MASTER

Performance of operational schools in the BSF programme in England

performance assessment of operational schools in the 'building schools for the future' programme

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Performance assessment of operational schools in the ‘Building Schools for the Future’ programme

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Preface

This document contains a research on the performance of operational schools in the ‘Building Schools for the Future’ (BSF) programme. This research is focusing on the performance assessment of secondary school estates in the post-occupancy phase of BSF projects.

The report is the final report of the research project. The research project is a dissertation project of the CME master’s programme. CME stands for Construction Management & Engineering and is attached to two departments at Eindhoven University of Technology. These departments are Technology Management (TM) and Architecture, Building & Planning (ABP). The CME master’s programme takes two years. After completion of the programme the student will receive the university degree Master of Science (MSc). The programme focuses on the processes, the market parties concerned, the technical business characteristics and the innovative technical characteristics of the construction industry and its surrounding. It is completed with a dissertation project of 30 ECTS (European Credit Transfer and Accumulation System). This takes exactly one semester, 30 ECTS. The dissertation project results in the delivery of a Master Thesis. Both this dissertation project and this Master Thesis are completed in cooperation with the University of Reading.

The Master Thesis is written for the supervisors involved in the dissertation project and for stakeholders of the BSF programme which are interested in the outcomes of project (interviewees and Pfs). In this way, supervisors can gain insight into the research of this dissertation project. BSF stakeholders can use results from this research within their BSF projects. The dissertation project has been completed with this report and it will be supported by a final presentation at Eindhoven University of Technology.
List of abbreviations

BSC  Balanced Scorecard
BSF  Building Schools for the Future
BSFI Building Schools for the Future Investments
BVfM  Best Value for Money
CSF  Critical Success Factor
CIP  Continuous Improvement Plan
CIT  Continuous Improvement Targets
DBFMO Design-Build-Finance-Maintain-Operate
DCSF Department for Children, Schools and Families
FM  Facilities Management
KPI  Key Performance Indicator
LA  Local Authority
LEP  Local Education Partnership
PFI  Private Finance Initiative
PfS  Partnerships for Schools
POE  Post-occupancy Evaluation
PPP  Public Private Partnership
PSP  Private Sector Partner
PUK  Partnerships UK
SCM  Supply Chain Member
SEN  Special Educational Needs
SfC  Strategy for Change
SPA  Strategic Partnering Agreement
SPB  Strategic Partnering Board
SPV  Special Purpose Vehicle
VfM  Value for Money
4ps  Public Private Partnership Programme
Summary

The BSF programme is a secondary school renewal programme initiated by the UK government to transform existing secondary schools into world-class learning environments that will enable generations of young people to reach their full potential. The programme started in 2003. About 3,500 schools will be (re-) build or refurbished during the 10 to 15 year period of the programme. The first fifty schools have been delivered and in operation (www.partnershipsforSchools.org.uk).

In order to deliver better outcomes in the BSF programme, the performance of the involved stakeholders need to be optimised. Seven performance assessment instruments are being used in the BSF programme to measure and optimise performance. These instruments are mainly focusing on the development process of a school estate. It is not clear what the performance is when a school estate is in operation. There is no designated performance measurement instrument available for the post-occupancy phase of school estates. Therefore, it is unknown if stakeholders’ key value objectives are still being met during the post-occupancy phase of a building. This research project will answer the following main research question:

*How can stakeholders' key value objectives being met during the post-occupancy phase of a school estate within the 'Building Schools for the Future' (BSF) programme?*

A Post-occupancy Evaluation (POE) is undertaken to determine the quality of delivered school estates and to answer the foregoing question. This POE is an investigative POE, which includes a survey and interviews. Key performance indicators (KPIs) are being measured in the POE together with Critical Success factors (CSFs). KPIs are general indicators of performance focusing on critical aspects of outputs or outcomes. CSFs are the few key areas in an organisation or project which have to work well to be successful. Both concepts will be measured in a POE to determine the performance of delivered school estate, and are implemented in a Balanced Scorecard (BSC). The BSC is an assessment instrument and POE tool for future school estates in the BSF programme. It measures if the outcomes of BSF projects are aligned with its larger-scale objectives in terms of vision and strategy.

Conclusion from the investigative POE are: (1) quality of FM is in some local BSF projects below the target level, (2) BSF projects are exceeding the budget limits and construction time, (3) some LAs do not have enough capacity to run the BSF programme and have a weak position, (4) responsibilities of stakeholders during post-occupancy phase are not clearly divided, (5) there is a lack of communication in some local BSF projects, (6) in general school representatives rate the importance of KPI’s and the performance of buildings on KPI’s lower than LA representatives, and (7) there is a drawback of PFI projects, because due to the current economic climate (www.partnershipsforSchools.org.uk; www.teachernet.gov.uk), private funders are not able to finance local BSF projects anymore.
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1. Introduction

The 'Building Schools for the Future' (BSF) programme is the field of interest for this research project. The key problem exists within this programme and it will be described in this chapter. A main research question has been formulated together with sub questions to fulfil the research on this problem.

1.1 Problem context

Authorities and private parties are investing in secondary schools in the United Kingdom. The BSF programme is a project initiated by the UK's government. The 'Department for Children, Schools and Families' (DCSF) launched the programme in February 2003 to transform existing secondary schools into world-class learning environments that will enable generations of young people to reach their full potential. About 3,500 schools will be renewed or refurbished and the programme will influence approximately 3.3 million pupils between 11 and 19 years (4ps & PfS, 2008). The total capital investment in schools was £6.4 billion in 2007/2008 and will be approximately £8.2 billion in 2010/2011 (PwC, 2008). The BSF programme will last 15-20 years.

'Partnerships for Schools' (PfS) is a non-departmental public body, responsible for delivering the BSF programme. PfS is a joint venture between the DCSF and 'Partnerships UK' (PUK). PUK works exclusively with and for the public sector. It is established by the government to accelerate the development, procurement and implementation of public private partnerships (PPPs). Strong PPPs have been set up with help of PfS to realise local BSF projects. It enables the public sector to benefit from skills and expertise available in the private sector and reach the optimal result (4ps & PfS, 2008; www.partnershipsforSchools.org.uk).

The PPP which is set up for realising a local BSF project within a defined local area is called a Local Education Partnership (LEP). The LEP is a formal partnership between a Private Sector Partner (PSP), a local authority (LA), and PfS/BSFI (Figure 1.1). The LA comes to an agreement with the LEP to define the business, key terms, and details of the partnership (4ps & PfS, 2008). In this way, the LA has a role as client and commissioner. The user is a different party. This is the school community (teachers, students, etc.). The agreement between the LA and the LEP is called the Strategic Partnering Agreement (SPA). It gives the LEP the exclusive rights to deliver schools and other public estate in a defined local area for a fixed period of 10 to 15 years. The LA will formally consult with stakeholders, including school and partners, through the Strategic Partnering Board (SPB).
Approximately 150 Local Authorities (LA) are grouped into 15 'waves'. These waves are launched on approximately an annual basis. A LA can take part in several waves. The number of appearances in several waves is depending on the scale and condition of its schools (PwC, 2007). About 50 schools have currently been realised and are in operation until March 2009 (www.partnershipsforschools.org.uk; www.teachernet.gov.uk). Projects in wave 6 were in progress at that time. An up-to-date overview of the progress of the BSF programme is available on www.partnershipsforschools.org.uk/programme/progress.jsp.

Due to economic circumstances there are some changes in this approach. The waved allocation of Local Authorities to BSF funding will stop after wave 6. The BSF programme will no longer make use of waves. Other changes and the influence of the current economic situation will be explained in further detail in chapter 8.

1.2 Problem definition

Performance requirements of users and stakeholders are set before and during the development process. Seven performance management instruments are being used in the BSF programme to measure and assess the achievement of these performance requirements (PfS, 2008). These instruments are explained in chapter 4. The focus of these instruments is mainly lying on the development process of the school estate. It is not clear if the school estates really work in practice. There is a performance measurement instrument available for
assessing the school's organisation during operation, but there is no designated performance measurement instrument available for the building itself (www.dcsf.gov.uk/valueformoney/).

The problem definition is therefore as follows:

*It is unknown if stakeholders' key value objectives are still being met during the post-occupancy phase of a building.*

The stakeholders' key value objectives are the objectives stated in the SPA and the 'Strategy for Change' (SfC) document. One of the objectives is to create world-class learning environments that will enable generations of young people to reach their full potential. The post-occupancy phase is the phase after the delivery of the building. This is the phase when a school is in operation as an estate and as an organisation.

1.3 Main research question

This research project will answer a main research question. To do so, a number of sub questions are being developed. These sub questions support and justify the answer on the main research question. The main research question is as follows:

*How can key value objectives of stakeholders being met during the post-occupancy phase of a school estate within the 'Building Schools for the Future' (BSF) programme?*

The above-mentioned research questions follows from the problem definition defined in paragraph 1.2. 'Key value objectives' are the targets set in the initiation phase.

1.4 Sub questions

The following sub questions support the answer to the main research question. You can find a brief clarification below the sub questions.

SQ 1  *What are the stakeholders’ key value objectives and how can these key value objectives be determined?*

SQ 2  *How can these objectives be measured during the post-occupancy phase of a BSF school?*

SQ 3  *At what levels should key value objectives be measured in BSF projects?*

SQ 4  *How can results of the post-occupancy measurement be used to improve the business of future LEPs?*
SQ1
The stakeholders’ key value objectives need to be measured. It is not known what these stakeholders’ key value objectives are and how these can be measured. Therefore, this needs to be determined first.

SQ 2
There needs to be a way to measure the key value objectives during the post-occupancy phase. This will be done after the key value objectives are determined.

SQ 3
It is possible to measure the key value objectives at different levels and what are these levels?

SQ4
It might be useful to apply the performance measurement results in the post-occupancy phase during the operation of a LEP, or for future LEPs to improve its business. At present it is unclear how this can be done.
2. Methodology

In chapter 2 it will be explained what methodology has been used for this research project. The research approach, project plan, organisation and the data retrieval will be described in the following paragraphs.

2.1 Research approach

The research project has been set up following the ‘regulative cycle’ by Van Strien, 1997 (Figure 2.1). This approach is also known as ‘inductive reasoning’.

Figure 2.1: The ‘regulative cycle’ (Van Strien, 1997).

The research project starts with a ‘problem mess’. A ‘problem definition’ follows from this mess. Both boxes drive the research project and, therefore, are the foundation of the research. These two steps are defined in paragraph 1.1 and 1.2. An ‘analysis and diagnosis’ on the subject take place after the problem is defined. A literature study and a survey are part of this ‘analysis and diagnosis’. This step results in a ‘plan of action’. The delivery of a performance measurement instrument belongs to the ‘plan of action’. This instrument can be implemented in the ‘intervention’. Afterwards, the cycle has to be ‘evaluated’. Then, it can be followed up by a new problem or cycle.
2.2 Project plan
A project plan has been made at the beginning of the research project. The project plan is based on Van Aken, Berends & Van Der Bij (2007). It supplements the 'regulative cycle' of Van Strien (1997) described above in paragraph 2.1. The project plan for this project is given below:

1. Literature review; a literature review in the field of stakeholder analysis and performance management in long-term large-scale construction projects.
2. An analysis of the phenomenon within the involved company/business sector. Causes and effects of certain problems will be determined.
3. A diagnosis will be determined and discussed with involved parties.
4. Alternative directions for solutions need to be developed.
5. Feedback has to be assembled about the diagnosis and alternative solutions from involved parties. A choice of redesign direction needs to be made.
6. Literature and data has to be found to support the redesign of alternative solutions.
7. Elaborate the chosen solution into an object design and realisation design.
8. Support for designs needs to be created under stakeholders and involved parties.

Data and information for the analysis and literature review arise mainly from (scientific) literature, a survey, and interviews. References being used are listed in chapter 7. These contain scientific articles and books, and also reports published by parties involved in the BSF programme and the websites of these parties. The main part of the analysis and diagnosis consist of a survey. This survey questionnaire has been distributed to people involved in the BSF programme. Details on the survey are outlined in chapter 5.

2.3 Organisation
The execution of this research project has been performed by the author of this report, Marcel Sanders. This project is the dissertation project of the master's programme of Construction Management & Engineering at 'Eindhoven University of Technology'. A scientific committee is responsible for the judgment of the dissertation project. The committee consists of two representatives of 'Eindhoven University of Technology' (TU/e) and one representative of 'University of Reading' (UoR).

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*prof. C. Gray (UoR) (non-formal)*
A delegated person from a private party is involved as supervisor during the execution of the research project. This person is working for a consultancy and construction management company in England.

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Together, these persons fulfil the function of a board of advisors during the execution of the research project.

2.4 Case study research

A case study research will be used in the project plan of section 2.2, because the BSF programme is a unique project and there are sufficient cases available. There is not enough theoretical knowledge available for the BSF programme specifically. A case study suits the BSF programme at best, because there is a focus on a contemporary phenomenon/project within its real-life context and boundaries between phenomenon and its context are not clearly evident (Yin, 2003). A case study is also applicable when many variables of interest and multiple sources of evidence are available.

This research will make use of qualitative study with multiple cases, because the performance assessment of the whole BSF programme is of interest in this research. Yin (2003) describes three different types of case studies. These are:

- exploratory case studies;
- descriptive case studies;
- explanatory case studies.

**Exploratory case study**

Exploratory case studies are considered as a pre-research to the main research, like pilot projects. Fieldwork and data collection may be undertaken prior to the development of the research questions. Surveys may be used for this. Finding cases for this kind of study is difficult. The cases that are selected should be easy and relevant subjects.

**Descriptive case study**

Descriptive cases require are initiated with a descriptive theory or a possible problem that can occur during the future of the project. Several states and cases are studied. The data of each situation are compared to discover theoretical patterns. This type of study is meant for the formation of hypotheses of cause-effect relationships. Therefore, the descriptive theory must cover the depth and scope of the case under study.

**Explanatory case study (causal study)**

These studies start with an existing theory or problem. The descriptive case study makes use of complex and multivariate cases. This is the applicable to the BSF programme. The study
can not only unveil patterns and trends, but also causes. The outcomes can be used following three theories (Yin, 2003): knowledge-driven theory, problem-solving theory, and social-interaction theory. The knowledge-driven theory means that ideas and discoveries from the research eventually become commercial products. Problem-solving theory follows the same path, but with an external source identifying a problem. The social-interaction theory claims that researchers and users belong to overlapping professional networks and are in frequent communication.

This research project follows the explanatory case study (causal study) of Yin (2003) with the problem-solving theory.

Selection of cases
A survey and interviews make part of this research. Several cases are needed for that. The selection of cases has been determined by the completed school estates. All the school estates which were already in operation in January 2009 are possible cases. The LAs with possible cases are given in section 6.1. All LAs and schools have been approached to cooperate in this research and stakeholders per LA are determined. These stakeholders are representatives of:

- schools;
- LAs;
- LEP;
- contractors;
- PfS.

2.5 Research constraints
The research is bounded by the cases involved in this research. Only school estates in operation make part of the research, because it is a research involving buildings in the post-occupancy phase. A questionnaire is therefore the best option to gather data from 50 schools and 9 LAs fast and accurately. Interviews are additional to the questionnaire to confirm information and to gather in-depth details.
Besides the cases, the research is bounded by the execution of it. The research is bounded by time (5months) and the amount of people working on this project (1 person).
3. Post-occupancy evaluation

Seven performance assessment tools are being used in the BSF programme to measure the performance. As mentioned before in this report, most of these instruments mainly work during the development and construction process of the school estates. The performance assessment during the operational phase of a school estate is limited. The LEP is responsible for the performance criteria mentioned in the SPA. An evaluation of a building during the operational phase is in literature also known as 'post-occupancy evaluation' (POE).

3.1 What is a post-occupancy evaluation (POE)?

A POE is a qualitative study using building professional and building user knowledge to evaluate a building in the operational phase. It is a diagnostic tool and system which can identify and evaluate critical aspects of building performance systematically (Preiser, 1995). In this research the study has an emphasis on a school building rather than the quality or variety of service provision or the outcomes for the children (CABE, 2008).

Preiser (1995) defines a POE as follows: "Post-occupancy evaluation is the process of systematically comparing actual building performance, i.e., performance measures, with explicitly stated performance criteria. These are typically documented in a facility program, which is a common pre-requisite for the design phases in the building delivery cycle. The comparison constitutes the evaluation in terms of both positive and negative performance aspects".

It is important to undertake a POE to ensure that a building has been built in line with the design specifications and is satisfactorily for the end user(s). Feedback and the opportunity to resolve problems on time will increase the quality and performance of a building (Preiser, 1995). This is not only important to the end user(s), but also to other stakeholders, for example the LA client, PSPs, Supply Chain Members (SCMs), Financiers, PfS, and LEPs. It is not just the built asset that counts in the BSF programme, but the focus is lying on the performance of the whole school community and educational environment. This community or environment can be improved by using feedback from POEs of earlier completed BSF projects.

A range of techniques can be used to undertake a POE, e.g. questionnaires, interviews, focus groups, inspections, measurements, and observations (Jaunzens et al., 2002). The relevance of a technique and what technique to use depends on (Jaunzens et al., 2002):

- the level of detail required in any resulting report;
- the level of information available to support an evaluation;
- the amount of funding available balanced against the expected payback;
- the skill levels of the people who will be undertaking the tasks;
- the degree to which a problem/evaluation has already been identified.
The evaluation and techniques mentioned above can be applied within the first 12 months of operation and after that on an ongoing basis. A POE during the first 12 months of operation can identify early issues. Afterwards it is important to ensure continuing satisfaction and to highlight areas where improvements can be made (Preiser et al., 1988). For the BSF programme it might be useful to observe problems which can be prevented in future projects delivered through the BSF programme.

The occupancy phase is the last phase of the building process (Figure 3.1). One or more of the techniques mentioned above can be used as a performance measurement tool during this phase. The measurement generates information about the completed building. This information can be stored in a database or information management system. Architects, Project Managers and other stakeholders retrieve performance criteria from the database to set and achieve goals. These goals can be adopted in the current project or in a new project. In this way the performance and quality of buildings could be improved.

As mentioned above, performance criteria are compared with performance measures. The distinction between those two concepts is the outcome of a post-occupancy evaluation (Preiser et al., 1988). Figure 3.2. The outcomes are a matter of concern in current and future projects. Results of POEs are input for these projects. The outcomes of a POE are split into three perspectives in figure 3.2:

- short-term feedback;
- medium-term direct input;
- long-term feed forward.
The short-term feedback flows straight to existing construction projects. Short-term problem shooting will prevent slight problems in the operational phase of the buildings already in question. Medium-term direct input is concerning the next building cycle. This is for example in the BSF programme the next school to be built by the same LEP and contractor. The long-term feed forward is the information stored for future projects and creating state-of-the-art design criteria.

Figure 3.2: POE in the building delivery process (Preiser et al., 1988).
3.2 What levels of POE are available

It is possible to undertake a POE at different levels. Preiser (1988, 1995) distinguishes three levels of research. These levels are (1) indicative, (2) investigative, and (3) diagnostic. The levels will be described below.

*Indicative POE*

An indicative POE is a short and quick evaluation which appoints the main problems. This POE will be used when there is a lack of time and there is no need to know the cause of certain problems. These problems are identified very soon and people responsible for the case can deal with it in short-term. Techniques being used for this kind of POE are interviews with key personnel, group meetings with end-users, and inspections on-site.

*Investigative POE*

Investigative POEs are more in-depth than indicative POEs. Instruments used for this kind of POEs are interviews and survey questionnaires. Photographic/video recordings and physical measurements are additional. Most of time investigative POEs concern more than building. In this way it is possible to spot trends.

*Diagnostic POE*

A diagnostic POE is an extensive research. It is a long-term study in order to determine the cause(s) of certain problems. This evaluation is also known as a longitudinal and cross-sectional study. Many aspects of many buildings are investigated in great detail. This evaluation is not suitable during the first 12 months of operation. Instruments for this type of evaluation are numerous. In-depth research, interviews, and meetings with different stakeholders are useful.

3.3 POE in the BSF programme

No POE has been undertaken in the BSF programme so far (PwC, 2008). PricewaterhouseCoopers will publish the first results of any POEs in January 2010. This research could be seen as a predecessor investigation of POE in order to explore common problems whilst projects in the BSF programme are progressing and to spot trends eventually.
4. Performance management

The BSF performance management instruments will be discussed in this chapter. Also, the concepts of the Key Performance Indicators, Critical Success Factors, and the Balanced Scorecard are explained.

4.1 BSF performance instruments

A LEP has two core activities (PfS, 2008; Vermeer, 2006). These can be classified into the following core activities:

- New Project Development; developing new projects which are suitable for future process steps in the BSF programme.
- Delivery of Approved Projects; delivering projects, by the use of a supply chain, which are approved by the LEP and LA.

Seven performance instruments are being used in the BSF programme:

- Track Record and Key Performance Indicators Test;
- Continuous Improvement Plan;
- Benchmarking Procedure;
- Market Testing Procedure;
- Value for Money Assessment Tool;
- Partnering Service Specification;
- Collective Partnership Targets.

The performance instruments will be explained very briefly below (PfS, 2008).

*Track Record and Key Performance Indicators Test*

A LEP is in this case evaluated on the issue of a good track record. This track record concerns the delivery of previous approved projects. The exclusivity of the LEP is guaranteed when all Key Performance Indicators (KPIs) have been met.

*Continuous Improvement Plan*

The plan contains Continuous Improvement Targets (CIT), which are set for the initial project and all the New Projects. These performance targets are set from the initial procurement in the SPA and revised from time to time. CIT are KPI targets, also used in the KPI test. Long-term Value for Money (VfM) can be achieved if these targets are met.

*Benchmarking Procedure*

The cost of a New Project is compared with the costs of initial projects, costs of future projects and PfS benchmarking data. In this way, the LA and the Strategic Partnering Board (SPB, pg. 1) measure if a New Project delivers Best Value for Money (BVfM) and decide if exclusivity is guaranteed. BVfM is the proposal which produces the best project at an
'acceptable' cost. It does not mean the cheapest option, but the best option. The LEP has the exclusive rights to realise local BSF projects for 15 years if performance and BVfM is delivered.

**Market Testing Procedure**

Exclusivity to the LEP will be granted, when BVfM is delivered by the LEP. This means that the proposal needs to be the best option for 'acceptable' cost. The client has to pay market prices based on fair competition. The proposal needs to meet strategic requirements, offer Value for Money, and affordability. This will be determined by a retendering procedure of specific elements of the contract. LA requirements, service benchmarks and costs will be assessed in the market by use of the Tender Evaluation Methodology.

**Value for Money Assessment Tool**

This instrument is used by the client (LA). It is a decision-making tool, which assesses the potential VfM of procurement options. The tool is equivalent to the former Public Sector Comparator model. It will be performed at three levels: programme level, project level, and procurement level.

**Partnering Service Specification**

The Partnering Services Specification should set out clearly the partnering services to be provided by the LEP to the LA. It also sets out the roles and responsibilities of the LA. Exclusivity is granted when all services or a substantial part have been satisfied.

**Collective Partnership Targets**

Collective Partnership Targets will be defined along with the SPB during the development of a LEP. The LEP has to report annually to the SPB to assess the performance. The exclusivity is granted if a substantial part of the Collective Partnership Targets is met.

A more detailed description of these instruments can be found in PFS (2008). It is clear that a lot of the instruments focus on the development and construction process, and the partnering aspect. There are some aspects of the Track Record & KPI Test and the Continuous Improvement Plan, which focus on a school estate during the operational phase, however this is only limited.

The Ofsted undertakes independent inspections and research annually in the United Kingdom. It stands for “Office for Standards in Education, Children’s Services and Skills”. Inspections are done annually, but the focus is lying on the educational performance rather than the performance of school estate. Therefore, there remains a lack of information about the performance of school estates during the post-occupancy phase in the BSF programme.
4.2 Key Performance Indicators vs. Critical Success Factors

One of the methods to measure performance is Track Record & KPI Test. KPIs are general indicators of performance focusing on critical aspects of outputs or outcomes. The performance of organisations or projects are being measured and analysed in this way (Chan & Chan, 2004). A KPI has to be accurate and indicative for a certain project. Performance can be measured optimally when KPIs are set SMART:

- **Specific**: a KPI should define exactly what needs to be measured;
- **Measurable**: it needs to be possible to measure a KPI and to compare with other values;
- **Achievable**: a KPI should be realistic and achievable or else the organisation will not cooperate to realise the goal;
- **Relevant**: a KPI has to give an insight in the performance of the organisation, else it is useless and irrelevant to use;
- **Time phased**: KPIs should be expressed in time or else it is not clear within which period a KPI should be realised.

Targets are set for each KPI during the initiation of a project. The actual/realised values of the KPIs are measured when a project has been completed. The target and the actual value of the KPI are compared to determine the performance, just like the comparison of the 'performance criteria' and 'performance measures' in figure 3.2. This defines the actual performance in the end.

KPIs are often used together and mixed up with Critical Success factors (CSFs). "CSFs are the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department or organisation. CSFs are the few key areas where 'things must go right' for the business to flourish and for the manager’s goals to be attained" (Rockart & Bullen, 1981, pg. 7). The strategy of an organisation is translated into objectives. These objectives are CSFs. A project strategy’s success depends therefore on the achievement of CSFs’ targets. CSFs are on a higher and often abstracter level than KPIs. KPIs are more tangible and most of the time used to express CSFs in distinct targets. It is possible that there is more than one KPI per CSF. The level of hierarchy is described in figure 4.1.

The KPI Test of a single BSF project within a LEP contains generally about 35 KPIs. This number can differ per project. The LEP and Local Authority are allowed to add more KPIs as relevant to the project. The objectives in the KPI test are actually the CSFs as described by Rockart & Bullen (1981). The names used within the KPI Test are therefore not consistent with literature, but will still be used during this project to prevent misunderstanding with BSF stakeholders.
4.3 Balanced scorecard

There is a tool available in literature to translate an organisation's strategy into tangible targets which can be measured. In fact, it covers figure 4.1 entirely. This tool is called the Balanced Scorecard (BSC). It is developed by Kaplan & Norton (1996 & 1998) to assess performance of organisations. Besides that, it is also applicable to construction projects and buildings. The BSC translates the vision and strategy of an organisation/project into objectives and targets. The main feature of the BSC is that it does not only assess performance on financial figures, but also non-financial performance indicators. According Kaplan & Norton (1996 & 1998) it is possible to assess the total performance by dividing objectives into four perspectives. These objectives are:

- Financial perspective;
- Customer perspective;
- Internal Business Processes perspective;
- Learning & Growth perspective.
Financial perspective
Accurate and reliable financial data is always important when performance needs to be assessed, but it should not be the only perspective being used. A balance between four perspectives needs to be found. That is why the tool is called the Balanced Scorecard.

Customer perspective
Customer satisfaction is important. The client or user is connected to a product or service for years and if the product is not satisfying, the client will try to find another supplier. This perspective is a good indicator for the future. Bad performance will result in a decline in demand in the future. Therefore, an organisation needs to focus on the client/user.

Internal Business Processes perspective
This perspective shows how well an organisation is running. The business processes need to be effectively, efficiently, and in compliance with the strategy and vision. With help of this perspective, the business processes will deliver what the customers expect.
Learning & Growth perspective
The Learning and Growth perspective focuses on the internal skills and capabilities of individuals and the organisation. It focuses especially on the improvement of these skills and capabilities to improve products and the organisation. Objectives of this perspective are mostly the intangible assets of an organisation. This perspective is also called the 'Innovation perspective'.

There are four items mentioned in every perspective as shown in figure 4.3. These items are (Kaplan & Norton, 1996 & 1998):
- Objectives (strategic objectives);
- Measures;
- Targets;
- Initiatives.

Strategic objectives are being determined for all four perspectives. These objectives are the things an organisation needs to fulfill to achieve the results it wants to achieve and it expects to achieve. The strategic objectives are most of the time intangible and can be described as the CSFs of Rockart & Bullen (1981). Measures can be identified to make these objectives tangible and measurable. Targets are then being set for these measures. This can be done for one whole organisation, but it is also possible to translate these measures and targets to an individual level or to a level for a business group or task group (Kaplan & Norton, 1996 & 1998). Initiatives are those activities which are undertaken to accomplish a target.

In this way it is possible to translate an organisation’s vision and strategy into tangible targets. A BSC can be implemented on every level of an organisation or project (i.e. an individual level, a business group or task group level or a whole organisation). Therefore, it is also possible to translate the following vision of the British government into tangible targets for school estates in the post-occupancy phase:

Transform existing secondary schools into world-class learning environments that will enable generations of young people to reach their full potential.

An example of a BSC used by a supplier of electronic systems is given in the attachment 1. The following chapter discusses how the CSFs, KPIs, and perspectives can be determined for the BSF programme.
5. Survey

This chapter explains the survey methodology used for gathering data in this research project. The survey is also explained in more detail. It is distributed by e-mail, but the whole survey is available in attachment 2.

5.1 Why using a survey?

The reasons for using a case study research for this research project is mentioned in paragraph 2.4. An investigative POE is held in order to appoint common problems in the beginning of the BSF programme and to spot trends. A questionnaire is used supported by interviews, because of the availability of funding for this project. Besides, the project is bounded by the amount of people working on this project (1 person). As operational schools are widely spread over the UK it is also very time consuming to visit all these schools and to interview key stakeholders. Representatives of PfS, schools, and LAs were not willing to be interviewed, because it is time consuming. A survey is less time consuming and it is more likely that people will participate. Completing the survey takes five to ten minutes.

Through survey research, data can be gathered fast and it is viable. The research project is constraint by time. It has to be finished within 5 months. Therefore, an investigative POE has been undertaken through survey research. There was not enough time to undertake a diagnostic POE. The survey has been issued to 195 e-mail addresses of people involved in the BSF programme. These people are representatives of LAs, private partners, public partners, PfS, and schools. These disciplines broadly contain most key stakeholders involved. An online survey has been utilised to contact as many stakeholders as possible. An invitation e-mail has been sent in advance.

5.2 Lay-out of the survey

This survey is based on Dillman (2000) and is enclosed in attachment 2. The survey is roughly divided into five parts:

- Personal details;
- Identifying CSFs/perspectives/areas of assessment;
- Identifying KPIs;
- Determining quality of a school estate in question;
- Identifying responsibilities;

Personal details

Participants have been asked to provide personal details due to receive the results of the research afterwards. It is also important during the analysis to categorise answers of respondents and to check the reliability of answering groups.
Identifying CSFs / perspectives / areas of assessment
This part of the research determines the areas of assessment which can be implemented in the BSC. Participants have to rate the areas of assessment. The following scale is used (Dillman, 2000): (1) very unimportant, (2) unimportant, (3) moderate, (4) important, and (5) very important. The CSFs can be derived from these answers. There is a possibility for respondents to add ideas by the use of an open ended question (Are there other aspects you should base the performance measurement on?). Nine CSFs are listed to be rated/ranked by the participants, but the opportunity exists to add CSFs by participants themselves through the open ended question.

Identifying KPIs
CSFs can be split into different KPIs (Figure 4.1). These KPIs can be implemented in the BSC, just like the CSFs. The KPIs are identified by use of a matrix question (Dillman, 2000). Twenty-three features are listed, which can be rated by use of the following scale: (1) very unimportant, (2) unimportant, (3) moderate, (4) important, and (5) very important. As with the CSFs, here there is also the opportunity to add features by the participants themselves.

Determining quality of a school estate in question
The quality of the school building during the post-occupancy phase is determined by several questions. These questions are about the particular school a participant is involved in. Firstly, the same features of the previous question are listed except two features: communication and sustainable building process. These were irrelevant for the post-occupancy phase. Participants have to rate the features for their school by using the following scale (Dillman, 2000): (1) very bad, (2) bad, (3) moderate, (4) good, and (5) very good. The participants have been asked to rate the school with an overall score from 0 to 10. There are two open ended questions to mention the most positive and most negative features during the development process of the school building. These questions are again followed by a multiple-choice question. Participants have to rate phases of the development process within the BSF programme. Also here, the scale is (1) very bad, (2) bad, (3) moderate, (4) good, and (5) very good. Finally, participants were asked to give an overall score of development process of the school estate (0-10).

Identifying responsibilities
The survey ends with a matrix question about the responsibilities of parties involved during the post-occupancy phase. Eight aspects of the post-occupancy phase are listed. Participants were asked which party is responsible for every aspect.
6. Findings: results from the survey

The findings of the research are provided in this chapter. The findings are generated from the online survey and its additional interviews. Interviews are taken after the respondents completed the survey. The completed surveys and results are in attachment 3 and 4.

6.1 General information

The online survey was sent to 195 e-mail addresses of participants involved in BSF projects. These include people from completed schools in operation for the following Local Authorities (LAs) in England:

- Bradford
- Bristol
- Lambeth
- Lancashire
- Leeds
- Manchester
- Newcastle
- Solihull
- Waltham forest

The target group received the survey by e-mail on the 20th April 2009, followed by three reminders. Respondents had the possibility to complete the survey until 15 May 2009. During this period 16 respondents had completed the survey, at of a population of 195. The respondents and the population, which received an invitation, are given in attachment 5 & 6. The LAs and the number of respondents per LA are given in figure 6.1. There were no respondents from Lancashire and Solihull. But still the respondents represent a significant spread over England.

Figure 6.1: LAs of respondents.
Bradford and Bristol are BSF pathfinder projects, which were launched in April 2004. Lambeth, Leeds, Manchester, Newcastle, and Waltham Forest are part of Wave 1. Pathfinder projects are the first projects of the BSF programme, which were launched in April 2004 as pioneering projects of the BSF programme. The rest of the local BSF projects are divided in 'waves'. All local authorities are grouped in one of 15 'waves', which are launched on approximately an annual basis (www.partnershipsforSchools.org.uk). The 'waves' determine when local BSF projects start.

Respondents are working in different organisations (Figure 6.2). Many of the respondents are working for a school. The job description of these people is Headteacher/School Head, Deputy Head or Business Manager. There are also six people working for LAs. These are members of the LA's BSF team. One respondent is member of a LEP. The other two respondents are a Business Development Director of a UK contractor and a design/architect specialist of PfS.

Figure 6.2: Categories of respondents.

The majority of the respondents were end-users. This could be because the research is focussed on end-user experiences of operational schools. Builders and contractors may be working on other projects already and therefore have a limited interest. End-users however may be more willing to participate, because they might wish to draw attention to some good or dysfunctional elements of their school.
6.2 CSFs and KPIs

The first research/survey question was about the importance of certain aspects. The Critical Success Factors (CSFs) follow from this question. Respondents could rate the level of importance for the following nine aspects:

1. Financial aspects
2. Customer & User aspects
3. The Business Process(es) within the LEP (Local Education Partnership)
4. Innovation within the LEP
5. Sustainable aspects
6. Educational aspects
7. Partnering aspects (relationship between school, local authority, contractors and other stakeholders)
8. Quality aspects
9. Safety aspects

These aspects are based on the four perspectives of Kaplan & Norton (1996 & 1998) complemented with areas of assessment in the Track Record & KPI Test (PfS 2008).

Figure 6.3: How important are the following areas of assessment?

The conclusion from this figure is that educational aspects are the most important according to the respondents followed by quality and safety aspects. This is also based on the average scores. These are given below (table 6.1). Respondents rated the aspects with the following scale:

5 = Very important, 4 = Important, 3 = Moderate, 2 = Unimportant, 1 = Very unimportant
Table 6.1: Average scores of the areas of assessment (CSFs).

<table>
<thead>
<tr>
<th>Areas of assessment (CSFs)</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Financial aspects</td>
<td>4.40</td>
</tr>
<tr>
<td>2 Customer &amp; User aspects</td>
<td>4.67</td>
</tr>
<tr>
<td>3 The Business Process(es) within the LEP (Local Education Partnership)</td>
<td>4.20</td>
</tr>
<tr>
<td>4 Innovation within the LEP</td>
<td>4.47</td>
</tr>
<tr>
<td>5 Sustainable aspects</td>
<td>4.53</td>
</tr>
<tr>
<td>6 Educational aspects</td>
<td>4.93</td>
</tr>
<tr>
<td>7 Partnering aspects (relationship between school, local authority, contractors and other stakeholders)</td>
<td>4.73</td>
</tr>
<tr>
<td>8 Quality aspects</td>
<td>4.87</td>
</tr>
<tr>
<td>9 Safety aspects</td>
<td>4.73</td>
</tr>
</tbody>
</table>

The business processes within the LEP and financial aspects are less important to the respondents. Of course, the composition of the respondents may have influenced the result as shown above. The results can then be considered as the opinion of the user group. Three respondents used the open-ended question to add specific aspects of importance. Two answers were concerning Facilities Management (FM) and its impact on educational processes. Another answer was concerning community and stakeholder perception. The FM aspect will be considered later on in this report, because it has become of great interest in the rest of the survey and the interviews.

Key Performance Indicators (KPIs) are rated in the same way as the areas of assessment (CSF). The KPIs are given below. Respondents could also add their own thoughts by use of an open-ended question, but nobody made use of this possibility.

1. Reasonable building costs
2. Reasonable lifecycle costs
3. Communication between involved parties
4. Sustainable development of the building
5. A sustainable building
6. High quality of design
7. Time needed to develop the building
8. Access to building and facilities
9. Decoration inside and outside the school
10. Good furniture in the building
11. Available catering
12. High quality Facilities Management
13. Available ICT facilities
14. Available sports facilities
15. Available cultural facilities (Art, music, etc.)
16. Daylight inside the building
17. Available fresh air/air-conditioning
18. Good functioning heating
19. Enough space available in school
20. A safe building and environment
21. A multifunctional & flexible building
22. Convenient access of public transport
23. Educational performance
Previously mentioned KPIs are generated with help of the Track Record & KPI Test (PfS 2008) and different Post Occupancy Evaluations (POEs) (CABE, 2008; Lambeth, 2008; Preiser et al., 1988). Respondents rated the KPIs with the following scale:

\[ 5 = \text{Very important}, \quad 4 = \text{Important}, \quad 3 = \text{Moderate}, \quad 2 = \text{Unimportant}, \quad 1 = \text{Very unimportant} \]

Again, the results are represented in a bar chart (Figure 6.4) and the average scores are given in table 6.2.

Figure 6.4: How important are the following KPIs?
Table 6.2: Average scores of KPIs’ importance.

<table>
<thead>
<tr>
<th>KPIs</th>
<th>Average score</th>
<th>KPIs</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reasonable building costs</td>
<td>3.85</td>
<td>13 Available ICT facilities</td>
<td>4.79</td>
</tr>
<tr>
<td>2 Reasonable lifecycle costs</td>
<td>4.15</td>
<td>14 Available sports facilities</td>
<td>4.71</td>
</tr>
<tr>
<td>3 Communication between involved parties</td>
<td>5.00</td>
<td>15 Available cultural facilities</td>
<td>4.64</td>
</tr>
<tr>
<td>4 Sustainable development of the building</td>
<td>4.62</td>
<td>16 Daylight inside the building</td>
<td>4.64</td>
</tr>
<tr>
<td>5 A sustainable building</td>
<td>4.46</td>
<td>17 Available fresh air/airco</td>
<td>4.38</td>
</tr>
<tr>
<td>6 High quality of design</td>
<td>4.77</td>
<td>18 Good functioning heating</td>
<td>4.23</td>
</tr>
<tr>
<td>7 Time needed to develop the building</td>
<td>4.08</td>
<td>19 Enough space available in school</td>
<td>4.79</td>
</tr>
<tr>
<td>8 Access to building and facilities</td>
<td>4.50</td>
<td>20 A safe building and environment</td>
<td>4.79</td>
</tr>
<tr>
<td>9 Decoration inside and outside the school</td>
<td>4.57</td>
<td>21 Multifunctional &amp; flexible building</td>
<td>4.79</td>
</tr>
<tr>
<td>10 Good furniture in the building</td>
<td>4.46</td>
<td>22 Convenient access of public transport</td>
<td>4.08</td>
</tr>
<tr>
<td>11 Available catering</td>
<td>4.14</td>
<td>23 Educational performance</td>
<td>4.93</td>
</tr>
<tr>
<td>12 High quality Facilities Management</td>
<td>4.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Communication between stakeholders and educational performance are by far the most important KPIs according the respondents. These are followed by a multifunctional & flexible building, a safe building and environment, space available in school, and available ICT facilities.

Less important are building and lifecycle costs, building time, catering, and access to public transport.

6.3 Performance of schools

Respondents rated the performance of the school estate they are involved in. The following KPIs were rated:

1. Realisation/building costs
2. Lifecycle costs
3. Sustainability of the building
4. High quality of the design
5. Time needed to develop the building
6. Access to building and facilities
7. Decoration inside and outside the school
8. Good furniture in the building
9. Catering facilities
10. Facilities Management (FM)
11. ICT facilities
12. Sports facilities
13. Cultural facilities (Art, music, etc.)
14. Daylight inside the building
15. Available fresh air/air-conditioning
16. Heating system
17. Space available in school
18. Safety in building and environment
19. A multifunctional & flexible building
20. Convenient access of public transport
21. Educational performance
The performance of the school estate is rated with the following scale:

5 = Very good, 4 = Good, 3 = Moderate, 2 = Bad, 1 = Very bad

The results are represented in a bar chart (Figure 6.5) and the average scores are given in table 6.3.

The most important result of this question is the low score of FM performance. Respondents from different schools rated FM performance lower than other KPIs.

This is confirmed by the answers of the open-ended questions and interviews (paragraph 6.4). Realisation/building costs, lifecycle costs, building time, furniture, and decoration score less.

The design of the school estates score very high, which is also confirmed by the open-ended questions. The quality of the sport facilities has the same score (high). These KPIs are followed by the performance of the cultural facilities (Art, music, etc.), space in school, available daylight, and the educational performance.

Figure 6.5: How do school estates perform on the following KPIs?
Table 6.3: Average scores of school estates on KPIs.

<table>
<thead>
<tr>
<th>KPIs</th>
<th>Average score</th>
<th>KPIs</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Realisation/building costs</td>
<td>3.67</td>
<td>12 Sports facilities</td>
<td>4.69</td>
</tr>
<tr>
<td>2 Lifecycle costs</td>
<td>3.67</td>
<td>13 Cultural facilities (Art, music, etc.)</td>
<td>4.46</td>
</tr>
<tr>
<td>3 Sustainability of the building</td>
<td>4.09</td>
<td>14 Daylight inside the building</td>
<td>4.46</td>
</tr>
<tr>
<td>4 High quality of the design</td>
<td>4.69</td>
<td>15 Available fresh air/air-conditioning</td>
<td>3.92</td>
</tr>
<tr>
<td>5 Time needed to develop the building</td>
<td>3.77</td>
<td>16 Heating system</td>
<td>3.92</td>
</tr>
<tr>
<td>6 Access to building and facilities</td>
<td>4.15</td>
<td>17 Space available in school</td>
<td>4.46</td>
</tr>
<tr>
<td>7 Decoration inside and outside the school</td>
<td>3.75</td>
<td>18 Safety in building and environment</td>
<td>4.00</td>
</tr>
<tr>
<td>8 Good furniture in the building</td>
<td>3.83</td>
<td>19 A multifunctional &amp; flexible building</td>
<td>4.25</td>
</tr>
<tr>
<td>9 Catering facilities</td>
<td>4.18</td>
<td>20 Convenient access of public transport</td>
<td>4.08</td>
</tr>
<tr>
<td>10 Facilities Management (FM)</td>
<td>3.08</td>
<td>21 Educational performance</td>
<td>4.54</td>
</tr>
<tr>
<td>11 ICT facilities</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.4 Additional interviews

Three interviews have been conducted in addition to the survey. All 16 respondents of the survey have been approached for an interview. Three respondents agreed to do a full interview of approximately 45 minutes by telephone. The respondents are from three different LAs:

- J. Birkett, Business manager at Tong High School (Bradford)
- E. Silson, Headteacher at Allerton High School (Leeds)
- C. Booth, Programme director at Lambeth BSF (Park Campus) (Lambeth)

These are the findings from the phone interviews:

Delivery

A school estate needs to be accepted by the LA when the construction phase is finished and it will be occupied. The hand-over needs to be done accurately, because it is possible that a building is not finished completely. A full check of the school estate is normally done during the hand-over. If the building is accepted with some malfunctions, the contractor cannot be held responsible afterwards. The FM is then responsible for the repairs during operation. The result of this will be explained in section 7.1 & 7.2.

The above occasion happened at two schools, i.e. Allerton High School (Leeds) and Tong High School (Bradford). Both schools were handed over under time pressure. The Tong High School (Bradford) was not finished, but due to financial pressures they vacated the old building and the new building was accepted with some malfunctions. No good arrangements were made with the contractor regarding the malfunctions the contractor left over to the facility manager. Hence some dispute arose about the repairs between the contractor, FM, school, LA and LEP.
Budget
All three projects mentioned above did not succeed to finish the school estate with the initial budget allocated. The interviewees are convinced that additional funding was needed, but they are not informed about the amounts. As the figures are not public it is impossible to judge the situation for this research. It is apparent that stakeholders think financial aspects are less important (Figure 6.3 and 6.4). It is also understandable that some completed BSF projects do not score high on the financial aspects (Figure 6.5 and Table 6.3). The interviewees agree that money is important because it is a public expenditure. Therefore, the interviewees will not spend careless public money. Exceeding the budget is because of incidental expenditures and not because of spending careless public money. This counts for the BSF programme in general.

Facilities Management (FM)
The results from the survey show that the performance of FM is below the level it should be. All three Facility Managers at the above schools mentioned they have paid penalties because of not meeting the performance requirements. The most excessive example is the situation in Bradford.
The LA (Bradford) has one FM contract for three new school estates (Buttershaw School, Tong high School, and Salt Grammar School). Penalties are being paid, because there is a lack of service at all three schools. It is cheaper for the FM Company to pay the penalties than delivering service on time and delivering good quality. The FM does deliver just enough service for not losing the contract. The FM is focused on making money and not on delivering service and quality to clients. There is some disagreement on the delivery of service required by the FM company. The school accepted the new building while it was not finished completely. The FM company needed to make repairs which were the responsibility of the contractor. But the FM company used this excuse even after one year of operation. The FM refused to deliver service (on time), because the building was not delivered completely. Some new repairs do not have anything to do with the delivery, and the FM company uses this as an excuse. The lack of good FM services is now problematic and disturbing the education delivery of the school(s).
The same was happening at the Allerton High School in Leeds. A lack of service resulted in problems with education. Exams and lessons had to be cancelled, because the FM did not fulfil its tasks. A FM needs to understand the importance of working in education and influencing the development of children. Poor FM services have a bad influence on children. In this way, experience of an FM company with schools is very important. This is not always the case when a FM contract is tendered. There is a focus on the cheapest FM instead of the best FM provider.

Local Authority (LA)
There is a role for the LA in situations like above regarding the FM contract. It should take active measures, however this is not always possible for a LA. There is not always enough
capacity available to handle projects like the BSF programme. Some LAs are small, have weak positions and poor (tight budgets). People cannot blame the LAs if they are small and weak, but these LAs need support from Central Government in large-scale initiatives like the BSF programme. This should be a point of reflection for future BSF projects. The schools mentioned above are pathfinders or wave 1 projects. Problems and mistakes should be taken into account, lessons should be learnt and actioned in future projects. So, there needs to be learning curve.

**Communication & responsibilities**

Communication between stakeholders was mentioned in the answers of open-ended questions in the survey. Interviewees confirmed that the communication between stakeholders does not function optimally. This resulted in disagreements and unsolved problems. Eventually children and their education curriculum are influenced by these disagreements. There were problems at the Allerton High School (Leeds) and the Park Campus (Lambeth). The LA and the LEP had different goals than the school head. Communication is therefore needed, but it does not always happen correctly. School programmes can not take place, without support from local stakeholders. Also, stakeholders do not know anything about it if there is a lack of communication.

There was also disagreement about the responsibilities of stakeholders. Respondents of the survey answered in various ways to responsibilities. The same observation applies for the interviews. Interviewees had no clear view on the responsibilities of stakeholders. It may the result of lack of stakeholder consultation. Responsibilities can be better apportioned when there is communication between stakeholders.

**6.5 Conclusion survey and interviews**

- Responsibilities of stakeholders during post-occupancy phase are not clearly divided. Stakeholders answer very differently on questions about responsibilities. There is some confusion who is responsible for what.

- The quality of the communication between stakeholders is not satisfying. There cannot be a clear division of responsibilities without communication.
  - Difficulties persist where the demarcation of responsibilities is not clear. Particularly with snagging/performance failures and defects. An example is that the FM contractor has unwillingly picked up the faults left by the PFI contractor in construction. There was no communication about this between parties involved.

- Some BSF projects are exceeding the budget and construction time, but these are not excessive.
  - Building costs and lifecycle costs are not most important to respondents. The majority of the respondents are end users of the schools so this can be a biased view of the reality.
Respondents reply the same in respect of building costs and lifecycle costs. It might be possible that respondents do not know the difference between building costs and lifecycle costs.

- Some LAs do not have sufficient capacity to run the BSF programme. This results in a weak position of the LA not understanding the full scope of their BSF projects.
- The quality of FM services are below target. FM companies do not have enough experience within the education sector or they are too much driven by financial targets instead of quality targets. Many penalties are being paid by FMs in different BSF projects.
  - The role of the LA and LEP are important in consideration with the FM. These LAs are sometimes weak, but should be stronger and prove better capacity and capability.
- The qualities of the schools' design, sport facilities, space available are very good.
  - Respondents mention in open-ended questions that designs are very well.
- The quality of access to buildings and facilities, cultural facilities (Art, music, etc.), daylight inside the building and educational performance are satisfying.
  - Educational aspects are very important to respondents. Educational performance of schools is being measured annually by Ofsted (Office for Standards in Education / "Onderwijsinspectie").
- Respondents mention building costs, communication, involvement of stakeholders, and FM in open-ended questions. These are the most critical features in the development process according the respondents.
7. LAs vs Schools

Different parties have different interests and responsibilities. The two biggest groups of respondents are those related to LAs and schools. The details of the respondents are in attachment 5. The interests and responsibilities of these parties will be explained further in this chapter, together with the results of the survey for these groups.

7.1 LAs

For most of the LAs, the BSF programme is the biggest capital investment programme they have ever executed. The purpose of the programme is to deliver an educational transformation and the LA is partly responsible for this.

Responsibilities

A LA is responsible for delivering an educational ethos and vision, and a system that facilitates to its population. Whereas DCSF and PfS are the umbrella organisations for BSF, the delivery is in hands of LAs. The LA is therefore also responsible for the execution of the BSF programme at a local level. A LA needs the following aspects to achieve the educational transformation (4ps & PfS, 2008):

- a project board, responsible for steering the project through different BSF stages;
- a project team, responsible for navigating these project stages without delays. The project team should have sufficient capacity, expertise, and resources. It should include staff with education experience and it needs specialist external advisers;
- ensuring that stakeholders are fully involved through engagement and participation so that they fully “own” the project as it progresses (especially schools, faith bodies, trustees and the local Learning and Skills Council) (4ps & PfS, 2008).

The LA is responsible for joining together all stakeholders to achieve common and collective goals. "Local authorities have the lead responsibility to engage and consult with all interested parties in their local communities. They are responsible for ensuring that the collective vision of what their schools should provide is actually delivered through the BSF programme” (www.partnershipsforschools.org.uk).

Besides that, the LA is responsible for the LEP for a smaller part, because it is shareholder in the joint venture (owns 10% of the LEP’s shares).

Interests

It is in the interest of the LA that 21st century world-class learning environments will be realised, that will enable generations of young people to reach their full potential. This is necessary for the future of the LA and its population.

The LA has to find the right Private Sector Partner (PSP). This is the task of LA and it is important that the LA finds the right company. The PSP has an important role in the local BSF programme, because it owns 80% of the shares of the LEP. Typically, there are four
members of the LEP board representing the PSP, and just one representing the LA and one person on behalf of PfS. A lot of budget is involved and the bigger part of the funding comes from DCSF. This budget is spent by the LA over a long-term agreement of 10 to 15 years. Therefore, it is in the interest of the LA to find a reliable PSP.

7.2 Schools
In this research, the school is represented by the school board, school council, and teachers.

Responsibilities
The school board, school council, and teachers are responsible for the education in the school. This includes also the responsibility for the development of the children. Children have to develop their skills, confidence, knowledge, understanding and skills to thrive and achieve their potential. Facilities are being delivered by the authority and other stakeholders, which are being used by the school for the educational process. Students, parents, and the authorities demand from the school (school board, school council, and teachers) that it delivers an acceptable level of education.

In order to deliver high quality education, the school is responsible for the definition of the education vision and long-term strategy for the school. The school has to make it known to the LA to make it possible to realise this vision and strategy.

Interests
A good reputation is important to a school. A school with a bad reputation will not attract new students. The school will benefit from the fact that there is a good school estate with good education and a good organisation. It is in the interest of the school to have an optimal functioning building with all its facilities. Disruption of any functioning is not desired by the school and its students. Of course, good Ofsted scores ("Onderwijsinspectie") are also in the interest of the school.

Schools get a certain amount of budget from the LA to deliver education. The school wants to deliver high quality with that amount of budget. The budget needs to be spent in an efficient way to achieve a high level of education. So, the school has a financial interest as well.

7.3 Comparison of LAs & Schools
Unfortunately, there are not enough respondents representing schools for each LA to compare the results of the survey. Most respondents from schools come from Bradford and Bristol. Respondents from LAs come from Lambeth and Leeds (Figure 7.1 and Attachment 5). These results will be compared in this section. This can give a biased view of the results, because the respondents from LAs come from another LA than the respondents from schools.
Respondents from schools have a critical attitude towards the performance of school estates compared with respondents from LAs (table 7.2). This could be caused by the fact that LAs are responsible to supply an educational system and facilities to the school community. The LA has to select a PSP and is also partner of the LEP. The PSP and LEP deliver the school estate for the school community (school board, school council, and teachers). If the respondents representing the LA would object to the building's performance, then they would reject their own work too.

The school community is rightly concerned it gets an optimal functioning building for the budgets allocated. Respondents representing schools can therefore improve the building's quality by rating the building's performance low. This is a way to impose pressure on the LEP, FM, and LA to improve the building's performance. So, it is unlikely that respondents from the school community rate the building's performance higher than respondents from LAs. This is shown in table 7.2.

People representing LAs rate the building's performance equal or higher (≥) at all KPI’s, except the (12) Sports facilities and (13) Cultural facilities (Art, music, etc.). This can be because of the different interests of the LA as mentioned earlier.

Respondents representing LAs also rate the importance of KPIs in general higher than school representatives. But in this case there are more exceptions (table 7.1). All KPIs are rated equal or higher (≥) by LA representatives, except (9) Decoration inside and outside the school, (11) Available catering, (12) High quality Facilities Management, (17) Available fresh air/co, and (18) Good functioning heating.
Table 7.1: Average scores of KPIs' importance, rated by school's representatives and LA's representatives.

<table>
<thead>
<tr>
<th>KPIs</th>
<th>Aver. Score School</th>
<th>Aver. Score LAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reasonable building costs</td>
<td>3.63</td>
<td>4.25</td>
</tr>
<tr>
<td>2 Reasonable lifecycle costs</td>
<td>4.13</td>
<td>4.25</td>
</tr>
<tr>
<td>3 Communication between involved parties</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>4 Sustainable development of the building</td>
<td>4.63</td>
<td>4.75</td>
</tr>
<tr>
<td>5 A sustainable building</td>
<td>4.38</td>
<td>4.75</td>
</tr>
<tr>
<td>6 High quality of design</td>
<td>4.75</td>
<td>5.00</td>
</tr>
<tr>
<td>7 Time needed to develop the building</td>
<td>4.25</td>
<td>4.25</td>
</tr>
<tr>
<td>8 Access to building and facilities</td>
<td>4.25</td>
<td>4.60</td>
</tr>
<tr>
<td>9 Decoration inside and outside the school</td>
<td>4.50</td>
<td>4.40</td>
</tr>
<tr>
<td>10 Good furniture in the building</td>
<td>4.38</td>
<td>4.50</td>
</tr>
<tr>
<td>11 Available catering</td>
<td>4.38</td>
<td>3.80</td>
</tr>
<tr>
<td>12 High quality Facilities Management</td>
<td>4.88</td>
<td>4.50</td>
</tr>
<tr>
<td>13 Available ICT facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Available sports facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Available cultural facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Daylight inside the building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Available fresh air/airco</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Good functioning heating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Enough space available in school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 A safe building and environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Multifunctional &amp; flexible building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Convenient access of public transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Educational performance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7.2: Average scores of school estates' performance on KPIs, rated by school's representatives and LA's representatives.

<table>
<thead>
<tr>
<th>KPIs</th>
<th>Aver. Score School</th>
<th>Aver. Score LAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Realisation/building costs</td>
<td>3.57</td>
<td>3.80</td>
</tr>
<tr>
<td>2 Lifecycle costs</td>
<td>3.57</td>
<td>3.80</td>
</tr>
<tr>
<td>3 Sustainability of the building</td>
<td>3.83</td>
<td>4.40</td>
</tr>
<tr>
<td>4 High quality of the design</td>
<td>4.63</td>
<td>4.80</td>
</tr>
<tr>
<td>5 Time needed to develop the building</td>
<td>3.50</td>
<td>4.20</td>
</tr>
<tr>
<td>6 Access to building and facilities</td>
<td>4.00</td>
<td>4.40</td>
</tr>
<tr>
<td>7 Decoration inside and outside the school</td>
<td>3.38</td>
<td>4.50</td>
</tr>
<tr>
<td>8 Good furniture in the building</td>
<td>3.50</td>
<td>4.50</td>
</tr>
<tr>
<td>9 Catering facilities</td>
<td>4.14</td>
<td>4.25</td>
</tr>
<tr>
<td>10 Facilities Management (FM)</td>
<td>2.63</td>
<td>3.80</td>
</tr>
<tr>
<td>11 ICT facilities</td>
<td>3.71</td>
<td>4.40</td>
</tr>
<tr>
<td>12 Sports facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Cultural facilities (Art, music, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Daylight inside the building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Available fresh air/air-conditioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Heating system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Space available in school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Safety in building and environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 A multifunctional &amp; flexible building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Convenient access of public transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Educational performance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Influences of current economic situation

The current economic situation has its influence on the BSF programme. This chapter will explain the consequences of the recession on the BSF programme and what change plans Central Government has put into effect to address these.

8.1 Consequences of recession for BSF programme

It is difficult for private parties to get a loan or credit during the recession. This is also applicable to the construction businesses within the BSF programme (www.partnershipsforschools.org.uk; www.teachernet.gov.uk). A number of private funders are unable to finance BSF projects or lend money. Therefore there is a drawback of PFI projects planned within the BSF programme. These PFI projects are DBFMO projects (Design-Build-Finance-Maintain-Operate). Before the recession, half of the BSF projects were PFI projects (DBFMO) and half were non-PFI projects (traditional tenders). Due to the recession this has changed, but it is not expected that DBFMO would not be used anymore. Central Government remains supportive to the delivery educational capital through private finance. When global markets recover it is likely that banks will lend more funding for the PPP/PFI markets in England.

Central Government and DCSF remain committed to the aims of the BSF programme to provide 21st-century teaching and learning facilities for all secondary pupils and staff in England (www.teachernet.gov.uk). Budgets planned for the future have been brought forward to stimulate the economy. In this way, the Government also wants to prevent the BSF programme to delay.

8.2 Changes in BSF programme

Schools will not be delivered in waves anymore. The BSF programme stops after wave 6. The remaining projects will be delivered, but in a different way as prioritisation of projects has changed. Projects will not commence if LAs cannot demonstrate "Readiness to Deliver" (RtD). This is in the interests of good project management and maintaining momentum of delivery (PfS, 2009). Whereas the initiative was with Central Government, PfS, and DCSF during the first six waves, it is now in the hands of the LA.

Readiness to Deliver

Whether a LA is ready to deliver depends on a judgment that is based on three factors (PfS, 2009):

- The LA’s capacity, project governance and management arrangements, experience and readiness to lead and manage a programme of this scale and value;
- The clarity, ambition and connection of the local authority’s transformational educational with children’s services vision and strategy;
The integration of BSF with broader corporate, regeneration and multi-service priorities and strategies.

At present there are three groups of LAs: (1) Large LAs, they have a lot of projects, because there are more schools in the area. Therefore there needs to be a manageable spread of work over the whole programme. (2) Some LAs have made it clear they do not want an early start, because they are not ready yet in relation to capacity and strategy. (3) The last group of LAs is already busy with the BSF programme and need a further tranche of work to maintain momentum.

LAs which are already delivering BSF projects in the first six waves are focussing on delivery of the active projects. DCSF will only allow new projects to start in the where the LA has shown that the initial project(s) is/are progressing well. Besides that, new projects should not threaten delivery of the active projects.

The assessment of RtD will be done according to the following criteria (PfS, 2009):

2. Early consultation with all stakeholders (both internal and external) concerning the potential BSF can provide for education and community transformation.
3. Robust Pupil Place Planning at 11-16, 16-19 and Special Educational Needs (SEN).
4. Identifying both financial and human resources to provide the essential capacity required to deliver BSF within cost, to time and quality.
5. Securing senior political and corporate support from across the Council.
6. Early consideration of the likely issues that will affect delivery of BSF on existing sites (e.g. planning, choice of Initial Projects etc.) or the logistics of the process for procuring new sites should this be necessary.
7. Considering how the local response to the National Challenge relates to proposed BSF investment.
8. Establishing and maintaining a dialogue with the Office of the School Commissioner.
9. Aligning any statutory consultation, where there are clear school organisation issues, with the BSF project plan.
10. Accessing the Expert Client Programme to develop capacity further, including undertaking a skills audit. The Expert Client Programme is currently provided by 4ps, the local government project delivery specialist body.
8.3 Status of BSF programme August 2009

Almost a third of the secondary schools in England are or have been involved in the BSF programme with funding or (preparations for) construction work and refurbishments. The costs are now being controlled and the BSF programme is now being well managed according to a recent National Audit Office report (4ps & PfS, 2009). The LEP structure leads nowadays to cost and time savings. Just like the survey confirms, the BSF programme delivers schools to a higher specification than schools realised before the BSF programme has been launched.

There are still new LAs joining the BSF programme at this very moment. Another six new councils were announced in July 2009 with 18 new local BSF projects (Barnet, Bolton, Hampshire, Peterborough, Sunderland, and Wigan). Figures of the status of the BSF programme are given in table 8.1.


| Number of schools benefitting from BSF investment | 87 |
| Number of deals closed (financial close)          | 41 |
| Number of LEPs                                   | 24 |
| Number of local authorities in BSF               | 85 |
| Value of capital investment (value of contracts signed) | Over £4 billion |

Approximately 20 financial institutions are willing to support local BSF projects to help reach financial close. PFI projects have difficulties to reach financial close, because of the current economic situation. Barnsley is the first LA to get help from the European Investment Bank (EIB), which will fund 50% of the project. The EIB will support a small number of projects (4ps & PfS, 2009).
9. BSC applied to BSF school estates

A BSC has been developed for the research to assess the performance of school buildings delivered through the BSF programme. The BSC is developed with the help of the results from the survey, interviews, & literature.

9.1 The BSC in the BSF programme

The BSC is explained in section 4.3. The BSC can be applied as a research tool to projects of the BSF programme and especially to schools. Most of the assessment tools in the BSF programme are focusing on the development and delivery process, as mentioned earlier in this report (paragraph 4.1). This BSC is focusing on the performance of a completed school buildings. A worked out example is given below.

Figure 9.1: Balanced Scorecard applied to BSF school estates.
The applied BSC

You can see perspectives have changed in the applied BSC if you compare figure 4.3 and figure 8.1. Also, some BSF terminology, such as KPIs, measures and targets, is introduced in the BSC. This is due to the survey results. As shown in the results of the survey in table 6.1 and attachment 4 (question 2), certain aspects are more important to stakeholders than the perspectives of Kaplan & Norton (1996 & 1998). Hence the perspectives of Kaplan & Norton (1996 & 1998) and the educational aspects, quality aspects, safety aspects, and partnering aspects are merged in the applied BSC.

Kaplan & Norton (1996 & 1998) distinguished objectives, measures, targets, and initiatives for every perspective. Firstly, in BSF projects the strategy is translated into KPIs. KPIs are therefore added to the BSC. Secondly, the 'initiatives' are removed from the BSC, because the tool is about performance assessment for school buildings. If the performance a school estate is insufficient according the applied BSC, then the LEP needs to take appropriate actions to resolve performance at a reasonable level.

Four perspectives

Educational & user aspects: To achieve the educational targets; how should users and customers be treated?

This perspective can be used to check if the educational performance is good enough in relation to the customer and end-user satisfaction. CSFs have been determined for this perspective and these CSFs are divided into KPIs (table 9.1 and attachment 7).

Partnering & financial aspects: To satisfy stakeholders and users; how should be cooperated in a financial responsible way?

Different partners are cooperating in a LEP. There is always a financial issue or motivation when partners are working on a BSF project. That is the reason why both aspects are combined into one perspective. This perspective is also divided in CSFs and KPIs.

Quality, safety & internal business aspects: To deliver quality and safety to users; how will the school need to operate?

A school needs to be safe and deliver quality to end-users. The internal business process needs to deliver these aspects (for example FM). These issues are covered within this perspective.

Learning & growth: To achieve the vision; how will the project sustain its ability to change and improve?

This perspective comes from the BSC of Kaplan & Norton (1996 & 1998). It focuses especially on the improvement of the internal business process and the learning environment. The objectives of this perspective are mostly the intangible aspects like sustainability and FM. It is also called the 'Innovation perspective'.
9.2 Application of BSC

Key value objectives of stakeholders can be met during the post-occupancy phase by applying the BSC to local BSF projects. The CSFs and KPIs are determined for BSF projects by the survey performed in this research. It is possible to fulfil the survey again later on in the BSF programme (after 5 to 10 years). Targets can be set and measures will show if targets and key value objectives will be met. The applied BSC is given in table 9.1. A bigger version of the table is available in attachment 7.

Table 9.1: Applied Balanced Scorecard (bigger version of table available in attachment 7).

<table>
<thead>
<tr>
<th>Perspectives</th>
<th>CSFs</th>
<th>KPIs</th>
<th>Measures</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Educational &amp; user aspects</td>
<td>Good Education</td>
<td>Educational performance</td>
<td>Critical score</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enough available space</td>
<td>Available space for education</td>
<td>m² available for education</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Available space for sports</td>
<td>m² available for sports</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Available space for cultural activities</td>
<td>m² available for cultural activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Available space for catering</td>
<td>m² available for catering</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Available space for general use</td>
<td>m² available for general use</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Available space for offices</td>
<td>m² available for offices</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access of public transport</td>
<td>Distance from bus stop</td>
<td>m from bus stop</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance from underground/overground</td>
<td>m from underground/overground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>User satisfaction</td>
<td>Accessibility of building</td>
<td>Satisfied users</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Outcome of user satisfaction surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Partnering &amp; financial aspects</td>
<td>Good FM</td>
<td>Time to repair</td>
<td>Average time to finish repair</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costs of repair</td>
<td>Average FM costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>Sufficient meetings of LEP</td>
<td># of general meetings of LEP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contact with users</td>
<td># of meetings user representatives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reasonable costs of school estate</td>
<td>Life cycle costs</td>
<td>Average FM life cycle costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total costs of construction</td>
<td>£ per m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exceeding of initial budget</td>
<td>£ per m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High quality projects</td>
<td>Stage 1 newproject proposals approved</td>
<td>% Stage 1 newproject proposals approved</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 2 newproject proposals approved</td>
<td>% Stage 2 newproject proposals approved</td>
<td></td>
</tr>
<tr>
<td>3. Quality, safety &amp; internal business aspects</td>
<td>Enough daylight</td>
<td>Available daylight</td>
<td>% of daylight available</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safety</td>
<td>Safety-in-building</td>
<td># reported incidents in building</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Safe environment</td>
<td># reported incidents in environment of school</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Obtain high quality design</td>
<td>Client satisfaction of design quality</td>
<td>Average score of the Design Quality Indicators (DQI)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ensure high quality ICT facilities</td>
<td>Quality of ICT infrastructure</td>
<td>Obtained of the Implementation Certificate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costs of ICT</td>
<td>£ ICT charges</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good decoration &amp; refurbishment</td>
<td>User-friendly decoration</td>
<td>Outcome of ICT user satisfaction survey</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>User-friendly furniture</td>
<td>Outcome of user satisfaction surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quality of construction</td>
<td>High quality of construction</td>
<td>Grade on Construction Excellence scale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction time</td>
<td>Exceeding the construction time</td>
<td>If weeks exceeding the planned construction time</td>
<td></td>
</tr>
<tr>
<td>4. Learning &amp; growth aspects</td>
<td>Sustainability</td>
<td>Environmental performance of design</td>
<td>BREEAM score</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innovation of school estate</td>
<td>Sustainable improvement targets</td>
<td>% Reduction of energy use</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Financial improvement targets</td>
<td>% Reduction of costs during operation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>New students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple use</td>
<td>Usage of school estate by different users</td>
<td>Hours spent (on non-school activities)</td>
<td></td>
</tr>
</tbody>
</table>
10. Conclusion

From the research it can be concluded that the effectiveness of performance assessment during the post-occupancy phase of project within the BSF programme is still underexposed with the existing performance instruments. The KPI test deals with a few aspects in the post-occupancy phase, such as the quality of ICT and efficient use of school estate. Therefore, a POE has been performed, and a survey and additional interviews have been carried out during the course of this research project.

The survey has shown that:

- Communication between stakeholders and educational performance are by far the most important KPIs according the respondents;
- The responsibilities within a LEP are not clearly divided during post-occupancy phase;
- The quality of FM in some BSF projects is below target;
- Qualities of the schools’ design, sport facilities, space available are very good;
- The most critical features in the development process are building costs, communication, involvement of stakeholders, and FM.

The survey and interviews have shown that the performance of FM is below the level as it should be. From the research it appears that Facility Management companies in Bradford, Leeds, and Lambeth have paid penalties, because of poor service provision. They deliver enough quality and service to not lose the FM contract, but the educational process is disrupted sometimes.

It seems to be that the FM is driven by financial reasons and not by delivering service and quality to clients. If some disagreements exist within the LEP, correct mitigation actions should be taken by the LEP or LA. The FM needs to understand the importance of operating in an education environment and the influence of their work on the development of children.

Some LAs have a weak position in terms of personnel. There are not enough personnel or personnel which is not qualified for the job. They do not have sufficient capacity or expertise to execute the local BSF programme or do not wish to start with the programme early. PFS will support these LAs in future, and capacity and expertise should be attracted so that these BSF projects can be realised.

In general, school representatives rate the importance of KPIs and the building’s performance on KPI’s in the survey lower than LA representatives. Respondents from schools seem to have a more critical attitude towards the performance of their school estates than respondents from LAs. This could be due to different responsibilities and interests of the stakeholders.
In this research project the use of KPIs in combination with CSFs has proven to be effective. Both concepts are implemented into a BSC which can be applied to one BSF project as a whole. The BSC offers the opportunity to use as a POE tool for future BSF projects. The BSC could offer a structured way of implementing the authorities’ vision into learning environments. The actual performance of school operational buildings can be assessed and compared with desired outcomes. Actions should be undertaken to upgrade the performance of a building if outcomes are not what they should be. The division of the BSC into four perspectives has been incorporated in the survey. Respondents have rated the areas of assessment (perspectives). Due to the outcomes of the survey the four perspectives of Kaplan & Norton (1996 & 1998) have been adjusted. The key value objectives of stakeholders can be met during the post-occupancy phase of school estates with help of the applied BSC.
11. Discussion

The conclusions drawn in chapter 10 are based on the data retrieved from the survey, interviews, literature, and available data from DCSF, PfS, and 4ps. Unfortunately, the number of respondents has been low. The survey was sent to 195 e-mail addresses and only 16 people completed the survey. The population was big, but obviously the people had other priorities. This research was not important enough for them and people can not be forced to cooperate.

The results of the survey are given in chapter 6 and 7. The results could present a biased view of the reality, because the major part of the respondents are representatives from LAs and schools. The results from school representatives and from LA representatives are compared in chapter 7. But these representatives are each active in another LA (Figure 7.1). Besides, just one respondent was a PFI contractor. Those two aspects can give a biased view of the results.

The applied BSC is not used in real BSF projects. A next step could be to apply the BSC to schools in operation. If necessary, the BSC could be adjusted and improved to suit the user’s needs. Further research in the future should be done on more schools in the BSF programme. Only 9 LAs had delivered some BSF projects at the beginning of this research. This number will significantly increase in the future and hence, more data will become available and more stakeholders may be willing to cooperate. It is unclear how many PFI projects will be realised in the short-term. Traditionally procured projects will certainly continue to be executed. It may be interesting to analyse the effects on the BSF programme with a very limited number of PFI projects. This could be a subject of further research.

During this research, the BSC is for the first time applied to a construction project. In business organisations the BSC has proven to be a helpful tool. Further research is necessary to prove the usefulness of the BSC in construction work. KPIS and CSFs are already known in the construction business. Both concepts are applicable in addition to the BSC. Only the validation of the combination of the concepts has not been done. The BSC as a POE can then be proven.

Different performance assessment instruments are for different purposes. The BSF programme is a unique project, which needs a unique approach. An applied BSC is developed to generate this unique approach, but the BSF programme is still in an early stage. Therefore, the applied BSC can be developed in more depth with more data and knowledge in the future.
12. References

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