CHAPTER 7

NIRMITHI KENDRA - THE ORGANISATION

This chapter deals with the study of Nirmithi Kendra as an organization. This is done in two directions; one leading to organizational excellence and other towards TQM.

7.1 INTRODUCTION

Various activities in an organisation are in essence dynamic processes linked to and simultaneously influencing economic and social development. It is not only the market which calls for changes, for new products, for different levels of quality or for price reductions. There exist other developments which revolutionise organisations, technologies, structures and habits. In any enterprise therefore, be it public or private, there is constant need for change. The changes involved, particularly those anticipating or influencing the future, are normally the basis of corporate development and modernisation policy of an enterprise. Many of the difficulties or crises of an enterprise stem from the lack of modernisation or of adjustments to changing conditions. Sometimes they also stem from an error in the initial feasibility study, but in many cases, the cause will be an absence of a forward looking perspective i.e. a wrong or non-existent strategic approach.

7.2 STUDY METHODOLOGY

The study of Nirmithi Kendras at the organisational level was first carried out. Nirmithi Kendras at Trivandrum, Kollam, Trichur, Cochin and Calicut were studied in detail. These included the study of their operations, working policies, organisational culture and approaches to TQM. A brief description about the genesis, objectives, structure and activities of the Nirmithi Kendras is first presented. This is followed by a study as to how the Nirmithi Kendras answer certain basic norms for organisational excellence.

The effect of Quality Certification for Housing Industry has already been discussed in chapter 4. This study was extended to the Nirmithi Kendras. The findings have been presented in the latter half of this chapter. Conclusions based on these studies are also discussed.
7.3 NIRMITHI KENDRAS

The origin and development of the Nirmithi Kendras (NK) in Kerala is comparable to an obscure trickle in the mountains becoming a river which meanders through the plains to the sea. It was started as an organisation to bring the fruits of research from lab to land by exposing the local builders – the masons and carpenters at the village level- to the innovations in the housing techniques. Rural masons and carpenters, school dropouts, unemployed matriculates and a cross section of rural youth were trained in low cost housing techniques. Campaign through publicity and training were the means employed for the propagation of alternative technologies. Low cost house built with alternative materials and methods with the supervision of experts from National Building Organisation (NBO), Structural Engineering and Research Centre (SERC), Central Building Research Institute (CBRI), Housing and Urban Development Corporation (HUDCO) and other research institutions attracted the attention of policy makers of State and Central Governments.

As a result, the first Nirmithi Kendra was set up at Kollam, Kerala in 1985. This was intended as an institutional arrangement to back up the critical areas such as:

⇒ Availability of adequate number of trained construction work force in various trades.
⇒ Upgrading skills from the then existing practices to cost effective technologies and R&D inputs.
⇒ Adequate supply of building materials.

The successful working results of the Kollam Kendra blossomed into a national network of building centres. HUDCO being a national level techno-financing institution took the lead role in setting up this network of centres through which transfer of technology from laboratory to field as well as training of artisans were carried out. A total of 535 building centres were thus set up all over India. Nirmithi Kendras were set up in all 14 districts of Kerala. The Kerala State Nirmithi Kendra (KESNIK) was also set up as an apex body to plan, co-ordinate, regulate and monitor the activities of the district Nirmithi Kendras. KESNIK has 10 regional centres and 4 panchayat centres. Building materials are being produced in eight out of the ten KESNIK centres.
7.3.1 Objectives

The following were the major objectives set

⇒ To serve as a seminal agency to generate and propagate innovative ideas on housing.

⇒ A research and development institution as well as a clearing house of information and data bank which would bring the fruits of research from lab to land.

⇒ A production centre to prefabricate standardized housing materials. Nirmithi Kendras act as a chain for retail outlet of housing materials.

⇒ A training house to impart skills to local workmen and create a cadre of traditional workers.

⇒ A nodal agency to serve as a catalyst in the field of housing ensuring horizontal co-ordination in implementation of housing programme.

⇒ Chain of retail outlets for low cost house building materials.

⇒ R&D extension institution and consultant in the field of housing.

7.3.2 Organisational set up

The Nirmithi Kendras are registered under the Charitable Societies Act. NKs meet their financial needs by tie-up with various training, employment generation and rural development schemes with programmes for production of building materials and construction of low cost houses. Agencies like CAPART and HUDCO provided liberal financial support.

![Organisational Setup of Nirmithi Kendra](image)
The management of the Kendra is done by a Governing body (14 members) with District Collector as chairman. The executive committee (5 members) looks after the day to day affairs of the Kendra and take decisions regarding staff appointments, etc. The Executive committee functions as the decision maker while the employed staff performs the activities.

The typical organizational set up of Nirmithi Kendra, Kollam is shown in fig. 7.2

7.3.3 Activities of the Kendras

Nirmithi Kendras work as autonomous bodies which are free from bureaucratic procedures and consequent delays. NKs organise training programmes to those involved in construction and also provide consultancy and guidance for the use of Cost Effective and Environment Friendly (CEEF) technology and materials. These centres also promote research in the area of low cost building materials and appropriate technology.

Training Programme: Regular training programmes of durations ranging from 3 to 4 months are conducted in batches of 20-30 people. Adequate preference is given to youths belonging to scheduled caste. The trainees are selected through an interview conducted by the selection committee (consisting of nominee of District Development Officer, Dist. Planning officer and Secretary, Nirmithi Kendra). These are organized under the special assistance for SC &ST as part of schemes like RLEGP, NREP, and TRYSEM and also by HUDCO. After training, most of the trainees are being absorbed into the projects of the Kendra.

Training programmes of the NKs were very effective. Large number of youngsters – both men and women - was given training for building material production and building construction. Masons and carpenters working with conventional materials and methods were also given training in innovative methods of building construction. The trained youths were encouraged to form Nirmithi Rural Housing Corps or Nirmithi Upakendras to undertake building construction using low cost materials and techniques. NKs provided technical and managerial assistance to the Upakendras.
concentrates on construction of houses in inaccessible tribal areas, fishermen colonies, SC habitats, and in area predominantly occupied by coir workers, beedi workers, etc.

Public buildings constructed by the NKs helped to remove the general misconception that low cost buildings are meant only for the poor. Nirmithi Kendras constructed several prestigious buildings like the office building of Cochin University of Science and Technology, hospitals, school buildings, TV relay stations, village offices, hostels etc. throughout Kerala. Several private buildings both residential and non-residential buildings were constructed at less than the prevailing market rates.

**Work Management**

The compact team of working staff kept manpower costs low. Jobs were taken on a turnkey basis without middlemen and subcontractors thereby eliminating middlemen’s profit. The Nirmithi construction style is an amalgamation of traditional architecture with the necessary frills of modern living. The CEEF technology adopted by Nirmithi yields an average of 30% reduction in construction cost for all types of buildings. This technology was well recognised by the United Nations Centre for Human Settlement (UNCHS) at the Habitat II conference at Istanbul, Turkey in June 1996.

Nirmithi Kendra’s requirements of fixed and working capital are met from various sources like grants, loans, project advances and profit. Detailed studies were conducted regarding the various projects so far under taken by the Kendra. These studies revealed the following problems encountered by the Kendras.

1. Projects are not completed within the stipulated time due to which there are costs over runs.

2. Delays in getting the funds for construction as well as delays in handing over the land by concerned agencies to the Kendra. (Normally because of poor coordination between the agencies involved)

3. There is severe shortage of regular staff. Hence it becomes necessary to employ hired labourers and / or other technical staff which become more expensive than employing regular staff. At the same time it prevents the Kendra in taking up projects in a planned manner.
4. Too much guidelines and controls have been stipulated from the state Nirmithi Kendra for appointment of staff and thereby the autonomy for the unit gets reduced.

More than 75% of the job is from Government/agencies funded by Government where there are limitations in seeking good profit margins. This makes the Kendra difficult to survive.

7.4 ORGANISATIONAL EXCELLENCE

The key factor determining the continuing success of any organisation is its ability to develop and maintain a competitive advantage. This is obviously the responsibility of the enterprise itself. The European Foundation for Quality Management (EFQM) has identified certain fundamental concepts on organisational excellence. The following sections examine how these concepts are addressed by the Nirmithi Kendras.

(a) Results Orientation: In the fast changing environment, organisations are agile, flexible and responsive as stakeholder needs and expectations change, often frequently and quickly. Excellent organisations measure and anticipate the needs and expectations of their stakeholders, monitor their experiences and perceptions, and monitor and review the performance of other organisations. This information is used in order to set, implement and review their policies, strategies, objectives and targets for the short, medium and longer term.

At the Nirmithi Kendra

⇒ The organisations' mission, vision and goals were well set initially but were not subject to review.
⇒ Reviewing and improving the effectiveness of leadership behaviours was found to be missing.
⇒ A system for the measurement, review and improvement of key results was not installed.
⇒ Although interaction with customers as well as participation of representatives of society existed, communication gap between the leaders and the end users was clearly seen.
(b) Customer Focus: Organisations should know and intimately understand their customers. They understand that the customers are the final arbiters of product and service quality. Customer loyalty, retention and market share gain is maximised through a clear focus on the needs and expectations of both existing and potential customers. Organisations should be responsive to the customer's present needs and expectations. Where appropriate, customers should be segmented to improve the effectiveness of their response. At the same time, competitor activity should be monitored and competitive advantage should be well understood. Organisations should also effectively anticipate customer's future needs and expectations and should act in order to meet and where possible to exceed them. Experiences and perceptions of customers should be monitored and reviewed and where things go wrong quick and effective response pattern should be established. Organisation should build and maintain excellent relationship with their customers.

At the Nirmithi Kendra

⇒ The objectives laid out were based on a social objective.
⇒ Analysis of past performance, research, learning and understanding economic and demographic indicators were found to be absent.
⇒ There was no updating of policies, strategies consistent with the short and long term expectations of interested parties.
⇒ Reporting mechanisms for tracking the progress, prioritising, cascading, and communicating plans for following up achievements were missing.

(c) Leadership and Constancy of Purpose: Excellence is visionary and inspirational leadership coupled with constancy of purpose. Organisation should have leaders who set and communicate a clear direction for their organisation. In doing so they unite and motivate the other leaders to inspire their people. They establish values, ethics, culture and a governance structure for the organisation that provides a unique identity and attractiveness to stakeholders. Leaders at all levels within these organisations constantly drive and inspire others towards excellence, and in so doing display both role model behaviour and performance.
They lead by example recognising their stake holders and working with them on joint improvement activities. During times of turbulence, they display constancy of purpose and steadiness that inspires the confidence and commitment of their stake holders. At the same time they demonstrate the capability to adapt and re-align the direction of their organisation in the light of a fast moving and constantly changing external environment and in so doing carry their people with them.

At the Nirmithi Kendra

⇒ There was no continuity in leadership. Consequently there was no consistency in leadership styles.

⇒ Nirmithi Kendras though are non-governmental organisations, work more or less like Government organisations and therefore suffer due to lack of flexibility.

⇒ There exists hardly any effort for encouraging and supporting individual and team participation in improvement activities.

(d) Management by Process and Facts: Organisations should have an effective management system based upon and designed to deliver the needs and expectations of all stake holders. The systematic implementation of these policies, strategies, objectives and plans of the organisations are enabled and assured through a clear and integrated set of processes. These processes are effectively deployed, managed and improved on a day-to-day basis. Decisions are based on factually reliable information relating to current and projected performance, process and systems capability, stakeholder needs, expectations and experiences, and the performance of other organisations, including where appropriate, that of competitors. Risks are identified based on sound performance measures and effectively managed. The organisation is governed in a highly professional manner, meeting and exceeding all corporate external requirements. Appropriate prevention measures are identified and implemented, inspiring and maintaining high levels of confidence with stakeholders.

At the Nirmithi Kendra
⇒ Management of the internal resources, external partnerships, and suppliers are not based on well defined processes. On several occasions, decisions were based on procedures and not based on factual information.

⇒ Management of technology was carried out to a fair extent.

(e) People development and involvement: Organisations should maximise the contribution of employees through their development and involvement. They should identify and understand the competencies needed, both now and in the future, in order to implement the organisation’s policies, strategies, objectives and plans. Personal development is promoted and supported allowing people to realise and unlock their full potential. People should be prepared to meet and adapt to the changes required of them in terms of operational changes and personal capabilities. Organisations should seek to care, reward and recognise their people in a way that builds their commitment and encourages their loyalty to the organisation. At the same time, active involvement of their people through shared values and a culture of trust, openness and empowerment which will lead to generating and implementing ideas for improvement.

At the Nirmithi Kendra

⇒ Several of the processes were based on Government norms or notified procedures. This stood in the way of employee empowerment.

⇒ Identifying and prioritising opportunities for improvement, and other changes, both incremental and breakthrough were not practised.

(f) Continuous learning, Innovation and Improvement: Excellent organisations should continuously learn, both from their own activities and performance and from that of others by rigorously benchmarking, both internally and externally. They should capture and share the knowledge of their people in order to maximise learning across and within the organisation and also have an openness to accept and use ideas from all stakeholders. People are encouraged to look beyond today and today’s capabilities. Their people should constantly challenge the status quo and seek opportunities for continuous innovation and improvement that add value.
At the Nirmithi Kendra

⇒ There was no system to evaluate measures like customer's perceptions and performance indicators to achieve continuous improvements.

⇒ There was no procedure for handling of complaints, resulting in poor customer retention.

(g) Partnership development: In today's constantly changing and increasingly demanding world, success depends on the partnerships they develop. These enable them to deliver enhanced value to their stakeholders through optimising core competencies. These partnerships can be with customers, society, suppliers or even competitors and are based on clearly identified mutual benefit. Partners can work together to achieve shared goals, supporting one another with expertise, resources and knowledge and build a sustainable relationship based on mutual trust respect and openness.

At the Nirmithi Kendra

⇒ Partnerships were developed with both educational institutions as well as R&D units. However these were used to propagate the technology and construction techniques developed by the Nirmithi Kendras rather than to increase the competency of the Nirmithi Kendras.

(h) Corporate social responsibility: as a responsible organisation, it should adopt a highly ethical approach by being transparent and accountable to their stakeholders for their performance. They should give consideration to, and actively promote, social responsibility and ecological sustainability both now and for the future. This concept is expressed in its values and integrated within the organisation. Through open and inclusive stakeholder engagement they meet and exceed the expectations and regulations of the local and, where appropriate, the global community. In addition to managing risk, they should seek out and promote opportunities to work on mutually beneficial projects with society, inspiring and maintaining high levels of confidence with stakeholders. One should be aware of the impact on both the current and future community and take care to minimise any adverse impact.

At the Nirmithi Kendra
The Ninnithi Kendra was conceived and is being operated with a social objective and commitment. However, the Nirmithi Kendras failed to keep pace with the changing customer requirements thereby gradually losing confidence of the interested parties.

7.5 EFFECTS OF QUALITY SYSTEM CERTIFICATION

The idea of introducing quality management system in any organisation emerges as a strategic decision due to the need to adopt a model to be the starting point on its path to excellence. Quality System Certification will allow organisations to demonstrate their capacity to deliver quality products and an orientation towards the enhancement of client satisfaction and the continuous improvement of processes. Among the main goals achieved with the introduction of the quality management systems we can mention:

- The unification of the personnel efforts towards common goals, permitting the organization to achieve a strategic order.
- The increase of efficacy and efficiency in all the levels of the organization.
- Development of a culture oriented to the client satisfaction improvement.
- The implementation of a platform that allows the incorporation of future certifications and innovations oriented to improve client satisfaction.

A list of thirteen constructs of Quality Management pertaining to the construction industry has already been identified. An instrument for measuring the levels of quality practices in construction organization was developed and was used to study the level of quality practices, in both Quality Certified and Non-certified organisations (Chapter 4). The study was then extended to the Nirmithi Kendras.

7.5.1 DATA COLLECTION

The data was collected based face to face interviews. The 95 items in the questionnaire were jumbled and arranged in a random order and put to the respondents. The respondents against TQM Constructs were identified at random from
among employees of the Nirmithi Kendras at Trivandrum, Kollam, Trichur, Cochin and Calicut. A total 29 responses were collected. The respondents were asked to rate the significance of each item on a seven-point Likert scale, viz., (1) Extremely low (2) Very low (3) Low (4) Medium/ Satisfactory (5) High (6) Very high (7) Extremely high.

7.5.2 ANALYSIS - COMPARISON OF ISO CERTIFIED AND NON-CERTIFIED ORGANISATIONS AND NIRMITHI KENDRAS

This analysis was carried out to have a clear idea as to where Nirmithi Kendra as an organisation stands among the other construction organisations. (Quality Certified and otherwise) Analysis of variance technique (ANOVA) is used to test the equality of means of two or more sets of observations. The Table 7.1 showed that all the constructs did not show any significant difference at 0.05 level except for customer focus and infrastructure and facilities. Process quality management and benchmarking are showing significant difference at 10% level of significance. Comparison of mean scores showed that NK is far behind certified and non-certified organisations.

<table>
<thead>
<tr>
<th>TQM Constructs</th>
<th>Certified</th>
<th>Non certified</th>
<th>NK</th>
<th>F-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMCL</td>
<td>5.4 .74</td>
<td>4.9 .93</td>
<td>4.5 .5</td>
<td>2.171</td>
<td>.139</td>
</tr>
<tr>
<td>OC</td>
<td>4.7 1</td>
<td>4.5 .83</td>
<td>3.9 .27</td>
<td>1.61</td>
<td>.224</td>
</tr>
<tr>
<td>CF</td>
<td>4.9 .65</td>
<td>4.9 .79</td>
<td>3.8 .85</td>
<td>4.2249</td>
<td>.028**</td>
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<tr>
<td>PQM</td>
<td>4.6 .84</td>
<td>4.6 .69</td>
<td>3.6 .82</td>
<td>2.977</td>
<td>.073*</td>
</tr>
<tr>
<td>QM</td>
<td>4.9 1.1</td>
<td>4.8 .63</td>
<td>4.3 1.1</td>
<td>.711</td>
<td>.503</td>
</tr>
<tr>
<td>HRM</td>
<td>4 .95</td>
<td>4.4 .77</td>
<td>3.7 .72</td>
<td>1.073</td>
<td>.360</td>
</tr>
<tr>
<td>EE</td>
<td>4.6 1.3</td>
<td>4.5 .97</td>
<td>4.1 .69</td>
<td>.433</td>
<td>.654</td>
</tr>
<tr>
<td>CI</td>
<td>4.8 .8</td>
<td>4.8 1</td>
<td>3.9 .58</td>
<td>2.15</td>
<td>.141</td>
</tr>
<tr>
<td>BM</td>
<td>4.6 .98</td>
<td>4.3 .49</td>
<td>3.7 .48</td>
<td>2.618</td>
<td>.097*</td>
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<tr>
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<td>4.9 .89</td>
<td>4.8 .86</td>
<td>3.7 .43</td>
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<td>.031**</td>
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<td>COM</td>
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<td>4.7 .54</td>
<td>4.3 .36</td>
<td>.299</td>
<td>.745</td>
</tr>
</tbody>
</table>
Table 7.1 Difference between groups w.r.t TQM constructs – ANOVA

To test the equality between the groups pair wise, t-test was performed for two independent samples. Duncan’s pair wise multiple comparison test was used to test the pair wise significance. This is carried out to identify the homogeneous groups in the constructs where ANOVA shows significant difference. Otherwise, there is no significant difference between the three companies.

<table>
<thead>
<tr>
<th>Company</th>
<th>Subset for alpha = .05</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>NK</td>
<td>3.7667</td>
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<tr>
<td>Non-certified</td>
<td>4.8958</td>
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<tr>
<td>Certified</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 7.2 CF-Duncan Test

In this table for CF, the test has identified two homogeneous subgroups ie. Nirmithi Kendra is different from certified and non certified organisations.

<table>
<thead>
<tr>
<th>Company</th>
<th>Subset for alpha = .05</th>
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<td>Non-Certified</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 7.3 PQM-Duncan Test

Means for groups in homogeneous subsets are displayed. Here also it is seen that Nirmithi Kendras is different from the group of certified and non certified organisations.
From the table, the test has identified NK and non-certified organisations in one group as well as certified and non-certified organisations in the other. It can be inferred that there is scope for improvement in Nirmithi Kendras to cope up in this context.

### Table 7.4 BM-Duncan

<table>
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</thead>
<tbody>
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<td></td>
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</tr>
<tr>
<td>NK</td>
<td>3.6800</td>
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<tr>
<td>Non-certified</td>
<td></td>
</tr>
<tr>
<td>Certified</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>.099</td>
</tr>
</tbody>
</table>

### Table 7.5 IF-Duncan

Means for groups in homogeneous subsets are displayed. The values are not same for certified organisations, non-certified organisations, and Nirmithi Kendras.

To further explore the relationship between and among the groups, hypotheses $H_1$ and $H_2$ were formulated and tested.

**Hypothesis $H_1$**

This hypothesis was tested to ascertain whether there is any significant difference between certified organizations and Nirmithi Kendras.

<table>
<thead>
<tr>
<th>TQM Constructs</th>
<th>Certified</th>
<th>NK</th>
<th>t-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>TMCL</td>
<td>5.4</td>
<td>0.74</td>
<td>4.5</td>
<td>.5</td>
</tr>
<tr>
<td>OC</td>
<td>4.7</td>
<td>1</td>
<td>3.9</td>
<td>.27</td>
</tr>
</tbody>
</table>
Table 7.6 ANOVA – Difference between Certified organisations NK

Table 7.6 shows that Nirmithi Kendras are well behind the certified organisations in all the 13 constructs when the mean scores are being compared. But significant difference is noticed for TMCL, CF, CI and IF at 5% level of significance and for OC, PQM, and BM at 10% level of significance. As such it can be inferred that the role of top management is crucial and customer focus needs to be given thrust. At the same time, the results also reveal the need for continual improvement and better infrastructure and facilities. The need for change from the traditional organisational culture and the need to install monitoring mechanisms for process quality management as well as for benchmarking are highlighted by the study.

Hypothesis H₂

This hypothesis was tested to ascertain whether there is any significant difference between non certified organizations and Nirmithi Kendras.
On comparison of the mean scores, Table 7.7 shows that Ninnithi Kendras are very much behind the non certified organisations also in all the thirteen constructs. But significant difference is noticed for OC, CF, PQM, BM and IF at 5% level of significance and for CI at 10% level of significance. These set of observations showed that except for TMCL, all the other constructs identified which exhibit significant difference in hypothesis H1 are repeated (level of significance slightly different)in this hypothesis also.

### 7.6 CONCLUSIONS

There exists the urgent need and scope for the Nirmithi Kendras to move towards an excellence model. It should be recognised that there are many approaches to achieving sustainable excellence. TQM is one such approach. Hypotheses were formulated in this perspective so that improvements can be made in certain constructs towards achieving better organisational performance. Comparison between the organisations both quality certified and otherwise, showed that Nirmithi Kendras are
lagging behind the other two categories under study. The need to have better orientation for Nirmithi Kendras towards constructs like TMCL, CF, CI, OC, PQM, BM and IF were evident from the studies. This chapter identified the thrust areas for improvement in the organisation.

The forthcoming chapter studies in detail the performance part of the Nirmithi Kendras from the client’s point of view as well as the client’s satisfaction levels and also a comparative study with respect to the housing quality indicators identified.