

The Impacts of Facilities Management Techniques on the Operational Efficiency of School Buildings- An Assessment of Grant Maintained Schools

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ABSTRACT

This paper attempts to examine the main benefits and pitfalls of FM as applied to Grant Maintained Schools (GMS) by assessing its implications on selected school buildings. It seeks to address a number of questions regarding the desirability of this method as applied to GMS. On what assumption has GMS model been based? To what extent has this model affected their operational efficiency? What are the financial implications? What are the future prospects?

The main findings are that FM has provided new opportunities in the educational sector. Despite the economical uncertainty, it is highly likely that local control will remain. Giving the state of disrepair of many system-built schools of the 50's and the 60's, there are many opportunities for the FM to be exploited including condition survey, refurbishment of external envelope of the building, preventative maintenance, space utilisation and consultancy on meeting the EU health and safety legislation.

1 INTRODUCTION

Facilities management (FM) has developed following the radical change in management organisation. Devoting greater attention to the so called "core business" of the organisation and cutting overheads in high cost services departments has helped many companies to improve efficiency under the pressures of dwindling resources and the knock on effect of the recession.

Many successful FM firms have built specialist expertise based on flexible management and planning style, greater reliance on information technology and wider control over the maintenance process. (Thomson, 1990; Doyle, 1993) This is not confined to the structure and the fabric as such but also encompasses other types of care contracts such as cleaning, specialist support and general services and personnel.

The role of the facilities manager is also affected by the size and the complexity of organisation. Larger organisations have recognised the need for accommodating new techniques as compared to their insignificant role in smaller organisations. This is largely due to recognising that might reduce cost and improve quality.

Currently, facilities managers have to deal with two main issues:

Firstly and most importantly, it is the costs of operation which is constantly under pressure. The trend is to allocate resources to users' departments only whenever appropriate. An analysis of the cost-benefit equation is necessary to ensure optimal spending and value for money.

Secondly, which concerns the availability of IT (both hardware and software) at relatively lower prices. This presents the opportunity of processing vast amounts of information related to the management of the building; and to monitor various

aspects such as energy consumption, maintenance cost and changes in space utilisation over time.

Apart from the above, FM is becoming increasingly reliant on the "outsourcing" technique. This implies contracting out to specialist companies established for this purpose. Underpinning "outsourcing" is an assumption that companies concentrate their effort on core business functions from which profits are derived and are prepared to contract out any peripheral activities provided that will not affect business integrity (Barrett, 1993:155).

For example a surveyor could be called upon for an outsourced service by a company requiring an advice on the acquisition of new premises (e.g. survey, valuation, etc.). Outsourcing may cover all or some of the services of FM. This implies an in-house contact of adequate experience of contract negotiating with responsibility of tendering for contracts, setting specification and monitoring performance achieved.

Recently and following the introduction of competitive tendering by the government, local councils have started to assess their use of differing spaces, condition of properties and predicted annual maintenance costs.

2 GRANT MAINTAINED SCHOOLS (GMS)

Grant Maintained Schools have been introduced following the changes arising from Education Reform Act 1988. These have affected the whole basis of the management of schools by introducing Local Management of Schools (LMS) as an alternative to the Local Education Authorities (LEA) model. There is only 1,051 GM schools out of a possible of 24,526 in England and Wales.

The idea of GMS has been developed during the 1987 general election; it was thought to be as successful as council house sales in liberating families from socialism. At the early stages of implementation, it appears that most of the schools which have adopted GM status were those which were predominately threatened with closure or amalgamation (Carvel & MacLeod, 1995).

Apart from that LMS was introduced against a background of diminishing resources; and it is in that sense appears to be problematical as the government was tightening its grip on Local Government finance to curb public expenditure. The central government effectively controls what councils are able to spend. Council income is raised principally from; i) the central government in the form of Revenue Support Grant, ii) a share of the Uniform Business Rates and ii) the local Council Tax, which represent a small amount of the total as shown in figure (2).

The government through a complex formula sets for each council a "Standard Spending Assessment" (SSA) for each major service, e.g. education, policing, etc. and thus derive an overall SSA.

It deducts from the SSA the sum the council is to receive from Business Rates and Council Tax. If the council budget exceeded the SSA then this would lead to the Government to cap the council's expenditure and force them to reduce expenditure by reducing services.

It appears however that original opted-out schools have benefited financially by so doing at the expense of other schools. A school that opted out of local authority control would receive extra money to compensate for the loss of local authority services-payroll, special needs, subject advisers, etc. As more opted out, the burden of paying for county-hall administrators would fall more severely on LEA schools that did not go grant maintained, thus pushing the bandwagon along.

How long this financial advantage will continue is highly questionable. It seems that this type of financial incentive has persuaded many parents to vote for opting-out. If this incentive is withdrawn as more schools choose GMS status, then probably the most compelling reason for opting out will disappear; there is little point for schools to opt-out if they continue to buy back services from the LEA. There is thus a squeeze on the resources available to LEA schools whose grant from central government is reduced as schools in their area choose to opt out. As more schools choose to opt-out, the manning levels in the LEAs may be so reduced that they may find it difficult to implement a more centralised policy laid down by a future Labour Government.

The government in its recent the Education Bill will allow GMS to improve their facilities by borrowing money from the private sector and hence increasing schools' financial freedom. Under the proposed legislation, schools could borrow commercially using their land and building as security. (Marston, The Daily Telegraph, 16/11/1995). The idea behind this is to encourage schools to improve their existing facilities or to create new facilities such as new sport halls or swimming pools which could generate income from community use. At present schools wanting to raise capital funds must apply for government grants. Such bids may be approved, scaled down or rejected. Under the proposed legislation, schools could borrow commercially using their land and buildings as security.

2.1 The Management of GMS

The is via newly established governing bodies comprised of selected staff, parents and governors, having total funding control provided they comply with the department of Education's guidelines. They have total control of managing their own properties, determining the level of the annual maintenance grant and the capital grant formula fund. They can sell and leaseback their properties as a means of funding new development projects. Additionally, the governing body has the right to control the use of the school for community activities such as adult and ongoing teaching, sporting events, providing a further source of external funding. One would suggest that the complexities of the newly developing tasks would justify the role of professionally qualified facilities managers.

3. THE EMPIRICAL STUDY

Exploration of three GMS has been undertaken; Manston Green School in Aston and Aldridge School both of which are in the West Midlands, and Hyrstmount school at Batley in West Yorkshire (Edwards, AJ 20.10.94)

Manston green School has been built embodying almost the same design notion characterising the Nelson Mandela School; both of which have been built in Birmingham (Owen, AJ, 4/4/1990).

The design of the school reflects the main principles of locally managed schools in terms of its semi-independent status from Local Education Authority by encouraging community participation in the design and the management of the school and by stimulating and promoting the visual and environmental quality of teaching areas. Also to enhance youngster awareness and appreciation of both internal spaces and external surroundings.

The design of Manston green school has also encouraged greater integration between teachers and pupils enabling teachers to work within groups of various size and to improve the quality of delivery in response to the need of the "core curriculum." Apart from that, flexibility of the building form has encouraged more social interaction and mutual learning to take place.

Being a LMS implies direct responsibility of the school for its own budget, greater control of energy consumption and the cost of repairing vandalism. It has been argued that the labour-controlled authority has encouraged the development of an open-plan school with an air of lightness, spaciousness and democracy. In operational and managerial terms, it was anticipated that collaborative teaching can be encouraged so that teachers, children and local community all participated in the educational experience.

Aldridge School on the other hand went fully grant Maintained in 1993 after being under the LMS for some times. The building is constructed using the 1960's early version of CLASP system.

Following the opting for GM status, the management of school has adopted competitive tendering approach on a limited scale by out-sourcing to independent surveying and architects practices to assess maintenance and repair requirements and to propose a programme to deal with these requirements.

Having the upper hand in controlling the way funds are spent, the school has set up a new development plan and managed to secure £ 175,000 directly from the Department of Education; this is to enable a new science block to be built. The proposal of building a new block was not possible before as the school has been regarded as being in a relatively affluent area of the LEA and was not seen as a priority. Once again this demonstrate that political expediency of GMS and how such schools will be in a much stronger financial position

Assessment of the physical conditions of school buildings have been undertaken to enable a long term maintenance policy to be drawn and to rectify the damage caused by years of neglect and to minimise any further deterioration. Several defects have been identified as shown in Table 1. Immediate action is required to restore these defects vi improving the housekeeping. For example clearing gutters, installing simple automatic pumps in boiler rooms. Priorities for maintenance repairs might be set and a planned maintenance scheme should be produced and implemented. Improvement of safety, health and hygiene of the occupants might also be required together with optimisation of energy consumption through computer controlled zoning of the heating systems.

Table 1: Identification of the main defects in the selected school sample

Building Element	Diagnosis of Defects	Prognosis of Defects
Flat & Pitched Roofs	Poor condition, Evidence of patching over a number of years. Signs of cracking allowing leaks into supporting roof structure which will collapse if allowed to continue, signs of condensation problem in the roof void	All suspect roof areas to be completely stripped and recovered
Curtain Walling	Poor quality aluminium framed curtain walls with poor fitting standards to the sub-frame. Lateral movement in high winds. Fixing might be broken.	Replacement of the whole curtain walling might be needed.
Brickwork Walls	Cracking of brickwork at the joints due to thermal movement or structural movement leading to water logging into the inner walls	Apply sealant to prevent water penetration, or in more serious conditions, use compressible material first before applying a sealant to the outer surface.
Window Cills	Cracking and spalling of concrete window cills exposed rusty reinforcement bars	Replacement of rusty bar, chemical treatment and filling the cracks
Drainage Pipes & Gullies	Many are missing and most are blocked	Clear the blockage and replace the defected parts to prevent water seeping through the walls and rising damp
Electrical & Mechanical Services	Poor condition, Heating system is served by two separate systems. Asbestos has been used for thermal insulation in the boiler room and service ducts. The lighting throughout the school are tungsten of low energy efficiency.	Upgrade the electrical wiring and socket outlets. Remove the asbestos and replace the existing bulbs by low energy fluorescent bulbs.

4 WAY FORWARD

Since the Education Reform Act 1988 initiated the move towards independent management of schools, the way in which schools budgets are calculated has changed, making them more accountable at the local level. Despite the many positive outcomes of GMS, the future of these schools is clouded with political uncertainty. It is probable that local control will remain albeit to some degree and most likely to some of the GMS schools.

The state of deterioration and disrepair of many post-war schools will require significant rehabilitation and refurbishment expenditure. Prior to that an objective assessment of system built stock might be needed to identify the actual level of deterioration. As shown in figure (1), this can be achieved by looking at the descriptive records and early assessment of condition and checking further damages caused by the wear and tear particularly over the last ten years. Financial analysis of previous needs and actual expenditure will then be required as a reliable indicator of the degree refurbishment needed to bring these schools to an adequate standard. It seems that there is a potential for upgrading and enhancing both structural and functional performance of many school buildings but to an optimal rather than higher level as shown in figure (2). The process of optimisation will enable many of the recent changes in organisational and managerial issues to be accommodated. This might provide growing opportunities to FM in relation to space planning and asset management and organisation.

Despite the fact that schools lack funding when compared with hospitals trusts, there are still many opportunities to be exploited in relation to building surveys, refurbishment of the curtain walling, energy conservation, preventative maintenance programmes, consultancy on meeting new EU health and safety legislation and many others.

Undoubtedly, many of our schools are in a poor condition, and whatever the future organisation of education system, there is much scope for updating the premises and an increasing demand on the skills and expertise of a facilities manager.

4 REFERENCES

Barrett, P. & Owen, D. (1993) "The Outsourcing Balance: Is There an Optimum", in Barrett, P. (ed.) *Facilities Management: Research Directions*, Proceeding of the 2nd International Symposium on Facilities Management, UK, pp. 155-163.

Carvel, J & Macleod, D. (1995) *Learning Swerve*, The Gaurdian,

Doyle, N. (1993) *Facilitating Survival*, New Builder, 12 March 1993, p. 18.

Edwards, B. (1993) *A Sense of Civic Pride and Responsibility*, The Architects' Journal, 20 October 1993, pp. 20-21.

Marston, P. (1995) *Uncertain Future for failing Schools Despite progress*, The Daily Telegraph, 20 Nov. 1995, Home News.

Owen, R. (1990) Nelson Mandela School, Birmingham, The Architects' Journal, 4 April, 1990, pp. 36-49.

Property Week (1994) Facilities Management, 7 April 1994, p. 29.

Thomson, T. (1990) The Essence of Facilities Management, Facilities, Vol. 8, No 8, August 1990, pp. 8-12.

Varcoe, B. (1992) Premises of Value, Facilities, Vol. 10, 3 March 1992 .

Figure 1: Assessment of needs through previous records

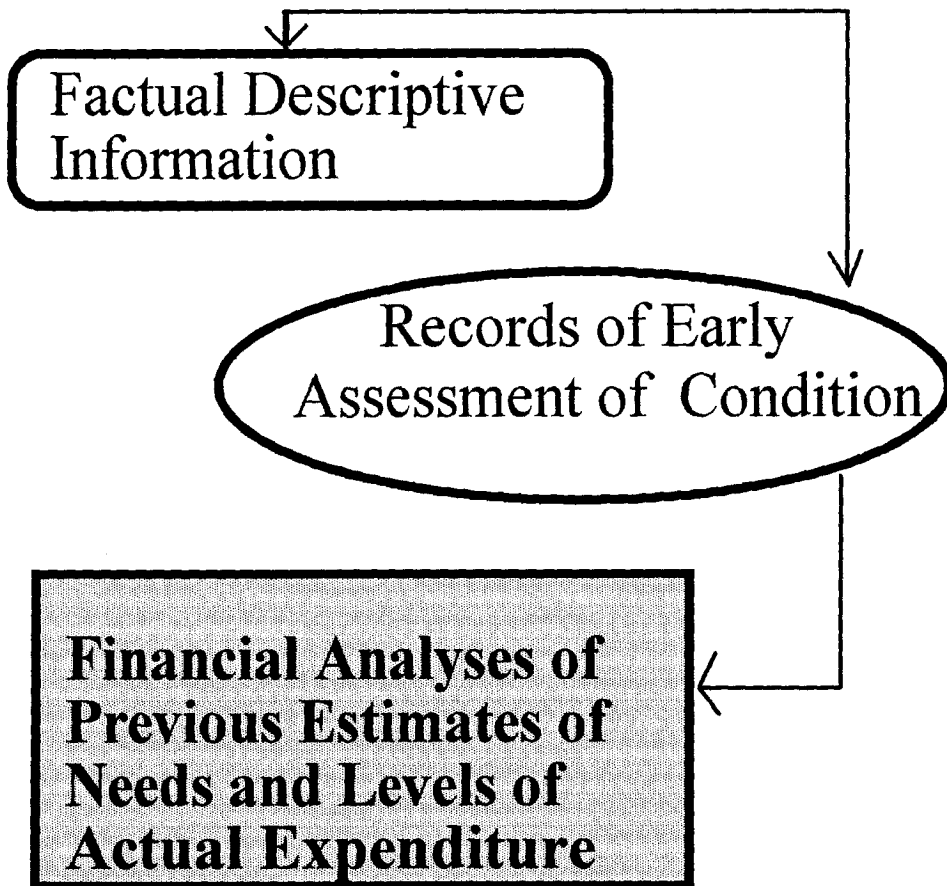
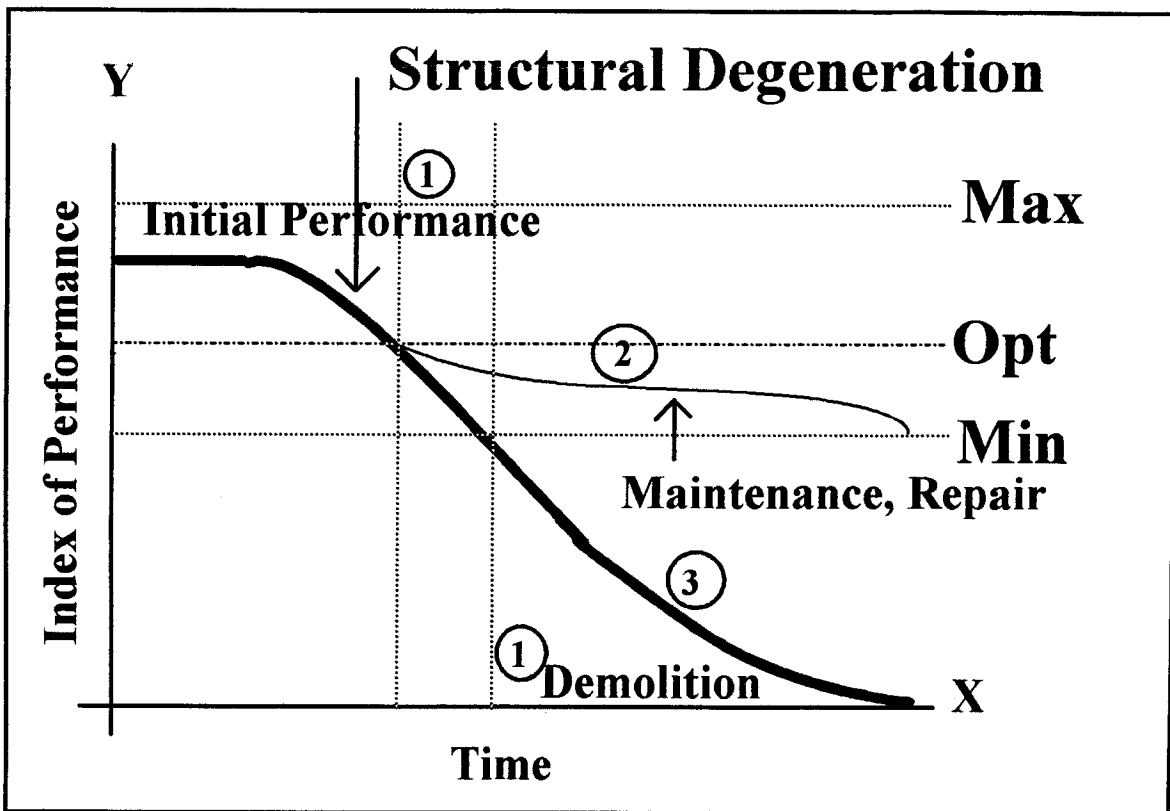


Figure 2: Structural degeneration of the building fabric



Ref: Cowan, P. (1963) Studies in the Growth, Change

- 1) The curve starts at a high point of Max. structural performance.
- 2) The curve will approach the Min. satisfactory level of structural performance & falls away smoothly to nothing.
- 3) If the structure rebuilt, it will begin again at a higher level of performance due to improvements in const. method. But if the building is repaired & maintained above minimum structural performance level, it will not be raised to its original level.