SUDANUNIVERSITY OF SCIENCE & TECHNOLOGY CIVIL ENGINEERING DEPARTMENT
MSC.PROGRAMME
CONSTRUCTION MANAGEMENT QUESTIONNAIRE

HOW GOOD IS THE QUALITY MANAGEMENT SYSTEM IN YOUR ORGANIZATION ?

How many of the following statements apply to your organization ? Not knowing the answer says something in itself .

Expand on each answer , giving examples of where the statement does or does not apply and give some thought as to what the significance of the answer means for your organization . What can be done to remedy the situation ?

Quality Position	**Applies ?** (Y/ N)	**Example**
No clear relation with Customer .		
No awareness of the cost Of quality .		
A suspicion that the work Force may be under-utilized .		
No real measurement of staff Performance .		
A need to understand the real Purpose of the organization .		
No clear picture of total rework .		
No description of output quality .		
Redundant procedures that need Updating .		
No standard operating model For departments .		
Difficulty in identifying internal Improvements areas .		

THE CRITICAL ISSUES

Several critical issues need to be addressed during the implementation process of TQM before entry can be gained into the self-improving cycle that is required of a total quality organization .

What are these issues for your organization ? What is preventing your organization from becoming a total quality organization and how can the problems be overcome ? In what order should the issues be tackled , and by whom ?

Critical Issue	Remedial Action	Responsibility	Priority

ALL – EMPLOEE QUESTIONNAIRE

1. Please give example of things that have gone wrong or cause problems in your job because of :

a. Poor information .
b. Poor procedures .
c. Poor tools .
d. Poor components .
e. Poor training .

2. In general , when you encounter these you usually :

a. Report them to your manager ?
b. Try to put it right yourself ?
c. Let it go ?
d. Write down full details .

3. What have you been told to do ?

4. How often have you been asked each of the following questions by a manager in the last 6 month ? (Please indicate number of times) .

a. What problems are you experiencing that prevent you from doing your job properly ?
b. What suggestions do you have for reducing these problems?
c. What suggestions do you have for improving either the way you do things or the things you do for customer or other departments ?

5.

a. Is your understanding of what your end customer wants :

POOR FAIR GOOD

(Please circle one)

b. How often do you discuss customer requirements with your boss ?

6. Do you agree or disagree with the following statements : (Circle one)

a. I get a fair day's pay for a fair day's work . Agree Disagree
b. I enjoy working here . Agree Disagree
c. Departments do not pull together . Agree Disagree
d. I know what people in other dept. do Agree Disagree
e. My boss sets a good example . Agree Disagree
f. There are too many meetings . Agree Disagree
g. Team work is encouraged . Agree Disagree
h. Most employees stay here a long time . Agree Disagree
i. I am told if I do a good job . Agree Disagree
j. I am told if I do a bad job . Agree Disagree

MANAGEMENT QUESTIONNAIRE

PART 1

Using the table below , list in order of importance your major internal and external suppliers of (material , services and information) .

How good is the supply (does it meet your requirements) ? How do you know ?

What problems do you experience with the supply and what channels are available for dealing with these problems ?

Supplier	Quality of Supply	Performance Measure	Quality Problems	Usually addressed by

PART 2

Using the table below , list the major functions or services provided by your department .

What is your success rate and how do you know ? (state source of information) .

What problems do you cause for your customers and how you tackle them ?

Function or Service	% of time successful	Performance Measured by	Problem Caused	Improvements Methods

CRITICAL SUCCESS FACTORS

List six critical success factors by which you can judge your organization performance . Examples might be Customer satisfaction level , Asset utilization , Unit cost , Delivery times , etc …
Against what targets will you benchmark performance ?
How will you measure performance ?
How will you get the data ?
What actions need to be taken to improve your organization's performance level for each success factor ?

Success Factor	Measure	Target	Current Achievement	Improvement Plan

DOCUMENTATION

How well do you document procedures within your organization?
Do people have clear written guidelines or instructions that enable them to control quality at every stage of the operation ?
Are the requirements clear at each stage and are adequate record kept ?

Use the simple worksheet below to make a brief assessment of some of the areas in your organization and to get a feel for the adequacy or otherwise of the quality system in place .

What does the assessment tell you about the management of quality within your organization ?

Department Function	Are the operating Procedures Documented	Are they up to date	Are quality requirements made clear	Are useful records kept?
Sales/customer				
Contracts				
Design				
Purchasing				
Process Step 1				
Process Step 2				

Process Step 3
Process Step 4
Maintenance
Final Inspection
Warehouse/
Transport

- Coordination and monitoring must be in the hands of one man .
- The system must take in to account all functions : design , manufacturing , subcontracting , storage , erection , installation commissioning , and particularly unusual client requirements .
- Site work instructions should be put on paper in simple form for operatives .
- Records are the objective evidence of meeting clients requirements , and need an efficient storage and retrieval system .
- When faults are discovered or defects are reported , they must be corrected by prompt and effective corrective action , that must extend , where appropriate , to design faults , and faulty products and services provided by subcontractors , corrective action should be recorded .
- Purchased material coming on a construction site is more likely to be checked against delivery documents for cost control than control of its quality . Civil engineering marking of products alone is likely to be of limited value as a mark of quality . Material supplied by the client must also be subject to control over quality .
- With latent defects liabilities becoming increasing onerous , handing over of completed works needs to be formalized , possibly modeled on the French reception , before the issue , for example , of a certificate of practical completion
- The system should include control over disposal of condemned i.e. non – conforming materials . Written control procedures are necessary to make it possible to establish quickly at all times whether material has been inspected , and approved or rejected .
- Procedures are required to protect and preserve product quality during handling and storage of materials on site , as BRE surveys have shown how wasteful and damaging handling and storage of materials can be on building sites .
- Periodic checks and systematic reviews are essential to maintain any quality system .

BS 8000: 1989–1990 WORKMANSHIP ON BUILDING SITES

Part 1: Code of practice for excavation and filing recommendations on basic workmanship .
Part 2 : Code of practice for concrete work .
Section 2.1 Mixing and transporting concrete .
Section 2.2 Site work with insitu and precast concrete .
Part 3 : Code of practice for masonry .
(covers task frequently carried out in relation to brick and block work . Does not cover stone work .)
Part 4 : Code of practice for water proofing 1989 .
(cover task carried out in relation to waterproofing in tanking , damp – proofing and roofing applications.)
Part 5 : Code of practice for carpentry , joinery and general fixings .
Part 6 : Code of practice for slating and tiling of roofs and claddings .
(Applies to the laying and fixing of clay and concrete tiles , nature and fibre – reinforced slates and their associated fitting and accessories .)
Part 7 : Code of practice for glazing .
(Does not cover off- site glazing ; includes specialist glazing techniques , roof glazing , glazing of furniture and fittings and use of profiled glass and glass blocks .)
Part 8 : Code of practice for plasterboard partitions and dry linings .
Part 9 : Code of practice for cement / sand floor screeds and concrete floor toppings .
Part 10: Code of practice for plastering and rendering 1989 .
Part 11 : Code of practice for wall and floor tiling :
Section 11.1 : Ceramic tiles , terrazzo tiles and mosaics 1989 .
(Applies to the fixing of ceramic tiles and mosaics to walls , floors and to the fixing of terrazzo tiles to floors) . Section 11.2 : Natural stone tiles
(cover granite , marble , travertine , slate , quartzite lime stone and sand stone)
Part 12 : Code of practice for decorative wall coverings and painting .
Part 13: Code of practice for above – ground drainage and sanitary appliances .
Part 14: Code of practice for below – ground drainage .
Code 15: Code of practice for hot and cold water services (domestic scale).

BRITISH STANDARD AIDS TO BETTER COMMUNICATION “

Selected list of British standard aimed at improvement of communication between participants in the design – construction process .

Glossaries :

BS 4422 : 1975 – 1990 Glossary of terms associated with fire .

BS 5408 : 1976 Glossary of documentation terms .

BS 6100: 1989-1991 Glossary of building and civil engineering terms .

Guides and Manuals :

BS 3700 :1988 Recommendations for preparing indexes to books , periodicals and other documents .

BS 4884 : 1973-1983 Specification for technical manuals .

BS 4940 :1993 Technical information on construction products and services .

Part 1 : Guide to initiation and commissioning ; 2 : Guide to content and arrangement ; and 3 : Guide to presentation (Headings for the arrangement and presentation of technical information are based on the 1993CIB Masterlist).

BSI PD 6501 : Part 2: 1984 The preparation of British standards for building and civil engineering .

Part 2 : Guide to preparation .

Table (7.1) CIB master list of headings for arrangement and presentation of information in technical documents for design and construction .

Heading	Information given under heading
0 Document	Title of document ; originator ; publication details .
1 Identification Brief description	Range of products or services Covered ; proprietary / trade Name ; manufacturer / supp--lire ; identification information , e. g material , intended use , finish , method of manufacture
2 Requirements	Requirements that the products of service will meet , such as technical specifications , regu--lations and standards .
3 Technical description	Intrinsic properties , e. g composition , size , mass , color .
4 Performance	Behavior of products or service in use : structural ; fire ; resist--ance to water , chemicals , mould etc ; thermal , optical , acoustic , electrical ; resistance to attack ; service life , durability , reliability .
5 Design work	Technical and economic suita--bility ; design methods and calculations ; limitations and precautions ;model specificati--on clauses ; examples of desi--gn details .
6 Site work	Handling , storage , installati--on , fixing , cleaning , protect--ion and other information of direct interest to builder .
7 Operation	Information for building user , including operation of compo--nents such as blinds, windows and security devices , commi--ssioning and operation of

	services and equipment .
8 Maintenance , repair , replacement , disposal .	Information required , after installation or completion of work , on cleaning , mainten--ance , servicing , repair , rep--lacement and disposal of used product .
9 Supply	Packaging , transport and del--ivery ; prices , condition of sale and other commercial and contractual information .
10 Manufacturer/ supplier/importer	Information about manufactu--rer / supplier/ importers adm--instrative and technical organization .
11 References	Related publications , e. g test reports and installation instru--ctions ; reference to other publications with addresses of manufacturers/ suppliers of associated products and servi--ces ; locations where example of installed work can be inspected .

BS 0 : A STANDARD FOR STANDARDS

The standard- making process is set out in BS 0 : A standard for standards , the most recent edition being published in 1991.

BS 0 : Part 1 : 1991 Guide to general principles of standardization .

General aims and principles of standardization ; the role and status of standards within the legal frame work .

BS 0 : Part 2 : 1991 Guide to BSI committee procedures , origin and objects of BSI , and organization and procedures governing the structure and construction of committees , preparation and maintenance of standards , and UK involvement in European and international standards work .

BS 0 : Part 3 : 1991 Guide to drafting and presentation of British standards .

Presentation , arrangement and drafting of British standards . Information on special consideration to be taken into account in drafting and defines details of style and typography .

Standards for building and civil engineering PD 6501 : 1982 .

In parallel with revisions to BS 0 , guidance on the preparation of British standards for building and civil engineering was issued in 1982 . Among other matters , PD 6501 looked at codes of practice , identifying two types , design codes and practice specifications , and dealt with the relationship between practice and product specifications . There was guidance on quality and grades , on basic data in standards , and , in Part 2 , on presentation .

CONSTRUCTIONS SPECIAL FEATURES:

* Designing and building are separate activities

. Each practitioner - directly or through a third party – having a separate contractual responsibility to the client , with design work usually more or less complete before the builder is chosen . Even when both tasks are entrusted to one firm , work may be split between professions , with much work on site subcontracted .

* Most building are one off products , erected on ground that , even on a single site, may vary in character every few meters . Testing of prototype is rare . Even when standard design are used , details are frequently modified to satisfy site , regulatory or client requirements .

* Manufactured materials , components , assemblies and mechanical equipment may have been tested and quality assured in factory ; but once brought on site they are likely to be handled , stored , assembled and installed under adverse weather and other conditions . Even when quality – assured components are used , and care is taken in their handling and installation , they may prove incompatible with their neighbors , the resulting chemical or mechanical interactions being a latent source of trouble .

* Construction workers move from site to site , changing employers from one job to the next . Types of works change as a scheme progresses as well as between jobs , as do size and skills required from the work force . Employer relations change , as do coverage , expertise , and quality of inspection and supervision . Quality of workmanship required from individual operatives is unlikely to be defined clearly .

* Building last for decades , more often than not for centuries , and parts of a building may have to be replaced at various times , receiving varying degrees of care , maintenance , repair and alteration during their life .

* Consequences of defective design , selection of unsuitable component or material , careless installation , inappropriate maintenance or repair , and misuse during occupation may remain latent for many years , only showing up to cause trouble following an exceptional “ overload “ such as windstorm , earthquake or gas explosion .

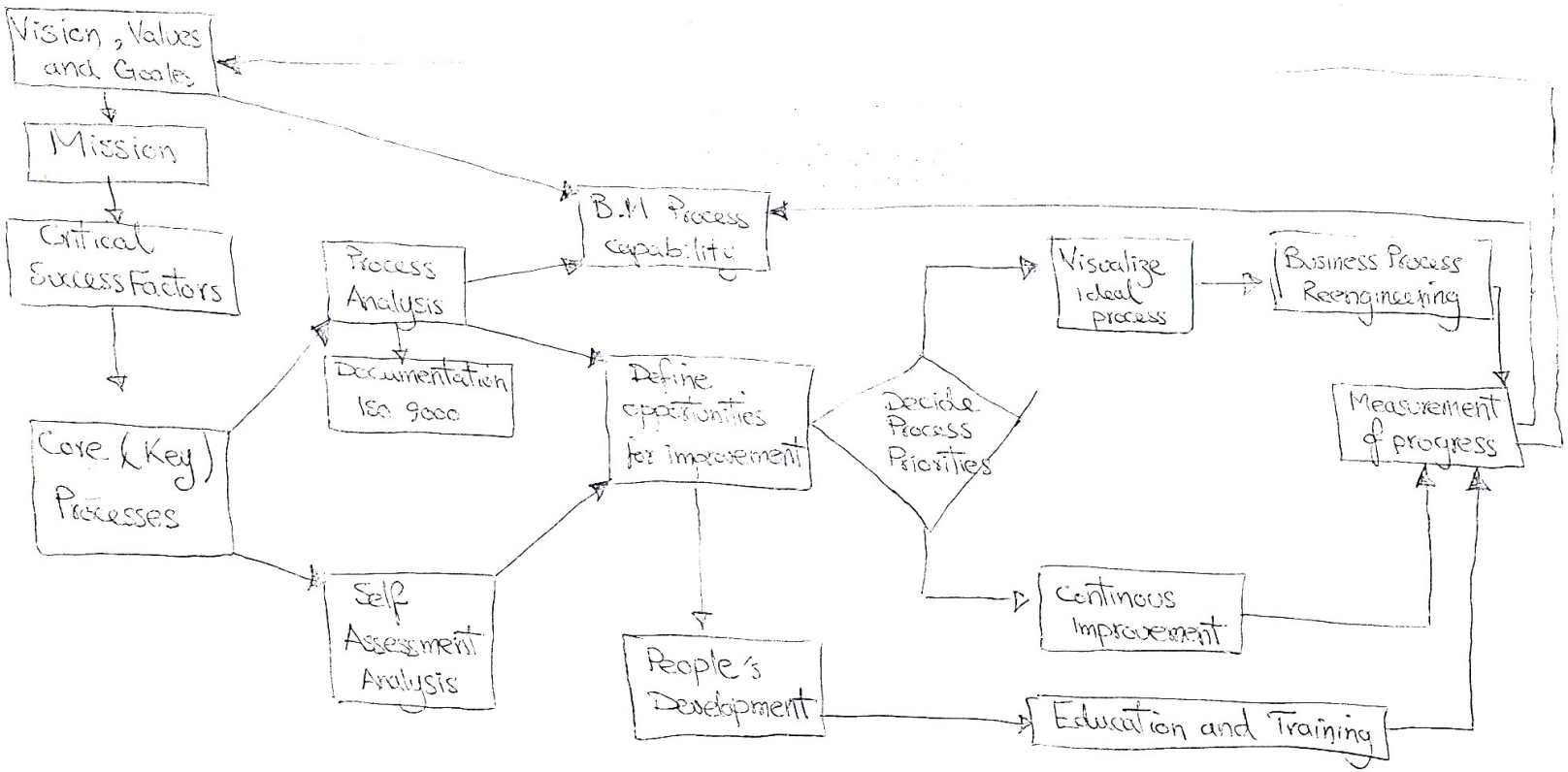
* Technical requirements of regulations implicitly assume that a building will remain for ever as built , and the law tends to place all time less responsibilities for good performance on the original designer and producer in some countries .

* Statutory authorities regulate design and construction in many ways and stages during the process , and their requirements may be of a detailed , prescriptive or a functional and general character , and may be followed by examination and , possibly , formal approval of the resulting work .

* Supervision and inspection on construction sites are not usually systematic. Site testing of work in progress is rarely undertaken except for certain civil engineering activities or when substandard work is discovered . When it is rectification is likely to be costly and completion delayed .
* When defects are discovered , remedial work is unlikely to be easy for more than one reason : it may be difficult to determine the cause of failure , and a wrong diagnosis could well aggravate the problem ; and neither the original work nor the changes resulting from the remedial work are likely to be properly recorded systematically .
* Environmental and user conditions vary within a single building , so the identification of defective components may prove troublesome ; and , as the building is likely to be occupied , remedial work will be difficult to organize .
* Because responsibilities of participants in the process of design , manufacture , assembly and supervision are complex and sometimes ill – defined in contract , when latent defects are discovered it may be necessary for an owner to start litigation to recover the cost of resulting damage . Court procedures then take precedence over unbiased and open fact-finding . Consequently feed back to other designers and producers is restricted .
* While in traditional construction a degree of robustness and structural redundancy were the norms , this may not be so under new , possible cost competitive conditions . A better understanding of how structure perform has enabled designers to work closer to limit states for reasons of efficiency and economy and , possible , as displays of technical skill . The traditional safeguards that protected practitioners of average competence are weakened
* In offices where the partners and managers are experienced and their technical and professional staff possess above average skills , and where there is effective quality management , risks maybe taken . But , in the hands of the less experienced , serious troubles may result even when products of good quality are used . Lastly , it is not always easy for a client who builds infrequently to identify which firms are experienced or possess above - average skills for a particular task .

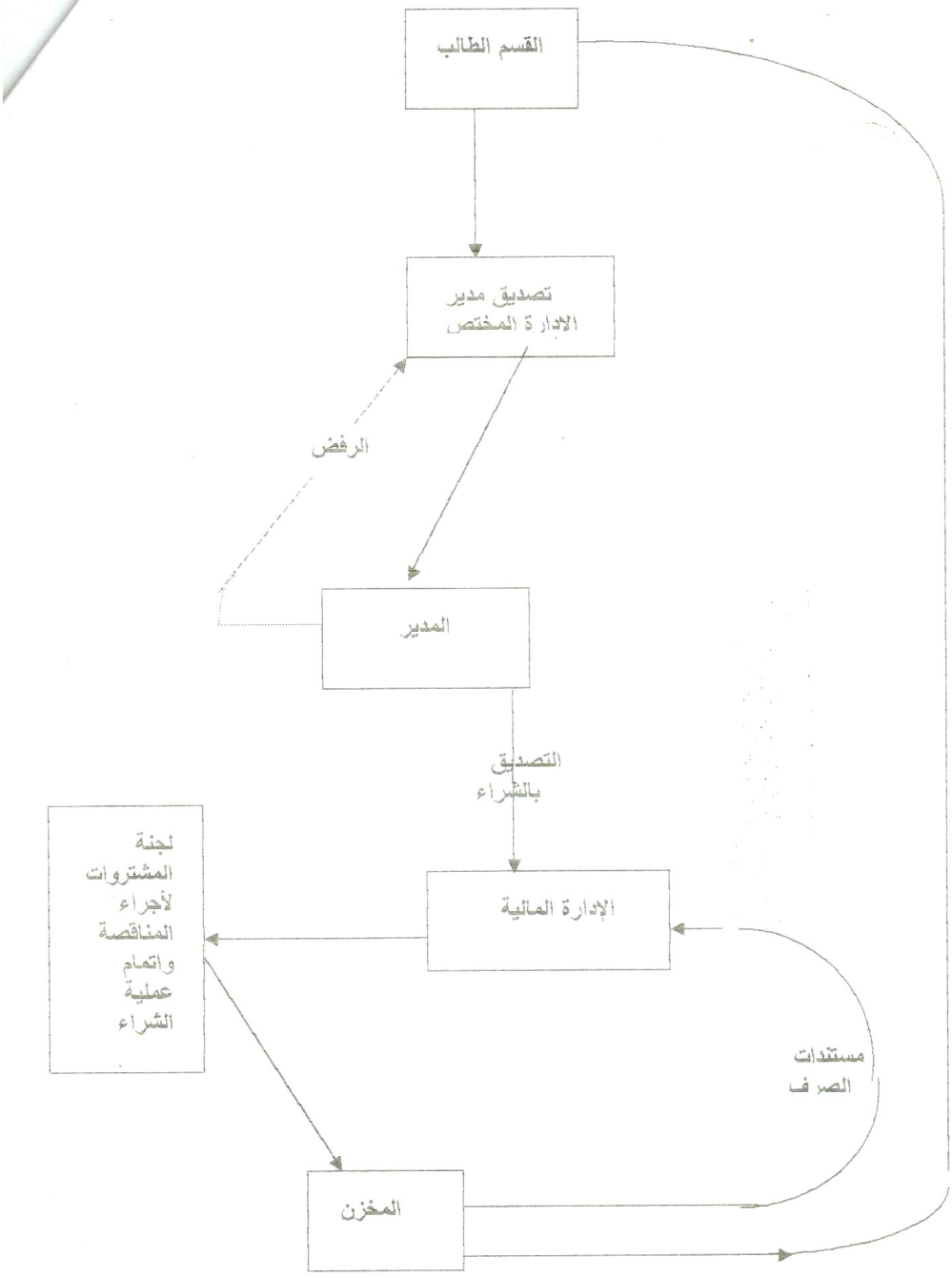
Flow chart of

Total Organization Excellance Model



بسم الله الرحمن الرحيم

الدورة المستندية لطلبات شراء المواد



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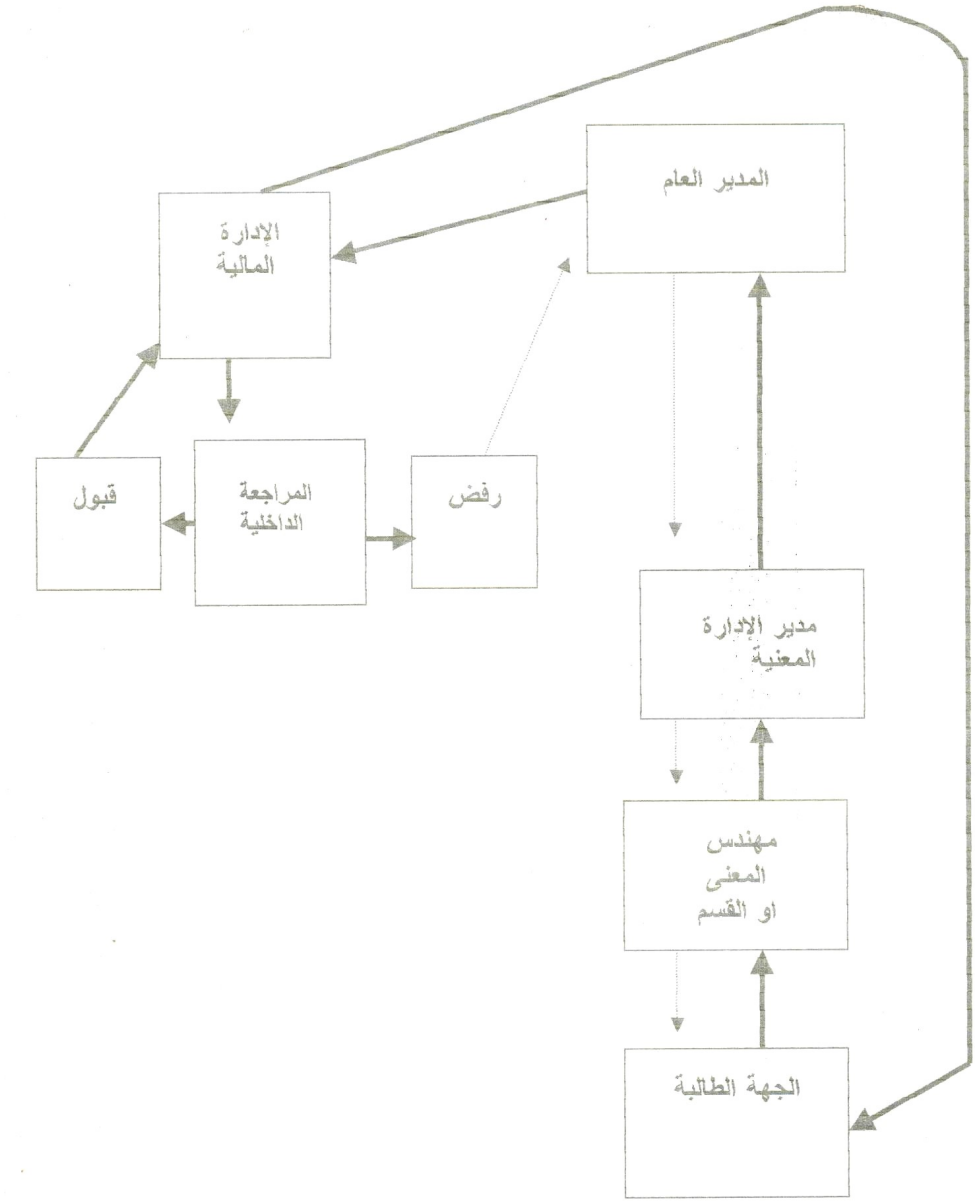
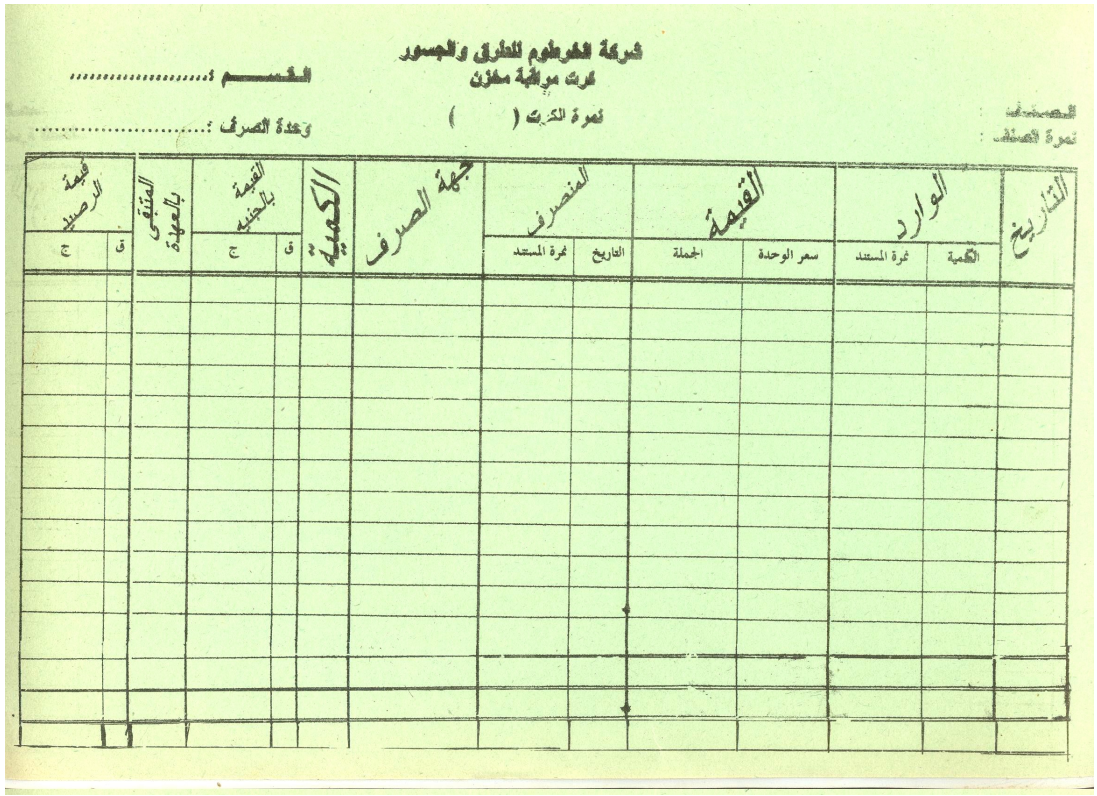
مخطط دورة المطالبات





شركة الخرطوم للطرق والجسور

كرت مراقبة مخزن

القسم : .....

الصنف :

نمرة الصنف :

نمرة الكرت ( )

وحدة الصرف : .....

التاريخ	الوارد		القيمة		المنصرف		جملة الصرف	الكمية	القيمة بالجنيه		المتبقى بالعهدة	قيمة الرصيد	
	الكمية	نمرة المستند	سعر الوحدة	الجملة	التاريخ	نمرة المستند			ق	ج		ق	ج

بسم الله الرحمن الرحيم

شركة الخرطوم للطرق والجسور

التقرير الشهرى لصرف الجازولين

موقع الصرف ..... لشهر .....

المعدة	١	٢	٣	٤	٥	٦	٧	٨	٩	١٠	١١	١٢	١٣	١٤	١٥	١٦	١٧	١٨	١٩	٢٠	٢١	٢٢	٢٣	٢٤	٢٥	٢٦	٢٧	٢٨	٢٩	٣٠	٣١	المجموع

امين المخزن بالموقع ..... مدير الموقع .....

التوقيع..... التوقيع .....

بسم الله الرحمن الرحيم

شركة الخرطوم للطرق والجسور

استمارة تسجيل الانتاجية الشهريةلعربات النقل التجارى لشهر .....عام .....

م	نمرة العربة	السعة	عدد الادوار	الكمية بالمتر المكعب	المسافة م/كلم	نوع المواد	السعر	القيمة الكلية	ملحوظات

الاســـــــــــم .....

التوقيـــــــــع.....

بسم الله الرحمن الرحيم

شركة الخرطوم للطرق والجسور

استمارة تسجيل منصرف اسبيرات وبطاريات الاليات الثابتة لشهر.....عام .....

م	نوع الالية	اسبيرات		بطاريات		ملحوظة
		عدد	السعر	عدد	السعر	

الاســـــــــــم .....

التوقيـــــــــع.....

بسم الله الرحمن الرحيم

شركة الخرطوم للطرق والجسور

استمارة تسجيل العقودات الشهرية لشهر .....عام .....

م	المشروع	المقاول	موضوع العقد	نمرة العقد	تاريخ بداية العقد	السعر	الكمية	المقدم المدفوع	الكمية التى وردت	مدة التنفيذ العقد	نسبة التنفيذ خلال الشهر	مدة التنفيذ المعدله

الاســـــــــــم .....

التوقيـــــــــع.....

بسم الله الرحمن الرحيم

شركة الخرطوم للطرق والجسور

التقرير الشهرى لادارة المشروعات

الفترة من .....الى .....

اسم المشروع :..... تاريخ بداية المشروع .....

م	البيـــــان	الوحدة	الكمية		السعر بالدينار	الجملة بالدينار	نسبة الانجاز	ملحوظات
			حسب العقد	المنفذه				
١	فتح المسار							
٢	النظافة ونقل الانقاض							
٣	تجهيز طبقة التاسيس							
٤	تجهيز طبقة التاسيس المساعد							
٥	تجهيز طبقة الاساس							
٦	بناء عبارات							
٧	رش طبقة الدهان							
٨	فرش الطبقة الاسفلتية							
٩	تركيب تلتوارات							
١٠	بناء طوب حجر							
١١	صب خرصانه							
١٢	طلاء بوهية							
١٣	اخرى							

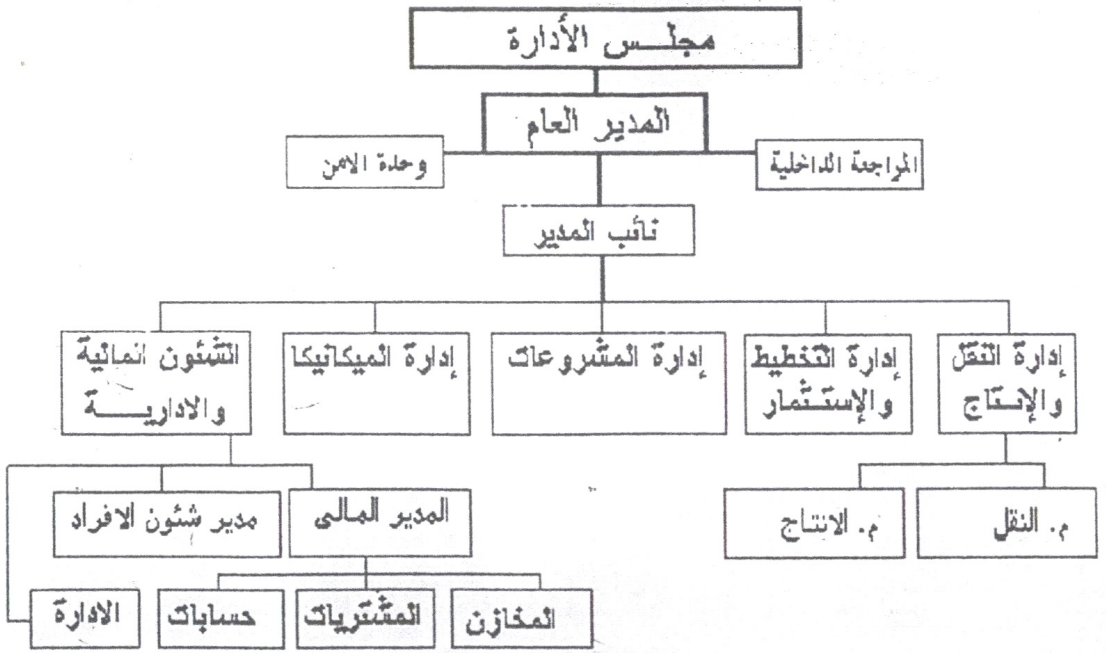
توقيع المهندس المقيم .....

توقيع مدير المشروع .....

بسم الله الرحمن الرحيم

شركة الخرطوم للطرق والجسور

الهيكل الوظيفي



الاولى الخاصة

الثالثة الخاصة/الاولى

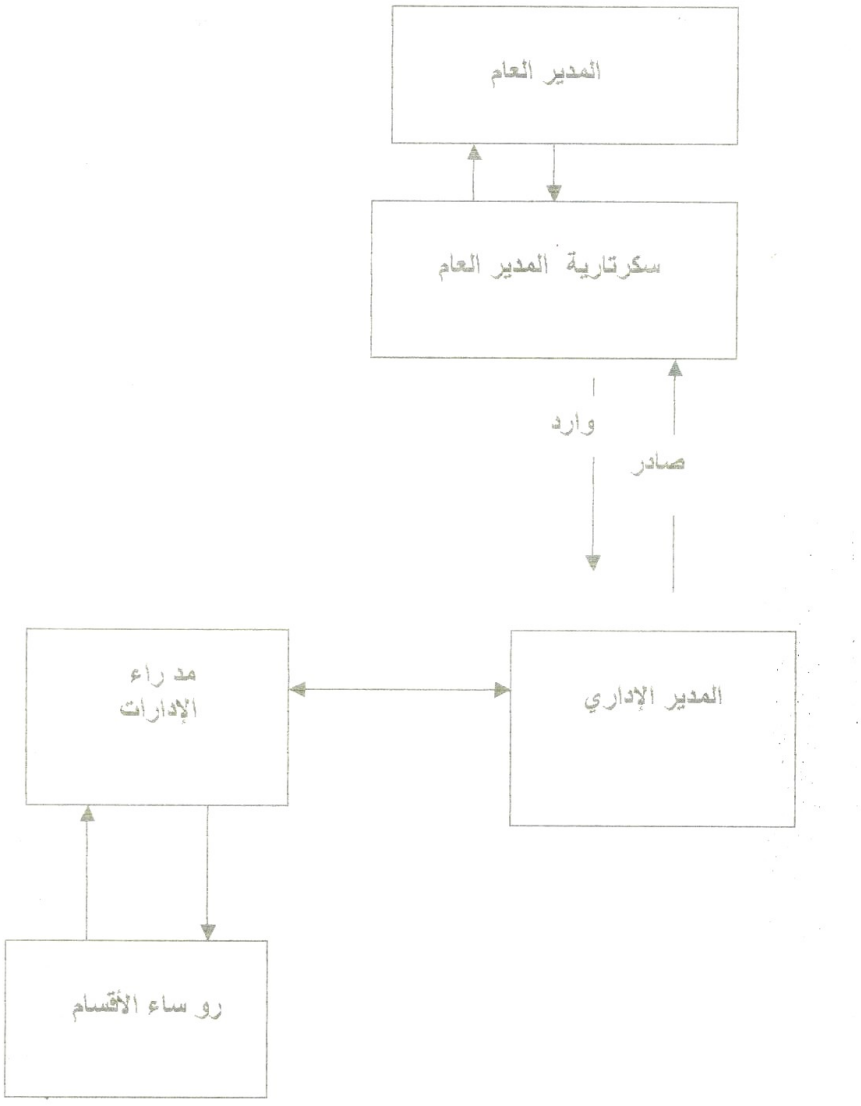
الثانية/ الثالثة

الثالثة/الرابعة

الرابعة/ الخامسة

بسم الله الرحمن الرحيم

مخطط دورة المكاتبات داخل الشركة



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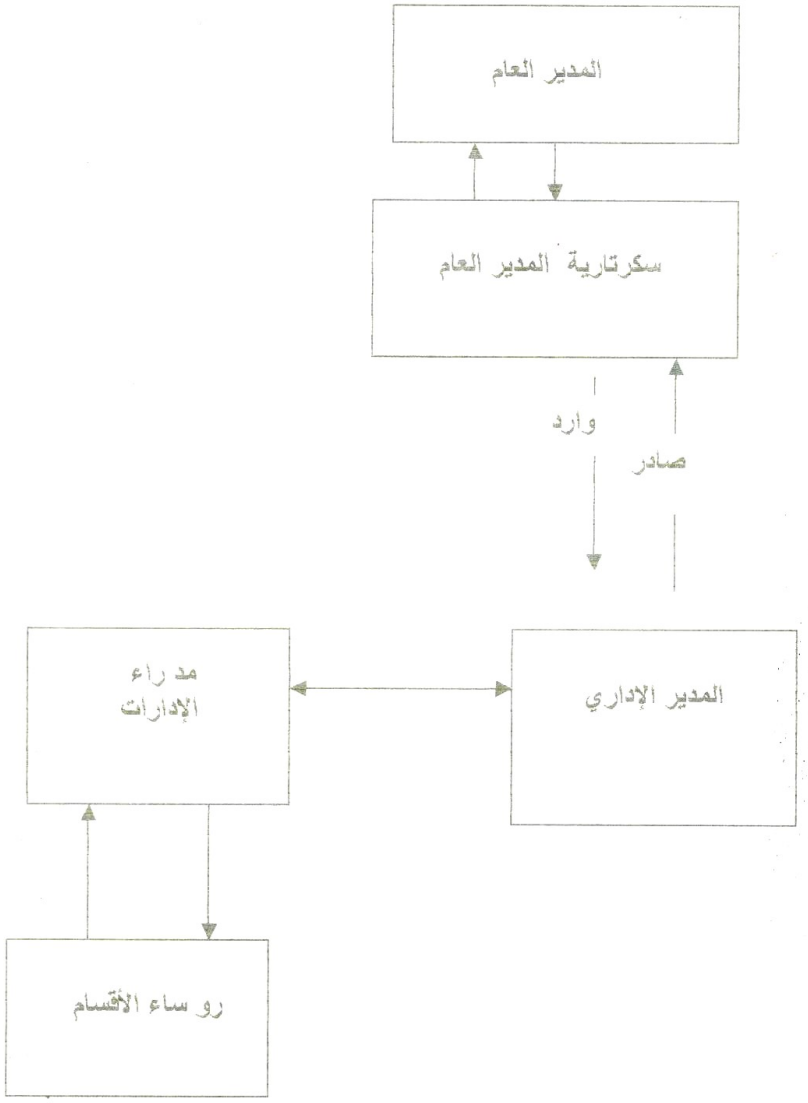
مخطط دورة المكاتبات داخل الشركة



بسم الله الرحمن الرحيم

الدورة المستندية لطلبات المواد الموجودة بالمخزن