List of References:

5. American Concrete Institute. A.C.I 121-98 ….. Quality Management Systems for Concrete Construction.
6. Internet Sources.
APPENDIX
INSTRUCTIONS
Please take a look at the following questionnaire and try to answer correctly and accurately, as many questions as possible. All the information gathered here will be kept strictly confidential and will be used only for research and analysis purposes without mentioning the person or company names.

Company Information.
Name of the company:
________________________________________________________________________

Nature of company (prime contractor/sub-contractor/consultant/supplier/vendor):
________________________________________________________________________

Size of the company (no. of persons): _____ (admin) _____ (technical)
Age of the company: ___________________________________________________________________

Ongoing/completed projects in Khartoum:
________________________________________________________________________

Your Knowledge of TQM
1. In your view, which of these words best define quality? (Not limited to one answer)
   - Expensive
   - Satisfying internal customer (within the organization)
   - Satisfying external customer (outside the organization)
   - Appearance
   - Increased profit
   - Value for money
   - Teamwork

2. Do you think that TQM will (or does) work in your organization?
   - Very well
   - To some extent
Can’t say

3. If you implementing a TQM program do you think could be beneficial to your organization?
- Yes
- No
- Can’t say

4. In your company, TQM would be used to improve:
- Project design
- Cost estimating
- Reduce claims
- Increased market share

- **Your Perception of Quality**

5. What is your organization’s perception of quality?
- Elimination of defects
- A tool to increase profits
- A competitive advantage
- Others (please specify)

6. How would you rate the importance of product/service quality?
- Very important
- Important
- Not important

7. How would you rate the significance of customer satisfaction?
- Very important
- Important
- Not important

8. Please rate the potential for improvement within the following processes:
(Scale 1 to 5, 1: Low 5: High)

<table>
<thead>
<tr>
<th>Process</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site supervision</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Redesign</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Testing procedures at job sites</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Certification of material</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Administration of change orders</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Close-out of projects</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>On-site safety</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Personnel management of employees</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
<tr>
<td>Coordination with other members of a project</td>
<td>5 – 4 – 3 – 2 – 1</td>
<td></td>
</tr>
</tbody>
</table>
9. Please rank in order of importance the following in the project (1, 2, 3, 4, 5):
   - Cost :____
   - Scope :____
   - Time (Schedule) :____
   - Quality :____
   - Safety :____

10. Do you set your quality goals to the level of?
   - The leading company in your field
   - The competition in general
   - To a level set internally
   - Other (please specify)

• Data Acquisition Method

11. Do you collect data to measure the performance of operations?
   - Yes
   - No

12. How does your organization solve problems?
   - Assign individual to solve
   - Set up a multi-disciplinary team for each problem
   - A permanent team is available
   - Other (please specify)

13. Do you have a system for gathering customer suggestions?
   - Yes
   - No
   - Can’t say

14. If yes, what system do you have?
   - Not measured
   - Questionnaire surveys
   - By the number of complaints
   - Other methods (please specify)

15. Do you have a system for gathering employee suggestions?
   - Yes
   - No
   - Can’t say
16. Are employees empowered to make significant changes to operations?
- Fully empowered
- Only key personnel are empowered
- Empowerment is not needed
- Can’t say

17. Defects in services are identified and subcontractors are required to pay for or correct them:
- Yes
- No
- Can’t say

**Quality in your Organization**

18. Has your organization developed a clear definition of quality?
- Yes
- No
- Can’t say

19. If yes, Percentage of employees who are aware of the importance of quality?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>0-20%</th>
<th>21-40%</th>
<th>41-60%</th>
<th>61-80%</th>
<th>81-100%</th>
</tr>
</thead>
</table>

20. Does your organization have a quality improvement program?
- No
- Such a plan is under consideration
- A quality improvement program has been implemented recently
- A quality improvement plan has been a part of corporate policy for some time now

21. What type of quality improvement program do you have?
- Total Quality Management
- ISO 9000
- Quality Control / Quality Assurance

22. Which of the following factors provided the motivation to start TQM?
- Pressure from competitors
- Demanding customers
- Your company’s Chief Executive
- Environmental issues/considerations
- Need to reduce costs and improve performance

23. Your organization’s quality improvement program can be described as:
- There is no formal program
- Periodic short-range solutions or motivational program
A formal program is underway with widespread employee awareness
Others (please specify)

24. Does your quality improvement plan have the full support of top management?
   - Yes
   - No
   - Can’t say

25. The major objectives of your quality programs are:
   - Increase productivity
   - Cost reduction
   - Involvement of employees in the quality building effort

26. Steps taken in your quality improvement plan include:
   - Organized a multi-disciplinary team
   - Data has been collected to measure the process
   - An internal awareness program is underway
   - An educational program has been implemented
   - Quality problems have been identified
   - Have defined benchmarks for improvement

27. After the implementation of your quality improvement program, service/product quality has:
   - Improved
   - Remained the same
   - Decreased

28. After the implementation of your quality improvement program, relationship with your customers and suppliers has:
   - Improved
   - Remained the same
   - Decreased

• Training

29. Is formal training in TQM or other quality improvement philosophies given to employees?
   - No training is given
   - Some training is available
   - A formal training program is in effect
   - Other (please specify)

30. Training currently emphasizes:
   - Process control
   - Statistical analysis
Data gathering & analysis
Team work
Communication
Customer satisfaction

**Others**

31. **Obstacles in the implementation of TQM program**
- Changing behavior and attitude
- Schedule and cost treated as the main priorities
- Emphasis on short-term objects
- Lack of education and training to drive the improvement process
- Too much documents are required (Lack of documentation ability)
- Lack of top-management commitment/understanding
- Lack of employees’ commitment/understanding
- Tendency to cure symptom rather than get to the root cause of a problem
- Lack of expertise/resources in TQM
- Current tendering/bidding climate