APPENDIX - I
QUESTIONNAIRE – I

The various factors that are relevant to an organization practicing TQM (or aiming to achieve TQM) have been identified through extensive literature survey. As practicing managers, I request you to indicate to what extent, these are practiced in your organization.

1. Commitment of the top management to the quality programme.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high

2. Extent to which quality goals achieved are based on the quality policy.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high

3. Degree to which the top management is dynamic in leading the quality programme.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high

4. Extent to which the management adopts quality management as a competitive strategy.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high

5. Extent to which the ‘quality mission’ forms the basis of strategic planning and decisions making.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high

6. Willingness of the top management to allocate adequate resources and time for quality improvement efforts.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high

7. Level of positive attitude of top management towards implementation of quality standards.
   1 =Extremely low, 2 =Very low, 3 =Low, 4 =Med/Satisfactory, 5 =High, 6 =Very high, 7 =Extremely high
8. Willingness of the top management to identify and remove the root-causes of problems.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high


1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

10. Extent to which the top management assigns importance to customer satisfaction.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

11. Necessity for the presence of a quality department in the organization.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

12. Degree to which the employees accept quality as a strategic weapon to gain competitive advantage.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

13. Degree to which the employees realize the importance of customer satisfaction in achieving quality.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

14. The extent to which the employees believe in ‘doing things right first time and every time’.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

15. Support and co-operation of the employees towards the implementation of quality standards.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

16. Existence of an organizational structure, which can minimize bureaucracy.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

17. The level of trust and openness among employees.
18. The level of openness and trust between employees and management.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

19. The level of interaction between the project team members and their project manager.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

20. The level of co-ordination between project teams and top management.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

21. The level of co-ordination between project teams and customers.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

22. Attractiveness of salary and compensation paid to the employees.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

23. Degree of respect and fairness in treatment which the employees get within the organization.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

25. Presence of incentive schemes based on performance, to motivate employees.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

26. Extent to which achievements in quality are recognized and rewarded.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

27. Extent to which the salaries are paid in-time.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

28. Presence of help/service teams to help the employees.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

29. Extent to which duties and responsibilities of employees are specified clearly.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

30. Presence of an organizational structure, which permits an easy, quick and effective communication.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

31. The degree to which customer feedback is used as the basis of quality improvement.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

32. The level of customer involvement during the specification and design stages of the housing project.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

33. The level of customer involvement during the construction stage of the housing project.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

34. Extent to which the organization encourages interaction between the customers and the employees.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

35. Extent to which service is provided after project completion.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

36. Extent to which attempts are made to satisfy the explicit, implicit, and delight needs of the customers.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

37. Extent to which the key processes that are critical to the project are regularly monitored and evaluated.
38. The level of systematic documentation of procedures and processes.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
39. The degree to which the processes are made defect-free.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
40. The emphasis given to the development of procedures to reduce the project time.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
41. Extent to which costs due to defects are evaluated at various stages or the project.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
42. Extent to which the total efforts (i.e., number of man-days) for a project are systematically assessed.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
43. Extent to which costs due to the introduction of quality standards (such as ISO) are systematically assessed.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
44. Extent to which the scheduled completion date and duration for each activity is systematically assessed.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
45. Extent to which the savings due to the implementation of quality standards is systematically measured.
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
46. Extent to which adherence to quality is ensured at every stage of project
1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/ Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
47. Extent to which employees are treated as long-term assets of the organization.

48. Extent to which steps are taken to recruit / select employees who have a quest for excellence in whatever they do.

49. Effectiveness of strategies adopted for retaining talented and experienced people.

50. The degree to which the employees are trained in team building and group dynamics for achieving the quality mission.

51. The degree to which the employees are trained for developing their communication skills (written and verbal).

52. The degree to which the employees are trained for developing their diagnostic and problem solving skills.

53. The level of training of employees in quality management systems such as ISO 9000, etc.

54. The level of training of employees in skills related to the monitoring and control of project management activities.

55. The extent to which the employees are trained to identify and assign the right job for each person.

56. The degree to which the employees are trained in latest technology.

129
1. The degree to which the employees are trained in using metrics for quality improvement.

2. The extent to which steps are taken to assess the need for educating and training the employees on practices necessary to achieve quality of products/services.

3. The level of educating and training the employees in assessing the cost-of-quality and return-on-quality.

4. The degree to which the employees are given freedom and authority for operational independence and experimentation with respect to project management activities.

5. The extent to which the innovative ideas and suggestions of employees are encouraged and rewarded.

6. The extent to which the employees are given freedom to express their opinions, comments and criticisms on organizational functioning.

7. The extent to which the involvement of team-members at various stages in the project is encouraged.
65. The degree to which the employees are given freedom and authority to satisfy the customer's needs.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

66. The extent to which the organization accepts 'continual improvement' as a long-term strategy for quality improvement.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

67. The extent to which continual improvement is adopted for improving techniques.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

68. The extent to which proactive correction is practiced rather than reactive correction.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

69. The degree to which customer feedback is sought and used for quality improvement.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

70. The extent to which the aspiration for quality improvement dominates the need for immediate results.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

71. Emphasis on benchmarking the quality standards (such as ISO).

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

72. Emphasis on benchmarking the compensation (pay and allowances) given to the employees.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

73. Emphasis on benchmarking the HRM practices in the organization.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

74. Emphasis on benchmarking the Infrastructure and facilities provided.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
75. Emphasis on benchmarking the quality culture in the organization.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

76. Adequacy of construction hardware facilities provided.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

77. Adequacy of computerization done in the organization

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

78. Availability and access to data related to all the projects completed during the past.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

79. The extent to which quality goals, strategies, and plan of action are perceived in the same way, by both management and employees.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

80. The extent to which the customer-contact personnel communicate with the middle and top management, on matters related to customer requirements and satisfaction.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

81. The overall effectiveness of communication process in the organization (in terms of quickness and completeness).

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

82. The extent to which reports on the effectiveness of quality management programme are communicated to the employees.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

83. The extent to which duties and responsibilities of each employee are made clear to him/her.

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high

84. The level of motivation and initiative among employees.
85. The level of desire shown by employees for achieving career advancements.
86. The level of enthusiasm shown by employees for learning new technologies.
87. The level of willingness shown by employees to work hard.
88. The willingness shown by employees to co-operate with other team members.
89. The level of overall satisfaction among the employees.
90. The overall level of commitment and loyalty shown by the employees.
91. The overall level of interpersonal relationships among the project team members.
92. The overall level of employee’s attitude towards satisfying the customer’s needs.
93. The overall response to cultural change, among the employees.
94. The extent to which risks involved, due to changes in technology, is foreseen and considered during the development of the project.
95. The extent to which people are trained in multiple technologies (i.e., multi-skilled employees) so that they can act as substitutes in case of emergency

1 = Extremely low, 2 = Very low, 3 = Low, 4 = Med/Satisfactory, 5 = High, 6 = Very high, 7 = Extremely high
QUESTIONNAIRE - 2

Instrument to measure the level of operational performance indicators in housing industry (from the perspective of the customers)

The instrument to measure the developers’ perception of the actual level of operational performance indicators with respect to 16 items (corresponding to 2 factors) is shown below. The respondents have been requested to indicate their perception on the following 7-point Likert scale.

1 = Extremely Low, 2 = Very Low, 3 = Low, 4= Medium / Moderate, 5 = High, 6 = Very High, 7 = Extremely High

Product Attributes (PA)

- Maintainability: Degree to which the maintenance is taken care of.
- Expandability: Ease with which the dwelling units can be upgraded.
- Modifiability: Ease with which changes can be made in the near future.
- Documentation: Degree to which the various procedures and techniques are standardized.
- Aesthetics: Degree to which the house appears to be attractive to the clients.
- Availability: Degree to which the house is available for its intended use.
- Serviceability: Degree to which the developers provide the right services at the right time.

Return on Quality (RQ)

- The overall level of customer/client satisfaction.
- The overall level of employee satisfaction.
- The ability to reduce repairs
- The ability to complete the projects within scheduled time.
- The ability to complete the projects within budget.
- The overall employee attitude towards satisfying the customers/users.
- The overall satisfaction regarding company image.
- The level/frequency of complaints arisen in the constructed units.
- The ability to improve customer/client satisfaction.
SURVEY

What do you mean by Quality of Housing? What are the various aspects that come into your mind when you say that a particular house is of good quality? How important are each of these aspects? This survey attempts to find an answer to the above questions.

Please indicate your views regarding the importance of the below listed parameters as applicable to housing quality (please put tick \(\sqrt{\text{ }}\) in most appropriate box against each aspect listed)

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<tr>
<th>Sl. No.</th>
<th>Aspects</th>
<th>Highly Significant</th>
<th>I will definitely consider</th>
<th>I will go for it</th>
<th>It is welcome</th>
<th>I can compromise</th>
<th>Not an important consideration</th>
<th>Not at all significant</th>
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<td>Aluminium frames for windows</td>
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<td>Central courtyard for the house</td>
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<td>Garage with lock and key</td>
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<td>House built on reclaimed area</td>
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<td>Provision to build additional room</td>
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<td>Proximity to Bank (1 km)</td>
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<td>Proximity to hospital (within 2 km)</td>
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<td>Proximity to market place (1 km)</td>
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<td>Proximity to place of worship</td>
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<td>Proximity to Post Office (1 km)</td>
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<td>Proximity to school (2 km)</td>
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APPENDIX- II

LIST OF PUBLICATIONS


5. The Kerala Building Centre Movement- Nirmithi Kendra, All India People Technology Congress, Calcutta, February, 2007

6. Assessment of Housing Quality, Architectural Engineering Division, Journal of Institution of Engineers (I) (Under review)