOR	HOUSE TYPE	NO OF UNITS	VALUE OF CONTRACT	NO OF BLOCKS	STAGE OF WORK	NATURE OF DEFECTS	REMEDY	QUALITY GRADE	REMARK	NAME SIGNA
SITE 1B										
HALLMARK BUILDERS NIG. LTD.	Maiwa	5	50,082,300.00	5	Electrical	Broken Bulbs	Replace	B	Work in Progress	
ABILITY NIGERIA LIMITED	Bakassi	4	122,333.33	4	Structural	Weak Concrete	Refill	B	Abandoned site	
AKINTUNDE BUILDERS	Abriba	1	5,634,499.00	1	Electrical			B	Work in Progress	
SITE 2A										
LANDMARK VENTURES	Masfa	8	30,480,680.00	4	Structural			B	Work in Progress	
YK AND SONS LIMITED	Bonny A	20	543,444.00	5	Electrical			B	Work in progress	
JULIUS BERGER	Bonny A	40	96,734,442.00	10	Mechanical	Damaged pipes	Replace	B	Work in Progress	

Coordinator's Name & Sign

Approval by General Manager (PI)

LEGEND (Quality Grade)

A - Very Good
B - Good
C - Average
D - Poor

Group Leader's Name & Sign

Supervisor's Name & Sign

NAME OF CONTRACTOR	HOUSE TYPE	NO OF UNITS	VALUE OF CONTRACT	NO OF BLOCKS	STAGE OF WORK	NATURE OF DEFECTS	REMEDY	QUALITY GRADE	REMARK	NAM SIGN
ITE 4B										
YDNEY NIG. LTD.	Badagry	14	59,300,809.00	7	Electrical			B	Abandoned site	
LPAT VENTURES NIG. LTD.	Bonny B	30	56,600,300.00	5	Mechanical	Inferior pipes	Replace	B	Work in progress	
ANLAYO NIG. LTD.	Badagry	20	54,233,459.00	10	Electrical				Completed	

Coordinator's Name & Sign

Approval by General Manager (PI)

LEGEND (Quality Grade)

A - Very Good
B - Good
C - Average
D - Poor

Group Leader's Name & Sign

Supervisor's Name & Sign

FEDERAL HOUSING AUTHORITY

GWARINPA II PROJECT

PROGRESS REPORT CHART (BUILDING)

REPORT NO:_____ **LOCATION:** ABUJA **DATE:** 09/0

NAME OF CONTRACTOR	HOUSE TYPE	NO OF UNITS	VALUE OF CONTRACT	CERTIFIED TO DATE	BLOCKS% COMPLETION										REMARK	NAM SIGN
SITE 1B					BK.1	BK.2	BK.3	BK.4	BK.5	BK.6	BK.7	BK.8	BK.9	BK.10		
HALLMARK BUILDERS NIG. LTD.	Maiwa	5	50,082,300.00	10/10/99	A	A	A	A	A	A	A	A	A	A	Work in Progress	
ABILITY NIGERIA LIMITED	Bakassi	4	122,333.33	10/10/99	A	A	A	A	A	A	A	A	A	A	Abandoned site	
AKINTUNDE BUILDERS	Abriba	1	5,634,499.00	/ /	E										Work in Progress	
SITE 2A					BK.1	BK.2	BK.3	BK.4	BK.5	BK.6	BK.7	BK.8	BK.9	BK.10		
LANDMARK VENTURES	Masfa	8	30,480,680.00	10/10/99	A	A	A	A	A	A	A	A	A	A	Work in Progress	
YK AND SONS LIMITED	Bonny A	20	543,444.00	11/10/99	F	F	F	F	F						Work in progress	
JULIUS BERGER	Bonny A	40	96,734,442.00	10/10/99	A	A	A	A	A	A	A	A	A	A	Work in Progress	
SITE 4B					BK.1	BK.2	BK.3	BK.4	BK.5	BK.6	BK.7	BK.8	BK.9	BK.10		
SYDNEY NIG. LTD.	Badagry	14	59,300,809.00	03/02/99	B	B	B	C	B	B	B				Abandoned site	

LEGEND (Block Completion)

A - Sub Structure
B - Superstructure up to 1st floor slab
C - Superstructure up to 2nd floor slab
D - 2nd floor block work to head course
E - Roofing
F - Finishing

_____
Supervisor's Name & Signature

_____
Team Leader's Name & Signature

_____
Project Manager's Name & Signature

NAME OF CONTRACTOR	HOUSE TYPE	NO OF UNITS	VALUE OF CONTRACT	CERTIFIED TO DATE	BLOCKS% COMPLETION										REMARK	NAM SIGN
ALPAT VENTURES NIG. LTD.	Bonny B	30	56,600,300.00	10/10/99	A	A	A	A	A	A	A	A	A	A	Work in progress	
KANLAYO NIG. LTD.	Badagry	20	54,233,459.00	10/10/99	A	A	A	A	A	A	A	A	A	A	Completed	

LEGEND (Block Completion)

A - Sub Structure
B - Superstructure up to 1st floor slab
C - Superstructure up to 2nd floor slab
D - 2nd floor block work to head course
E - Roofing
F - Finishing

Supervisor's Name & Signature

Team Leader's Name & Signature

Project Manager's Name & Signature

FEDERAL HOUSING AUTHORITY

GWARINPA II PROJECT

SUMMARY OF COMPLETION STATUS TEAM1B

HOUSE TYPE	UNITS	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 - 89	90 - 99	REMARK
Maiwa	5	5	0	0	0	0	0	0	0	0	0	
Bakassi	4	4	0	0	0	0	0	0	0	0	0	
Abriba	1	0	0	1	0	0	0	0	0	0	0	
TOTAL	10	9.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

SUMMARY OF COMPLETION STATUS TEAM2A

HOUSE TYPE	UNITS	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 - 89	90 - 99	REMARK
Masfa	8	8	0	0	0	0	0	0	0	0	0	
Bonny A	20	0	0	0	0	0	0	0	0	0	20	
Bonny A	40	40	0	0	0	0	0	0	0	0	0	
TOTAL	68	48.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	

FEDERAL HOUSING AUTHORITY

GWARINPA II PROJECT

SUMMARY OF COMPLETION STATUS TEAM4B

HOUSE TYPE	UNITS	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80.- 89	90 - 99	REMARK
Badagry	14	0	14	0	0	0	0	0	0	0	0	
Bonny B	30	30	0	0	0	0	0	0	0	0	0	
Badagry	20	20	0	0	0	0	0	0	0	0	0	
TOTAL	64	50.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	