Building Partnerships – The Management of Maintenance Defects: Good Practice Guidelines

1. Introduction

The construction industry is under pressure from the Construction Industry Task Force (1998) to reduce the number of defects in projects by 20% and to generally improve the quality of service offered to its clients. The Task Force argues that the goal of zero defects is achievable within 5 years. Indeed, some UK and US construction firms regularly achieve zero defects on handover. Further, it believes that clients from the social housing sector should take a leading role in achieving these objectives through the establishment of partnering style arrangements.

Our guidelines are designed to help contractors, consultants and clients: (a) decrease the number of defects in buildings at the handover stage; and (b) manage the defects liability period more effectively. They are also designed to encourage clients to improve quality by working collaboratively with the construction industry.

The recommendations documented here were derived from an action research project called Building Partnerships funded by UMIST, Manchester Federal School of Business and Management and the European Regional Development Fund. The project aimed to assist small and medium sized construction companies strengthen links with clients and diversify into new business opportunities.

Building Partnerships could not have been run successfully without the contribution, commitment and enthusiasm of the many participants – and the project team gratefully acknowledges their support. The team also acknowledges the role played by action learning sets run by the University of Salford and the Revans Centre for Action Learning. These sets were formed following an earlier project by UMIST, Building Positive Action and Rhys Jones Consultants for the DETR - called Building Equality in Construction.

These guidelines on the management of maintenance defects contain: a summary of the project; guidelines for construction companies; guidelines for clients; sources of information; and space for the reader’s own notes.
2. Summary of the Project

2.1 PROJECT AIMS

*Building Partnerships* was part of a wider programme to promote economic growth within the North West. The 8-month project aimed to assist small and medium sized construction companies strengthen links with clients and diversify into new business opportunities. The significance of partnering and communication procedures & technologies to performance improvement within construction was highlighted by a previous project ‘*Building Equality in Construction*’ and confirmed by the Construction Industry Task Force (1998).

The project team set about promoting partnering, effective communication and the use of technology through meetings and workshops. The project team held 19 interviews and 3 workshops, each attended by over 20 people. Along with industry colleagues, the project team attended 9 action learning sets at the University of Salford and 9 housing and construction related seminars in the North West. In addition to the good practice guidelines distributed to 150 people, the team presented papers at 2 conferences and gained industry support for 2 research proposals.

2.2 ACTION LEARNING

Action learning sets were run by Salford University and the Revans Centre for Action Learning to allow participants in *Building Equality in Construction* to continue their discussions. The action learning sets comprised approximately seven individuals from construction companies, housing associations and academia. The sets met for three hours every month over a twelve-month period.

Action learning contributed significantly to the direction and success of *Building Partnerships* by providing a mechanism through which to develop and implement ideas. In particular, action learning encouraged one of the members, John McDonald, Contracts Manager, Rowlinson Construction, to address a problem of concern to him – the management of maintenance defects. John McDonald’s interest in the issue arose, in part, from his firm’s participation in a partnering arrangement with a housing association. He produced a report outlining problems and potential solutions, which was discussed in the sets and sent to several clients interested in reducing defects and/or reported faults.

Discussions within action learning sets suggested that the topic of maintenance defects would be of interest to a wider audience, while the solutions contained in the report provided excellent material for workshops and, ultimately, good
practice guidelines. The project team is therefore extremely grateful to John McDonald for allowing his work to be used by the Building Partnerships team.

2.3 MAINTENANCE DEFECTS AND TECHNOLOGY WORKSHOPS
The project team held two workshops on the management of maintenance defects and one on communications technologies. The workshops began with presentations from the project team and/or outside speakers, which formed the basis of discussion groups in which participants were asked to address a specific set of questions related to defects management or the application of technology to construction.

The workshops revealed widespread concern about the number of defects on handover, as well as the management of defects during the liability period. This was demonstrated by the level of interest in the maintenance defects workshops, especially amongst housing associations. Workshop discussions showed that housing association managers are dissatisfied with the quality of the service provided by contractors, especially during the post-construction phase. A maintenance manager said that getting contractors to deal with defects once they have left the site is extremely difficult and that defects are a ‘major headache’ for associations. The cost of dealing with defects is estimated at between £50,000 and £120,000 per annum, depending upon the size of the association. Clients are also unhappy about delays in handing over properties.

Defects and delays are viewed very seriously by the housing associations, as they can seriously damage relationships with tenants, precipitate complaints and lead to punitive action by the housing association Regulator.

Construction firms are also concerned about defects. It was pointed out that it costs at least £50 every time a trades person is called out to deal with a defect, and that this diminishes profits, which are already dangerously low. In addition, construction managers are unhappy about being expected to deal with faults, which are not their responsibility, but caused by factors such as lack of tenant knowledge and routine wear and tear. Consultants too, are unhappy about the management of the maintenance defects period, as reports of defects are often communicated via their offices. Construction managers wanted to improve, performance, as failure to provide a quality service could jeopardise future contracts. One manager pointed out:

“My role is marketing manager, but I am very conscious that our reputation does not stop at ‘winning the job’. Many a relationship has been dented at the resultant finishes of the building and their persistence to give problems after the project is completed”
(construction company).
Delegates identified a range of factors that contribute to poor quality buildings. Defects on handover are attributed to short project time-scales, non-standard designs, insufficient detail in the specification and lack of communication. Poor record keeping and the dispersed, casualised nature of the workforce makes communication difficult. The absence of systems to bring about quality also means that a firm’s performance often declines once key individuals leave an organisation.

Poor quality persists because construction firms are excluded from some of the key phases of projects and are not rewarded by clients for providing a quality service or product, only for submitting the lowest bid during the tender stage. Housing associations recognise the shortcomings of their price-based procurement procedures, but feel compelled to continue with existing practices for fear of criticism from the housing association Regulator, as well as doubts about the benefits of alternative methods of procurement. As one development manager said:

“Compulsory competitive tendering may not be the best system, but any other methods make us vulnerable to accusations of impropriety or unfairness. It is also very difficult to measure factors other than price” (housing association).

Poor quality service from construction firms during the defects liability period is attributed, in part, to the fact that, once off-site, firms move on to new contracts, which often take priority. This makes them unwilling to invest time and resources in attending to defects. Some housing associations compound the difficulties by passing reported faults on to the contractors, without determining their cause, and failing to monitor repair progress. Tenants apparently report non-defect faults because they do not understand how to operate household appliances, are unable to recognise and respond to routine maintenance problems or are uncooperative. However, it is difficult to ascertain the percentage of defects compared to faults arising from other factors due to the absence of mechanisms for determining the cause of faults.

Technology is thought to have a significant role to play in the management of maintenance-type problems. In particular, delegates are interested in developing computerised manuals and drawings, which can easily be updated. They are also keen to make better use of maintenance software packages to programme maintenance and calculate building life-cycle costs. Indeed, several managers are interested in establishing pilot projects:
"The Building Partnerships workshop has highlighted the need for standards in building maintenance documentation. I am hoping to collaborate with one of the construction companies in the development of a demonstration manual" (consultant, university).

Delegates said that technology is also useful for improving communication and reducing travelling time and costs. Videotelephone equipment could be used to transmit digital pictures of buildings or site plans to architects and clients. This would not only increase control over the building process, but would also reduce the need for architects to visit the site to attend to problems. In addition, video conferencing equipment could be used for meetings. A marketing manager felt this would be especially appropriate for his company:

“I spend a lot of time commuting between Manchester and our head office, which is about two hours drive away. Video conferencing could reduce this time” (construction company).

2.4 SOLUTIONS TO MAINTENANCE DEFECTS
The workshops and the interviews generated a wide range of actions that could be taken by contractors, consultants and clients to improve the management of maintenance defects. Some solutions are fairly easy to implement. These include:

- Putting defects on the agenda at the pre-contract meeting. The early agreement of dates for handover and procedures for managing defects reduces disagreement later on, and increases the likelihood of the project being completed on time.
- Combining repairs and inspections. This prevents contractors from having to arrange for trades people to return to properties to undertake repairs. It is efficient for the contractor, and provides better service for clients and tenants.
- Getting tenants to sign a form saying that repairs have been completed to their satisfaction. This presents a professional image, and the form can be returned to the client to show that work has been completed. By providing a space for information about the cause of the fault, clients can also monitor and, potentially, improve quality.
- Confirming messages in writing. This reduces the likelihood of a breakdown in communication between construction companies and their clients.

Some methods of improving the management of maintenance defects are more innovative, but perhaps more difficult to implement. These include:
• DIY courses for tenants. DIY training not only reduces the number of unnecessary calls from tenants, it also provides added value in the form of increased confidence, enjoyment and potentially job opportunities for tenants.
• The employment of ‘super tenants’ to answer questions and undertake simple repairs for tenants.
• Setting up a tenants’ helpline. This enables housing associations to filter calls from tenants reporting repairs and, where appropriate, provide practical advice about the use of household appliances. Diagnostic manuals – computerised or otherwise - can aid this process.
• Rewards for tenants who treat the property well.
• Paying tenants’ heating bills when they first move into the property to ensure materials dry out properly.

Other solutions proposed by delegates are designed to reduce the overall number of defects and often relate to the entire construction process. These include:

• Using standard designs and components.
• Specifying permanent ventilation systems, where design permits.
• Implementing quality control systems, perhaps using IT.
• Increasing integration between the different groups involved in the construction process. This can be achieved by having maintenance managers from the client organisation attend site meetings.

It became apparent that maintenance managers from both client and contracting organisations have much to contribute to improvements, but, as so often in business, are frequently not asked. Exclusion of key individuals results partly from their being assigned different roles and responsibilities during the construction process, but also from lack of incentive for people working in construction to improve organisational performance.

Delegates felt that partnering relationships between contractors, clients, suppliers and manufacturers would create a more integrated workforce and provide benefits for the clients in terms of project costs and outcomes. A marketing manager said:

“We want the opportunity to negotiate on what the client wants to achieve. We don’t want to be given a fixed project with a fixed price. If they bring this to the table, it’s too late. Where is the innovation? Partnering means discussing the site layout, subcontractors and suppliers” (construction company).

Many delegates had experience of partnering and had referred to guides such as the Construction Industry Board’s (1997) Partnering in the Team. While these guides are useful, the project team believes that the need to establish partnering
and performance improvement mechanisms leads to the much wider issue of how to motivate staff. Here it is beneficial to learn from sources outside the construction industry, such as Julian Richer’s (1998) “A Richer Way”. His philosophy is similar to others, with its emphasis on performance measurement and the enforcement of high standards, but begins with the need to motivate people. This means providing employees with decent terms and conditions, rewarding them for service quality and, wherever possible, creating a fun working environment. In his view:

Staff will not be loyal to the organisation unless it’s loyal to them. Training courses and fancy Christmas parties are no substitute for basic trust between employer and employee… My own industry, retail, is traditionally notorious for boring, low paid jobs… At Richer Sounds, we have a waiting list for jobs in every one of our stores. Staff are well paid, well trained and have jobs their friends envy” (pp30-31), Julian Richer, Chairman, Richer Sounds.

2.5 MOTIVATION TO ACT

Building Partnerships encouraged participation, collaboration and enthusiasm amongst many of the participants. Each event identified people keen to give and/or receive assistance – not only with maintenance defects and partnering, but across a range of issues. The project team’s intervention led to changes within some participating organisations and established a number of new alliances. In particular:

- A consultant, contractor and housing association requested help with partnering and/or performance measurement. In one case, the project team reviewed an application to work in partnership with a local authority.
- Two managers changed their organisation’s communication procedures following the maintenance defects workshops and several pilot projects were proposed during the technology workshop.
- Several managers followed up contacts made during workshops. One is confident that this will lead to new business.
- Individuals involved in New Deal, local labour schemes, training and the development of new technologies collaborated with the project.
- A local training provider was put in contact with construction/housing managers interested in the new employment legislation and Investors in People.
- Two consultants and a housing association asked for help with equal opportunities. An entrepreneur accepted the need to change a company brochure and two women were given careers advice.
- A manager contacted the project team for expert legal advice.
A housing association manager was put in touch with a university colleague who visited a site to help locate the source of a leak on a flat roof.

2.6 THE FUTURE
Setting up partnering relationships and improving the quality of the service and product offered by the construction industry means sharing, developing and implementing best practice. It requires a fundamental shift in attitudes away from cynicism and conflicts of interest towards openness and commitment to working together for the achievement of mutual goals. *Building Partnerships* facilitated the process of change, but was always limited by the short duration of the project and the resources available for working with specific project partners. Consequently, the project team applied for funding for work to support individuals and organisations interested in implementing solutions and monitoring the results in order to identify successful practices.

Support from industry has been fundamental to the process of applying for funding. The project team is grateful for, and impressed by, the level of genuine commitment shown by industry, both to the project and to quality improvement within construction.
3. Guidelines for Construction Companies

3.1 INTRODUCTION
These good practice guidelines offer suggestions about how construction companies can reduce the number of defects on handover and manage the defects liability period more effectively. By implementing the recommendations and setting up mechanisms to promote continuous improvement, construction companies, especially SMEs, will be able to improve quality, strengthen links with clients and take advantage of new business opportunities.

The recommendations lead on from a report about the maintenance defect period by John McDonald, Contracts Manager, Rowlinson Construction Limited – a construction firm based in Cheshire. His report was prepared for an action learning set run by the University of Salford and the Revans Centre for Action Learning. The guidelines also incorporate comments from managers made during workshops and meetings.

The guidelines deal with quality, from the design stage through to the end of the defects liability period, and cover issues such as communication and working in partnership. The guidelines present a wide range of suggestions for dealing with defects - managers should select recommendations suited to their own organisations.

The guidelines cover the following:

- Why bother about defects?
- Designing for quality and efficiency.
- Quality-orientated construction.
- Managing tenants.
- Communication procedures and technologies
- Managing quality improvement

3.2 WHY BOTHER ABOUT DEFECTS?
Housing associations are the dominant providers of housing in the social housing sector. In 1998/99, they expect to start schemes (both new build and rehabilitation) worth around £2 billion for approximately 30,000 homes. The sector, including both housing associations and local authorities, also faces a growing demand for repairs and maintenance. Meeting the needs of the social
housing sector requires construction firms to adopt a quality-driven agenda. Quality means not only zero defects, but right first time, delivery on time and to budget, innovating to the benefit of the client and stripping out waste, whether it be in design, materials or construction on site. For some major clients, it also means investigating innovative approaches to housebuilding, which offer significant improvements in the speed and cost of construction, while retaining a high standard of quality (Construction Industry Task Force, 1998). Our research reveals that:-

- The ability of contractors on social house building schemes to provide a quality product and service is of paramount importance to managers from client organisations. Not only does the administration associated with defects cost housing associations a lot of money, but a firm’s failure to provide an adequate service during the defects liability period potentially results in complaints from tenants and punitive action from the Regulator. Construction firms that deliver a quality product and service therefore have a competitive advantage compared to other companies.

- Managers from client organisations pay attention to the number of defects on handover and the quality of after-sales service provided by contractors. They may not have exact performance figures to hand, but they report being able to differentiate between contractors who provide a quality service and those who do not. A reputation for quality increases the likelihood of a firm being respected by its clients and treated accordingly.

- Even though contracts are awarded on the basis of lowest tender price, business opportunities - tendered or negotiated – are more likely to be offered to contractors with a reputation for delivering a quality service, especially during the post-construction phase.

- In addition, contracts involving partnering style relationships tend to be made available to contractors who provide a quality service – especially if the relationship extends over a series of projects.

- The ability to achieve cost savings is being used by clients to select project partners. Construction firms who build homes with future maintenance needs in mind help clients save money over the longer-term.

- The time and resources dedicated to dealing with defects depletes construction company profits. The director of a construction firm estimated that it cost at least £50 every time a trades person attends to a defect.
3.3 DESIGNING FOR QUALITY AND EFFICIENCY

Quality Products
Construction companies need to use products and brands which give clients confidence in the reliability and integrity of the firm and, ultimately, the industry. Contractors also need to provide information about the quality and buildability of new products, so that clients and designers can choose appropriate products and, where appropriate, specify these in the tender documentation. Improved quality and good service helps construction firms strengthen relationships and diversify into new business opportunities.

- Use branded products.
- Use products with warranties.
- Ask for information from manufacturers about new products.
- Ask your workforce about the buildability of new products and communicate the information to clients and designers.
- Recommend quality products to the client and, where appropriate, ask for these to be specified in the design.

“We specify products guaranteed by the manufacturers – only construction companies willing and able to work with specified materials are invited to tender” (maintenance manager, university).

“I can think of a director from one of the construction firms who I trust completely. If he says something will be done, then it’s done. He gives advice about products and design. But I think this should be given more often” (development manager, housing association).

Standard Designs and Factory Assembled Products
The number of defects can be significantly reduced, without impinging on the aesthetic quality of the house, by using standard designs and factory produced products. Assembling products in a factory also makes it easier for construction firms to provide regular hours and better working conditions for workers.

- Use standard designs for houses.
- Consider using factory-assembled materials.
- Consider using pre-fabricated houses.
A rigorous search for value through simplicity was the key to the success of the Garrard House, the City of London Headquarters by Bovis and developer Stanhope. For example, piling was positioned where previous pad foundations were located, which meant that ground work was fast and avoided archaeological risk (Building, 23.10.98).

**Design for Tenant Satisfaction**

Houses built for the social housing sector need to be energy efficient. Housing associations are concerned about reducing energy consumption for environmental and commercial reasons. Low bills increase the likelihood of a tenant remaining in a property and improve the association’s ability to recruit tenants for difficult to let properties. Houses need to be free from condensation - as this is considered a defect by clients – without being expensive to run or unpleasant to live in. Construction firms should therefore advise clients about how to treat condensation.

- Suggest double glazing and adequate insulation.
- Suggest permanent ventilation, where design permits.
- Keep air vents away from seating areas.
- Use low noise ventilation systems.

“Our company can provide simple automatic ventilation which monitors the humidity level in each room and adjusts accordingly. This provides greater comfort and energy savings… Effective ventilation provides immediate benefits to the occupants, and long-term benefits to the Housing Association in reduced maintenance and refurbishment costs” (ventilation company).

**Specify User-friendly Products**

Construction firms need to ensure that household appliances are easy for tenants to operate. This reduces the time required by housing associations to demonstrate appliances and decreases requests for assistance from tenants. This will not only improve the quality of the product provided by construction firms, it will also reduce the likelihood of contractors being called out to deal with problems assumed to be defects, but arising from lack of tenant knowledge.

- Inform product manufacturers of the importance of ensuring that products are easy to use, with easy to follow instructions.
- Use products with round clock dials, rather than digital controls.
• Form strategic alliances with product manufacturers. This will improve communication, increase influence over manufacturers and provide new business opportunities for construction firms.

3.4 QUALITY-ORIENTED CONSTRUCTION

Quality Assurance
Consistently high quality is not achieved by relying on exceptional individuals working ridiculously long hours, but by installing procedures to promote best practice, monitoring the results and identifying opportunities for improvement. Quality assurance programmes increase the likelihood of the product being right first time, detect any problems and provide feedback about their magnitude and location. Detecting and solving problems saves construction firms money and increases client satisfaction.

• Introduce quality assurance systems to detect problems.
• Use ISO/BS quality assurance schemes to choose materials.
• Make clerks of works responsible for monitoring quality and advising on methods of improvement.
• Feed back information about performance to the workforce.
• Ask the workforce to suggest solutions to problems.

“Our quality assurance system has helped us improve our procedures and has led to quality improvements. We have changed the type of door handles we use, for example. Also, door seals have been modified, as they were letting in water” (contracts manager, construction company).

Quality Workmanship
The construction industry continues to experience problems finding and retaining skilled people because it fails to provide good terms and conditions for its workforce. Construction firms need to calculate the costs of staff recruitment and turnover. This money needs to be invested in wages, equipment and training for the workforce.

• Invest in proper tools and equipment.
• Provide decent terms and conditions for the workforce.
• Use the payment systems to encourage trades people to produce quantity work.
• Reward quality with small cash prizes.
“We have to provide good facilities on site, as people do not work well when they feel uncomfortable” (contracts manager, construction company).

The Garrard House was built at low cost by ensuring that workers were well-equipped and rewarded for productivity. Workers were provided with satellite canteens and given tool belts to wear. Power lift equipment and quality scaffolding were specified in the tender documentation. In addition, workers were given £10 on the spot rewards for quality (Building, 23.10.98).

Quality Service
Quality means not only zero defects on handover, but right first time and delivery on time and to budget. It also means sorting out problems to the best of one’s ability, rather than wasting time allocating blame – the root cause of the problem can be discussed at a later date, when everyone is feeling calmer. Willingness amongst construction firms to accept responsibility for problems prevents small disputes from getting out of hand. It also helps them attract and retain valued clients, thus reducing the need to bid for low profit projects.

• Keep to start and finish dates.
• Plan to finish 2 weeks early, where possible. Alternatively, negotiate 2 weeks slippage in return for ensuring zero defects on handover.
• Hold inspections on the specified day.
• Give notification of any delays to allow the client to make alternative arrangements/inform tenants etc.
• Apologise for any delays, attempt to minimise disruption and give details of action being taken to address problems.
• Suggest reviewing any problems during a post-project review.
• Retain materials required for maintenance purposes.

“We have a project review some time after the end of the contract. It is an opportunity to hear both sides of the story. We find some things, which were major issues at the time, have been blown out of proportion” (development manager, housing association).
3.5 MANAGING TENANTS

A quality Service for Tenants
Housing associations are committed to dealing with repairs effectively, politely and without undue delay or fuss. They cannot risk complaints from tenants, nor failure to meet performance targets laid down by the housing association Regulator. Construction companies must ensure that they provide a quality service during the defects liability period. Firms unable to deliver the service themselves need to employ someone else to do the job - either a reliable sub-contractor or the housing association’s maintenance division.

- Employ a trades person to deal specifically with defects. Otherwise use a reliable sub-contractor for all you maintenance work. Consider employing organisations from the housing associations’ approved lists, as the clients have already vetted them.
- Consider asking the client to employ their own maintenance personnel or a specialist maintenance contractor, especially for out of hours cover. Offer to pay for visits to deal with defects.
- Consider visiting the site on a specified day each week to deal with defects. This will make planning easier and provide a good service to tenants.
- Write to each tenant with details of the individual/company responsible for dealing with defects – to ensure a feeling of security, enclose a picture of the person and/or details of his/her ID card.
- Make an appointment with the tenant for non-urgent repairs.

“We now offer appointments for non-urgent repairs. Up to two-thirds of tenants with ‘urgent’ or ‘routine’ repairs are now taking up our offer of an appointment (Housing Association Newsletter, Winter 1998-99).

Added Value Projects
Housing associations need construction firms to participate in added value projects funded by the housing association Regulator or Government Initiatives. This requires construction firms to provide training and employment for tenants or local people – especially ethnic minorities and women. Added value projects help construction firms diversify, innovate for the benefit of the client/contractor, gain publicity, identify new sources of recruits and provide training.

- Use the directory of minority-led firms to recruit trades people to deal with defects.
- Provide DIY training for tenants and/or local people.
• Provide apprenticeships for women and ethnic minorities.
• Provide training opportunities for young people through the Government’s Welfare to Work Programme – ‘New Deal’.
• Ask housing associations about advertising job opportunities to tenants.
• Consider employing an appropriately trained tenant to deal with reported faults.

<table>
<thead>
<tr>
<th>Common faults</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>External light not working</td>
<td>- Replace the light bulb. Where appropriate, check the fuse box.</td>
</tr>
<tr>
<td>Central heating not working.</td>
<td>- Check the thermostat is turned up. Check gas and electricity suppliers are turned ON.</td>
</tr>
<tr>
<td>Ventilation fan does not work</td>
<td>- Check switch spur is ON.</td>
</tr>
<tr>
<td>Damp in rooms</td>
<td>- Use ventilation fans. Ensure air vents uncovered. Use dryer rather than hanging up washing. Open windows, when possible.</td>
</tr>
</tbody>
</table>

Two contractors plan to provide training through New Deal, whilst a contractor and a housing association are working in partnership to provide apprenticeships specifically targeted at female tenants. A local authority also proposes to offer women trainee positions as multi-skilled operatives as well as having planned recruitment for apprentices in traditional trades.

**Educating Tenants**

Construction firms need to educate tenants in the use of household appliances. This decreases the likelihood of contractors being asked to deal with problems caused by lack of tenant knowledge. It demonstrates commitment to providing a quality service for tenants, along with a willingness to work with clients to tackle problems.

• Provide a tenant information pack.
• Provide a one-page summary of the most common faults and their solutions, along with a contact number if these actions fail to resolve the problem.
• Invite tenants to a demonstration of household appliances.
Encouraging Responsible Tenants
Abortive calls to tenants’ homes to deal with defects are a waste of time and money. Arranging a convenient appointment with the tenant increases the likelihood of the tenant being available. Tenants may need to cancel appointments, however. The contractor should therefore provide appropriate contact numbers.

- Confirm access times with tenants. Standard letters can be used.
- Provide contact numbers – not just a mobile phone number, but an office contact number, as the cost of calls to mobile phones may deter tenants from ringing.
- Ask the client about warning tenants of the possibility of charges for abortive calls.
- Ask the client about procedures for identifying and dealing with tenant damage.

Taking action against Uncooperative Tenants
Contractors must develop effective procedures for gaining entry to properties and discuss these with the client prior to the start of the defects liability period, preferably during the pre-contract meeting. Charging tenants for abortive calls is a sensitive issue and should therefore be discussed with the client before any action is taken.

- Agree in advance with the client a course of action in the event of tenant non-co-operation.
- Obtain written agreement from the tenant for repairs, along with times of access.
- Notify the tenant and the client that an abortive visit has occurred.
- Give notification of further abortive visits with costs.
- Give notice of charges being levied.
- Omit the tenant from immediate defects work and subject him/her to a later inspection.
- Hand over responsibility for defects to the client until access has been agreed.

3.6 COMMUNICATION PROCEDURES AND TECHNOLOGIES

Being Clear from the Outset
Construction firms need to put the management of maintenance defects on the agenda from the outset. This helps establish effective procedures for dealing with defects, promotes adherence to deadlines and allows time for discussion about
potential problems. It also demonstrates a contractor’s commitment to service quality during the post-construction phase.

- Ensure the contracts manager recognises the firm’s contractual obligations.
- Communicate information about the consequences of failing to comply with obligations to staff responsible for defects.
- Put defects procedures on the agenda for the pre-contract meeting.
- At the meeting ensure that the client’s agent understands his/her responsibilities.
- Agree a date to begin handover and commit to meeting this deadline.
- Provide a programme for handover and dealing with defects.

“By addressing maintenance issues at the pre-contract meeting, you effectively have the item on the agenda for all future monthly meetings…I believe that this type of commitment at the onset of the contract would focus all parties’ attention and would be a means of reference if any party fails in their duty” (contracts manager, construction company).

Communication during Construction

A zero-defect handover on the date specified, where tenants are able to move into their properties, with the minimum of disruption, requires communication between maintenance staff from both the contractor and client organisations, as well as a focus on tenant needs. It also requires regular feedback about quality through meetings and measurement tools. Adequate feedback during the construction phase gives firms an opportunity to deal with problems, before they impact upon performance.

- Set up regular meetings specifically to discuss quality and productivity.
- Develop measurement tools to monitor the quality of service provided by construction companies.
- Mid-way through the contract, invite housing/maintenance management from the client organisation to attend the monthly site meetings.
- Participate in defects sub-committees organised by clients.
- Present the proposed tenant’s information pack and standard letters to the housing/maintenance managers mid-way through the contract, so that feedback can be provided.
- Invite client’s housing management along with potential tenants to view the pre-completion of properties. Where appropriate, provide a full demonstration of all mechanical, electrical and specialist equipment.
During the construction of the Garrard House, performance data was collected using a palm computer. The data was fed back to the workers on a daily basis, so that, where appropriate, remedial action could be taken immediately (Building, 23.10.98).

**Programme for Handover**
Agreement of handover dates at the onset of the contract increases the likelihood of everybody being prepared and available on the day. Record forms should be used to ensure that items such as door keys are handed over to the client. Such attention to detail reduces the time construction companies spend organising handovers.

- Agree and stick to a programme for handover.
- Ensure inspections take place at the specified time and date.
- Give adequate notice of inspection dates to the client’s clerks of works.
- Produce a handover schedule. Start phased handovers early enough.
- Prepare handover forms to record: the address, whether keys have been handed over, the results of inspections and meter readings.

**Schedule for handover**

<table>
<thead>
<tr>
<th>Week Numbers</th>
<th>No. of properties handed over</th>
<th>Other Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 48</td>
<td>-</td>
<td>Construction, quality inspections</td>
</tr>
<tr>
<td>38 – 48</td>
<td>2 per week inspected and handed over</td>
<td></td>
</tr>
<tr>
<td>48 – 52</td>
<td>-</td>
<td>Clearing site</td>
</tr>
</tbody>
</table>

**Communication during the Defects Liability Period**
Information about defects should be communicated using a standard form, addressed to a nominated individual. The form should also be used to record action required by the contractor and its outcome. A construction manager should be delegated to oversee the successful completion of the defects liability period.

- Delegate defects to a maintenance manager. Ensure the client has the name, telephone number and fax number of the manager responsible for defects.
• Being aware of the company’s contractual obligations, the contracts manager is in a good position to oversee the defects liability period.
• All communication about defects should be confirmed in writing.
• Tenants should be required by the contractor to sign a repair form indicating that ‘the repair has been completed to their satisfaction’.
• The repair form should provide space for information about the cause of the fault, which the trades person has to fill in.
• The repair form should be returned to the client, probably by fax or e-mail, thus completing the feedback loop.
• Arrange a post-project review to gain feedback about the quality of service provided during the defects liability period.

“If defects are issued verbally on a regular basis, it is possible that the importance and the meaning of the message changes, however slightly, and you begin to lose control. If this practice was allowed to continue, you would lose all control and management attitudes and standards drop – defects would become unimportant… You should not lose the benefit of reporting defects verbally, but it is necessary to confirm later in writing” (contracts manager, construction company).

“How many times do you receive complaints from tenants that only part of the works are complete and this becomes an issue later? To assist management control, you should develop a form for signing off defects” (contracts manager, construction company).

Making Good Defects Efficiently
Construction firms need to avoid wasting time with unnecessary visits and delays. Starting repairs immediately after inspections reduces the need to arrange further visits to the property. It also minimises administrative costs and reduces inconvenience to the tenant.

• Agree access to the properties prior to the final inspection.
• Ensure a multi-skilled trades person is available to complete repairs.
• Ensure that the architect issues the Making Good Defects Certificate on time.
“We have a duty to ensure that defects are addressed in a controlled and positive manner and within a reasonable period of time – to the benefit of all, especially the occupying tenant. It is therefore reasonable to ensure you actually commence your maintenance works on the very same day you make the first inspection. All the interested parties are assembled together. You have agreed prior access to all properties. All that is required is to ensure the contractor has the required labour available on the same day” (contracts manager, construction company).

**Communication technologies**

The quality and quantity of information communicated during construction projects can be improved by technology. Technology also helps reduce travelling costs and administrative time, which benefits everyone – contractors, consultants, clients and tenants.

- Use IT to monitor and analyse defects.
- Use digital cameras to photograph faults during inspections. Send the digital photograph to the architect using e-mail or a telephone conferencing device. This reduces the need for architects to visit the site.
- Use digital cameras to take photographs of buildings for clients and tenants.
- Use video conferencing equipment for meetings.
- Develop maintenance software showing animated pictures of household appliances and equipment. Use this to train maintenance personnel.
- Develop computerised manuals and drawings, as these can be up-dated.

“We have purchased a digital camera. They are not expensive anymore. We often take pictures of buildings for clients and it saves me time. I don’t need to buy film, and I don’t need to send pictures off to get developed” (contracts manager, construction company).
3.7 MANAGING QUALITY IMPROVEMENT
All firms have to improve continually in order to remain competitive. This means constantly seeking the best way of doing things. Improvements will not be made consistently across the organisation unless performance is measured. Performance measurement and improvement are key aspects of partnering relationships.

Collecting Performance Data
Construction firms who are serious about performance improvement need to ensure that staff monitor quality, without creating an administrative burden for busy employees. This means collecting simple information about service quality. The reliability and validity of performance data should be evident to staff. It is therefore essential to discuss criteria and data collection tools with them.

- Produce a maintenance record file for each property.
- Identify types of defects eg. mechanical and electrical materials, workmanship and tenant damage.
- Keep a record of response times for completion.
- Keep a record of call outs along with charges for non-defects.
- Keep a record of abortive calls.
- Record any action to overcome problems and implement best practice.
- Make the method of analysis fairly simple, especially when collecting and analysing data manually. For example, sort forms into two piles - one for repairs completed to the required standards, the other for repairs completed below standard. Simply calculate the relative frequencies and determine the causes of any difficulties.
- Consider using a computer to analyse quality performance data.

Using Performance Data with the Workforce
Information is only useful if communicated to staff and used to identify opportunities for improvement. To be effective, information must be fed back to the workforce quickly.

- Regularly circulate feedback about defects to relevant personnel. Consider keeping a visual record of results, either at the office or on site.
- Identify opportunities for improving quality and reducing maintenance costs.
- Provide positive feedback by drawing attention to instances of improved service delivery. Promote best practice by highlighting the benefits of action by staff or management to improve quality.
- Disseminate information about successes to clients during in post-project reviews.
“To improve the performance of people in your organisation, you have to examine two areas. Firstly, are managers and staff working within a sound framework? What I mean, does the organisation have clear controls? Is everyone trained in the procedures required to do the job? Are people working to targets they understand and is their performance being continually measured?” (pp 31). Julian Richer, Chairman, Richer Sounds.

Motivating Construction Staff
The construction industry has started to recognise the role played by proper training and decent terms and conditions in achieving quality and reducing recruitment costs. With regard to improving organisational performance, construction managers need to ensure that any changes do not undermine the status, job security or psychological well-being of the workforce, otherwise they will be resisted. Ideally, employees should be rewarded for providing a quality service. Julian Richer, Chairman of Richer Sounds, the largest and most profitable Hi-fi retailer in the UK 1992-98, motivates staff by rewarding quality service and making work fun. He also provides staff with decent wages, job security and reasonable working hours.

- Pay towards the top end of market rates. This will ensure that good, well-trained staff are not lost to competitors.
- Employ staff on permanent contracts and introduce profit sharing. This encourages employees to take an interest in the long term future of the organisation.
- Hold regular careers counselling sessions for staff. This gives employees a chance to discuss their career aspirations and helps the organisation provide appropriate training.
- Monitor the number of day per week worked by staff. Working more than five days per week should be the exception, rather than the rule. Overworked employees rarely provide a quality service and are more likely to leave the company or take sick leave.
- Monitor and reward quality with ex gratia payments.
- Introduce a suggestion box and reward everyone who contributes. Staff are in the best position to identify opportunities for improvement, but need to be given opportunities and incentives to contribute.
- Improve morale by arranging regular social events for staff.
- Set up a hardship fund for employees who encounter financial difficulties.
“We have to bring up levels of pay and to reward good trades people. There is a big difference between a good trades person and a bad trades person. I hope the new employment legislation is a move in the right direction” (contracts manager, construction company).

“Management’s job is to keep the excitement going and this is the hardest part of motivation. Every year I think about what we can do next year. There needs to be a drip feed of new incentives and benefits” (Julian Richer, Chairman of Richer Sounds, pp94).

Establishing Partnerships
Some construction companies are already working in partnership with clients and many more are interested in forming partnerships. There are a number of useful guides to partnering including the Construction Industry Board’s (1997) ‘Partnering in the Team’. This means that firms can prepare themselves for partnering opportunities by learning about and implementing the principles of partnering.

- Set up conflict resolution mechanisms, both within the organisation and with clients.
- Organise workshops to identify and implement best practice.
- Ensure that the company structure encourages team working.
- Introduce quality circles.
- Set up partnering relationships with sub-contractors and suppliers – publicise success.
- Apply for added value projects designed to promote equal opportunities and/or provide employment for local people.
- Encourage tenant involvement in the design process.
- Identify land suitable for development by housing associations and develop proposals for working in partnership.
- Provide a good post-construction service.
- Offer better value for money in return for a stable income.

“In the early 1990s, MJ Quinn (electrical contractor) moved away from subcontracting for the big companies because they often refused to pay promptly (or at all), putting subcontractors out of business. Instead, since 1994 Quinn has partnered with his larger clients, sharing their risks but benefiting from their bargaining strength” (Fast Track 100, The Sunday Times, 6.12.98).
Joining Industry Initiatives
Government support for the industry means that there are a number of initiatives designed to promote better relationships and improve performance within construction. Initiatives help construction firms strengthen links with clients, training providers and consultants. It also means that they are in a better position to influence the process of change. This is especially important for small and medium sized construction companies, as they comprise a significant proportion of the industry and have much to offer in terms of drive and innovation.

- Offer to join groups dedicated to quality improvement
- Contribute to research projects.
- Participate in working groups.
- Attend workshops.
- Join action learning sets.

“The Building Partnerships workshops have established some excellent relations and partnerships” (director, construction firm).

“We might get some business out of them!” (consultant).
4. Guidelines for Clients

4.1 INTRODUCTION
These guidelines suggest ways in which clients can improve the quality of the service offered by construction firms, especially during the defects liability period. It also provides practical steps for social housing sector clients to improve their own management of maintenance defects.

Some recommendations documented here are derived from a report on maintenance defects by John McDonald, Contracts Manager, Rowlinson Construction Limited – a construction company based in Cheshire. His report was prepared for action learning sets run by the University of Salford and the Revans Centre for Action Learning. However, many suggestions were proposed by housing associations and universities during Building Partnership workshops and meetings.

The following topics are covered:

• Why bother about defects?
• Managing tenants.
• Managing construction companies.

4.2 WHY BOTHER ABOUT DEFECTS?

The social housing sector has an important role to play in reducing building defects and driving forward improvements in the quality of the service offered by construction companies. One of the reasons for this is that the sector comprises well informed, demanding clients who are able to specify their requirements (Construction Industry Task Force, 1998). Our research reveals that:

• Both the construction industry and the social housing sector stand to gain from improvements in the quality of the service offered by construction firms. Better quality service leads to tenant satisfaction, reduced maintenance costs and fewer administrative costs.

• The social housing sector is in a good position to help construction companies deliver a quality service. It can encourage firms to employ qualified staff, to introduce quality assurance systems and to invest in proper equipment.
• Improving the construction industry helps create jobs and regenerates the economy, which potentially benefits housing association tenants. In 1998, the construction industry employed 1.4 million people and contributed approximately 10% of GDP (Construction Industry Task Force, 1998).

• Small and medium sized construction companies provide training and job opportunities for local people. The business provided by the social housing sector helps construction firms improve the environment in which tenants live, and prevents SMEs from losing out to large, labour-only contractors.

• One of the advantages of dealing with SMEs is that even smaller clients can exercise control over the quality of service provided by construction firms. This is due to the fact that they usually deal directly with top management and can influence strategy development.

4.3 MANAGING TENANTS

Educate Tenants
A significant proportion of calls to housing associations arise from tenants being unable to operate household appliances or undertake routine maintenance jobs such as changing a fuse. In some cases, these problems are passed to the contractor. Housing associations need to reduce the number of unnecessary calls from tenants. This means improving the quality of the service provided by educating tenants in the use of household appliances

• Develop a video to explain to tenants how to use the household appliances in the property.
• Publish a handbook with graphic representations of appliances.
• Hold demonstrations of household appliances for tenants moving into housing association properties.
• Provide a contact number for tenants to report faults. Display the number on the property notice board and inside the property.
• Provide tenants with a list of common faults, along with details of simple things to check prior to contacting the landlord about the fault.
• Ensure information about repairs is available in a range of languages.
• Provide opportunities for tenants to learn about household appliances and repairs from women and ethnic minorities.
“We need to ensure that we hand over the property properly. We perhaps don’t do this as well as we might. We may hand over a manual, but we need to allocate more time to explaining what it says. When we are pressed for time, we don’t do this” (development manager, housing association).

“We are in the process of writing a repairs handbook which will be sent to all tenants. This will provide useful information about the repairs service” (Housing Association News, Winter 1998-99).

**Practical support for tenants**

Housing associations also need to ensure that staff are available to deal with any problems encountered by tenants later during the tenancy. This means providing qualified personnel and support mechanisms designed to deal with maintenance type problems.

- Introduce a tenant help line – 0800 number.
- Set up a DIY training course for tenants. Provide tenants with tool kits and ensure that everyone who completes the course receives a certificate.
- Employ appropriately trained tenants to instruct tenants in the use of household appliances and to undertake simple repairs.
- Provide housing officers with the training and tools necessary to undertake simple repairs.
- Ensure that building materials dry out properly by paying tenants’ heating bills for three months.

One medium sized construction firm found that 6% of the problems it was asked to deal with were due to tenants either damaging the property or being unable to operate heating systems, security lighting and window locks.

The number of calls received by housing associations, which are due to lack of tenant knowledge, is much higher. A housing association has tackled the problem by providing DIY courses for tenants. Tenants receive a free tool kit and a certificate which, in turn, helps improve their employment prospects.
Tenant Involvement and Feedback
Housing associations want to improve the quality of the service offered to tenants across a wide range of issues. To do this, housing associations need to get feedback from tenants about their current and future needs. They should also encourage tenants to contribute to the building design and management processes.

- Ensure tenants are represented on the board.
- Involve tenants in the design process.
- Organise social events for tenants.
- Organise regular meetings for tenants.
- Reward individuals who successfully encourage tenants to participate in meetings and social events.
- Administer a feedback questionnaire to find out whether the property meets tenants’ expectations. Feed back tenants’ comments to the designer, as appropriate.
- Conduct telephone surveys to monitor satisfaction with the repairs service offered by contractors and/or the association.
- Offer free gifts to tenants who participate in postal and telephone surveys.

“Three times as many tenants are now returning questionnaires to us. This is great news as we rely on these questionnaires to tell us if tenants are satisfied with our quality of service. If the questionnaires indicate that the quality is slipping, then we will do something about it!”

“We will be carrying out telephone surveys amongst tenants that have used the repairs service so we can check how satisfied they were with the service they received. Tenants that take part in our telephone surveys will automatically be entered into a free prize draw” (Housing Association News, Winter 1998-99).

Tenant satisfaction questionnaires returned to a housing association revealed that tenants wanted homes with more storage space. This information was passed on to the architect.
**Reward Responsible Tenants**

Housing associations need to encourage responsible behaviour by rewarding tenants who treat properties well and are good neighbours. They also need sanctions that can be taken against tenants who harass neighbours or mistreat properties.

- Provide simple contracts for tenants.
- Define tenants’ responsibilities in the tenancy agreement.
- Provide standard forms for tenants to report non-urgent maintenance problems. Many of these can be dealt with when calls are being made to other properties in the vicinity.
- Reward tenants, who keep their properties in good order and keep appointments, by offering them reduced rents, product vouchers and better service.
- Warn tenants of charges for abortive calls to undertake repairs.

A housing association has introduced a scheme designed to reward responsible tenants. Tenants who pay their rents on time, treat the property well and avoid asking for unnecessary repairs receive a higher level of service from the housing association. Better service includes an annual discount on the rent of £50, product vouchers and being first on the list for modernisation.

**Filtering Calls from Tenants**

Housing associations must ensure that contractors are asked to deal with defects, rather than faults caused by other factors. This is achieved by filtering calls from tenants. They should also pay contractors for dealing with non-defects, as this helps maintain good relations and ensures tenants receive a good service from construction firms.

- Filter calls from tenants by asking standard questions of tenants.
- Provide a diagnostic manual for switchboard staff to identify the cause of problems.
- Pay contractors for dealing with non-defects.
A diagnostic maintenance manual for switchboard staff has helped one housing association reduce the number of visits to deal with maintenance problems and defects.

“We pay contractors for attending to repairs which are not their responsibility. This is only fair. They are in the business to make a profit and we have to respect this. We also have to ensure a good service for tenants and, if the contractor is unhappy about being called out, then this is likely to show” (maintenance manager, housing association).

4.4 MANAGING CONSTRUCTION COMPANIES

Effective Communication and Control
Housing associations are ultimately responsible for the quality of service provided by construction firms employed on social housing building schemes. It is therefore essential for housing associations to communicate effectively with construction companies and to retain control over their actions. This requires associations to issue instructions to contractors and to ensure that they are acted upon. Standard forms are one of the easiest methods of communicating effectively with contractors. If designed appropriately, they can also be used to provide feedback about the cause of faults and the quality of the repairs service.

- Report all defects to the person named in the contract or pre-contract meeting.
- Confirm all communication with the contractor in writing.
- Provide a standard form for contractors.
- Ask the contractor to ensure that the tenant signs the form to say that work has been completed to his/her satisfaction.
- Hold regular meetings with contractors.
Standard form

**Contact** - The construction firm: Name, title, office number, mobile number, fax number, hours available.
Contact for out of hours service:

The housing association:

**Nature of the problem:**
Degree of urgency:

**Communication:** Date and time, people involved.

Signature from tenant to confirm work completed to his/her satisfaction:

**Analysis**

Defect? – contractor’s view: Yes/no/unsure
Completed within time: Yes/no
No unnecessary communication: Yes/no
Defect? – client’s view: Yes/no/unsure
Charges required: Yes/no/unsure

Selecting Quality Contractors

The procurement process needs to be used by housing associations to communicate their requirements and to select contractors who provide a quality service and product. This means ensuring that only those able to meet quality standards are invited to tender for business. The selection of quality contractors not only improves the client’s properties, it also promotes industry-wide improvement.

- Put maintenance defects procedures on the agenda for the pre-contract meeting.
- Ask for information from the contractor about the number of defects on handover with previous construction projects. Take this into account when inviting contractors to submit tenders.
- Outline company procedures for dealing with defects – indicate whether contractors will receive payment for attending to non-defects.
- Find out whether the contractor has a maintenance manager dedicated to defects and whether the firm can provide an out of hours service. Otherwise, discuss the possibility of using housing association maintenance staff or a sub-contractor from housing association approved lists.
• Provide a detailed specification.
• Use a standard form of house, where possible.
• Improve the ability of firms to plan their workload and provide an accurate bid by allowing 5 weeks to tender.

**Contractual Mechanisms**
Contractual mechanisms for ensuring service quality demonstrate that clients are serious about their demands. Some construction managers believe that this rewards contractors who provide a quality service and ensures a ‘level playing field’. Housing associations might consider asking construction companies to guarantee the availability of resources for dealing with defects and to commit to actions designed to improve quality.

• Identify the person responsible for defects in the contract.
• Use pre-contract clauses to ensure contractors are capable of providing a quality service and product.
• Specify equipment designed to improve quality in the contract.
• Specify technologies designed to improve communication in the contract.
• Enforce contractual obligations.
• Allow 2 weeks slippage on project contracts on condition that the contractor ensures the building is defect-free on handover.

“Inspections are often allowed to drift over and often extend into many months beyond the contractual date. To allow this to happen only serves to give our industry a bad image, creates ill feelings and places tenants in potential dangers due to lack of statutory servicing – especially to gas and electrical appliances” (contracts manager, construction company).

During the construction of the Garrard House, power lift equipment and quality scaffolding were used. These were specified in the tender documentation because, though they save costs over the longer-term by improving productivity, they are more expensive to hire (Building, 23.10.98).
**Working in Partnership**
Housing associations and construction firms need to work together to implement many of the steps outlined in these guidelines. They should be considering ways of allocating resources to quality at the outset, implementing good practice, monitoring results and working together to overcome problems and build upon successes. While project partnering helps create the conditions for achieving quality, longer term relationships may be necessary for sustained improvement.

- Set up project partnerships.
- Set up strategic partnerships.
- Partner with suppliers.
- Establish mutual objectives.
- Run workshops.
- Introduce conflict resolution mechanisms.
- Measure contractor performance.
- Establish strategic alliances with other companies who contribute to housing.

> “Our partnering initiative is intended to enable a co-operative style of management for the execution of the works, whereby all the parties to the contract can work together without affecting the contractual requirements and obligations. It will include establishing a forum at the post-tender stage for identifying possible cost savings and solving areas of potential difficulty or conflict before they impinge on the programme and/or cost of executing the works” (technical services director, local authority).

> “It’s fine for contractors to increase their profit margins in partnering relationships, as long as we get what we want. Win-win is the best answer” (development manager, housing association).
5. Sources of Information

5.1 CONTACTS

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Training
Construction Industry Training Board (CITB)
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St Helen’s Campus
Pocket Nook Street
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New Deal
Ms Annie Hopley
Project Manager
Building Positive Action
North British Housing Association
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48 Seymour Grove
Old Trafford
Manchester M16 OLN

Directory of Minority-led Firms
Ms Chris Root
Equal Opportunities Advisor
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Preston
PR2 2YB

Action Learning
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Revans Centre for Action Learning and Research
Maxwell Building,
University of Salford
Salford
M5 4WT
5.2 RELEVANT REPORTS


6. Reader’s Notes

6.1 NOTES ON THE REPORT

This document is designed to be used by companies. This space is for you to note down any recommendations that could be used in your organisation.
# ACTION PLAN

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**Brief notes on results of action**