JCEB

The Role of Effective Communication in the Construction Industry: A Guide for Education and Health Clients

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Abstract

The construction industry operates primarily as a system of sub-contracting and purpose built alliances. There is a wide spread of stakeholders involved in conceiving a building project through typical stages such as design, finance, build, manage, upgrade and, ultimately, replacement and a corresponding need for communication and cooperation. Specialists who can prevent bridges falling down or who build 20 storey buildings are seen as the hard-nosed, action people who have helped bring us into the modern era. However, there are intuitive activities and disciplines which help us to achieve the type of construction achievements that have been the hallmarks of the 19th, 20th and now the 21st centuries. Most of these so called soft disciplines are about how one helps people, often highly skilled, achieve those construction and engineering goals. The key components are consultation and communication.

Communication strategies should be based on a thorough understanding of the ways that humans co-operate in joint undertakings, the key principles of social dynamics and learning theory plus the ways in which people deliver, accept and understand words and pictures. The disciplines of *organisational and environmental psychology* have become a basic fundamental of modern business activities from management and organisational strategy to marketing and customer relations and to the improvement of working, recreational and living environments.

However it is rare for a mature industry such as construction to adopt or examine those disciplines for guidance about either strategies or operations. This is despite the fact that the construction industry is almost entirely based on the principle of sub-contracting, business and professional alliances, all of which require understanding of environmental psychology and social dynamics in order to build trust, reputation, teamwork and client satisfaction. There is therefore a major need for communications to be systematic, understood by all stakeholders and intelligently applied. This paper concentrates on the need for the client to become a more confident and better informed stakeholder in the construction project, and seeks to provide high level management guidance for traditional centralized systems. The ultimate goal of the paper is to provide a systematic guideline for stakeholders to address early in the life of a project to ensure that industry professionals, clients and sub-clients are "working from the same page"

Keywords: Communication strategies, Construction cost controls, Education and heath construction, Capacity building and risk management at client level

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He then spent 9 years as a Federal Senator where he chaired many key committees such as Education and a number of Committees where controversial decisions needed to be made such as the need for a privacy act and for equal opportunity policy in the armed forces. He was also co-chair of the US Congressional organisations that monitored elections in the newly emerging democracies and followed this with over 9 years as the CEO of national organisations and institutes. He is also a published novelist and playwright and has produced a number of papers on critical strategic national issues.

Introduction

The construction industry operates primarily as a system of sub-contracting and purpose built alliances to bring a program to fruition and manage it thereafter. There is a wide spread of stakeholders involved in conceiving a building project through typical stages such as design, finance, build, manage, upgrade and, ultimately, replacement. There is therefore a major need for communications to be systematic, understood by all stakeholders and intelligently applied. This paper concentrates on a critical factor which has generally been overlooked in major studies of the construction industry, namely the need to provide practical guidance to the client (especially the local client) in order to assist the client group to become a more confident and better informed stakeholder in the construction project or programs. Health and education are used as examples.

The key recommendation of this report is for the client to form a Core Working Group at the earliest stage so that the constructors and designers and other industry professionals are dealing with model clients. Currently, in the UK, USA and Australia there is for instance a strong momentum to devolve authority to local schools. Wherever the reader stands on this issue, that devolution would carry considerable risks unless accompanied by a concomitant improvement in the management skills of local school personnel. This paper seeks to provide that high level management guidance for school based clients as well as their managers in the more traditional centralized systems.

The main thrust of this paper is therefore not to address the so-called "hard" areas of communication such as briefs, contracts and meeting notes and other usual features of project management but the so-called "soft" areas of human to human relationship building, mutual understanding and co-operation.[2] The ultimate goal of the paper is to provide a systematic guideline which will act as a check list for stakeholders to address early in the life of a project. Although the key stakeholders likely to benefit most from this paper are non-industry persons, there is value in centrally based education/health decision makers and industry professionals using the document so they and the clients and sub-clients are "working from the same page".[3]

Although this paper concentrates on education construction at all levels, it also is intended to assist health decision makers and others in that, unlike construction of commercial apartments and office accommodation, the clients or their delegates are usually building to occupy rather than to sell, lease or rent out. Thus, issues such as taxation deductions, depreciation and profit margins have little or no relevance to clients who will be owner occupiers. The paper may also be relevant to social housing where occupier or client satisfaction requires the same kind of early consultations outlined in this paper.

It is noted that a team led by the University of NSW (called the Alliance for Building Excellence) is already addressing one of the other major areas of current need; that is, the building of a data base and template that will be populated by cost and quality information that is contemporary, credible and accessible to stakeholders planning either single projects or system wide programs such as school buildings and hospitals. The communications strategy addressed in this paper is intended to be complementary to that Alliance for Building Excellence project.

[2] See Thomas E Uher and Philip Davenport *Fundamentals of Building Contract Management* UNSW Press (Chapter 3) where the author discusses evidence that various delivery methods tried over the years relied upon teamwork for success rather than the delivery methods per se.

[3] Patrick X.W. Zou, Guomin Zhang and Jia –Yuan Wang *Identifying Key Risks in Construction Projects: Life Cycle and Stakeholder Perspectives* The authors state "..little research has probed risks from the perspective of project stakeholders" p.2

Finally, the author has built a large part of this paper on confidential feedback from industry, finance and health and education decision makers both in Australia and in Europe. The confidentiality provisions were put in place to encourage open and honest dialogue and I'm deeply grateful to the respondents for their time and input. I have also dealt with marketing and communications advisors and have tried to provide a layperson's guide to the psychological, marketing and social dynamics thinking that underpins any effective communications strategy.

The Environment

Over the last thirty years there have been a number of developments in the construction industry, especially in those areas relating to government capital expenditure. The two most significant are the downsizing in almost all states of the in-house resources available to manage capital works programs, especially in education, health and social housing. The second is the gradual devolution to the local level of many budget and staffing decisions. In effect, this has meant that schools and hospitals have been given greater responsibility to manage their own affairs but within global financial and management constraints. This movement has evolved further in some states than in others and in some sectors more than others.

With diminishing and changing tax bases, Government orthodoxy is unlikely to allow a rebuilding of those diminished in-house resources even though in some states and in some areas (such as the BER funding in Education in NSW) a need to do so was demonstrated. This paper then recognizes those moves towards devolution and while, not necessarily supporting them, has tried to raise awareness about the need for more expertise and management skill at local client level to meet that challenge. This applies equally to decisions about schools, hospitals or social housing developments.

As part of that awareness raising, it is important to assist local clients to know what a model client can do; it may also help them identify those areas where professional expertise is required and at what point. Regardless, an ignorant client is not a model client which is the justification for this paper's major emphasis on clients understanding how they can build an effective management and communication model for dealing with capital works programs that affect their sites.

Communication Factors Critical to Success in Construction Projects

Discussions held by the author with key stakeholders in the construction, IT and finance industries have identified a number of factors which contribute to better cost and quality outcomes in any project or programs. The most frequently identified factor can be summarized for an individual or close working group to "own" the project and be able to engage the right people at the right time to implement all the phases of the project. Even if the system is one based on centralized procurement structures there is still a need to have an involved and informed client input at the local client level. This local input is not intended to compete or interfere in centralized decision making but it does assist in building user satisfaction, to clearly identify what the goals and purposes of the projects are to ensure that issues do not "fall through the cracks. Such a local group has been given a number of titles in different projects but, for convenience can be called the Core Working Group.

The above advice may seem self-evident but there is evidence that, in both the IT and construction industries, the lack of such an individual or Group at a local level can create communication problems that allow costing and quality control to deviate from the original plans. Where the client is indeed local, such as a private school board or an autonomous public school, the advice provided in this paper can be applied directly. With other schools in a system, the advice can be applied to the degree deemed legal and acceptable to that system. The BER Task Force Chair Brad Orgill noted that two of the more successful public

systems in the BER program did involve a higher degree of involvement by individual school. Similarly, the Investing in Our Schools program of the Howard Government, even though with smaller capital works, also followed a principle of maximizing the decision making and priority formulation by the local school.[4]

At the beginning of the project the Core Working Group will need to address a number of issues. They include the following:

a) Define the Core Working Group and decide who will be a member at that point and who may be invited to join it as the project progresses. Since that Core Working Group is the client's local voice it should be established preferably before the engagement of most of the contractors and professionals; the Core Working Group needs to have a reasonable permanency and dedication to that project which means in a school based project a senior school person should be taken sufficiently off-line to fulfil that requirement (and their time costs factored into the total project costs)

b) Identify the goals and high level budget estimates: these should include the purpose or purposes of the building, the type of usage and any possible changes in usage that can be anticipated. For example, in a monolithic demographic growth area, the need for a school may diminish as the population ages and requires community facilities of a different nature. This may metamorphose again as younger couples in twenty years time seek middle to inner city living and those community buildings once more revert to school buildings.

c) Identify the commitment and skills set of the Core Working Group so that the design brief given to the professionals and contractors is as sophisticated as possible; again in our discussion with industry leaders, respondents frequently identified the advantages that well informed clients bring to the task of meeting cost, quality and client satisfaction goals.

d) Establish a feedback loop which provides inputs during and after the construction project. This input and feedback process is a standard quality control methodology for projects across a number of disciplines and sectors but, in practice, is often neglected. The benefits can be significant if that client based feedback is utilized. It may provide valuable data for education and health systems and help to build teamwork and commitment at the local school or hospital level. A school principal, for example who has built a team that involves all the staff and key parent groups and obtained a consensus about the choice of capital works and the key aspects of the design and education goals, is more likely to find morale lifted and adverse media reports diminished. This was a fundamental principle behind the parent staff consultations that were required under the Investing in Our Schools Program.[5]

e) In an education or health system where considerable sums are put to tender each year, it is essential that the head offices commit to the creation and maintenance of a culture where the construction industry, teaching and health professionals have a common understanding and acceptance of how best practice works within that

[4] *Investing in Our Schools* was a $1 billion Commonwealth Government scheme started in 2006 by the Howard Government to fund minor capital works projects in public schools, with the individual schools selecting their priorities from within guidelines provided by the Commonwealth. The national parent and citizen's body, ACSSO, was commissioned to hold public awareness sessions across the country to assist the schools to work out their priorities.

[5] The guidelines for this nation-wide government schools education program required school principals to consult with the school community and have the choice of project sign off by the school council president or president of the parents and citizen group.

system. Feedback from the BER Task Force review and professional cost estimators in the industry could identify those states where such a culture of mutual understanding and best practice was already in place before the BER program was devised. Generally those that had such a culture in place performed better in rolling out cost and quality controlled school buildings during the BER program roll-out. Again, those that had strong quantity surveying inputs and sufficient inputs from the local community also benefited from that process.[6]

Best Practice across the Industry and Client Base

In the industry and client discussions, there were a number of factors identified by them as being most likely to affect the success or otherwise of a building project. Some are immediate and relate principally to the key stakeholders at local level such as the constructor, architect and school based client such as a principal. Others are medium and long term in their impact, such as anticipated changes in site usage or even demolition. Yet others are systemic factors that can generally only be dealt with at a higher level such as Cabinet or relevant central bureaucracies.

Below the author has summarized the industry and education client observations as well as advice from financial backers such as banks or Government financial controllers. Some of these observations are aspirational, others are clear requirements considered essential; all, however were recommended best practice that needed to be at least considered in the overall decision making process for the construction industry and their clients in critical sectors such as education, health and social housing.

Building a Brief using a Core Working Group

Core Working Group

The Core Working Group may start as a small client based group but grow in line with any need to seek professional assistance in preparing the client brief. It is however the mechanism which expresses the client's anticipated needs and is the structure through which the client becomes hopefully the model client who has a clear idea of what is require and is a consistent overseer of the project. The client will be able to make decisions quickly, informed and consistent so that work progress does not falter. The writer of this paper was provided with many examples of what some described as aberrant client behaviour across a number of construction projects. These included ambiguous scoping briefs, changes of mind that caused cost over-runs, criticism of the constructors when those constructors were simply implementing the client's previously stated requirements, delayed sign offs and changed client ownership which required rescoping or regrouping. Two projects were specifically nominated as being dramatically delayed with major cost over-runs simply because the client scope was significantly altered. Six others, including a cross city tunnel, failed partly due to the absence of accurate details about risk factors such as potential customer usage and cost over-runs due to inclement weather. A major health project faltered primarily because the scoping brief was significantly altered well after the major constructor team had been appointed. These are all risks that should have been foreseen and included in the Scoping Brief.

Master Plan for the Site

The BER Task Force report implicitly indicated that the most successful projects, generally in more resource rich schools, were those which had master plans where the building and its place in the overall school development had already been subjected to significant discussions. Many had well designed master plans that required little extra work in order to provide a comprehensive and agreed client brief to the professionals such as architects that were about to be engaged. This initial work did shorten the total project time and cost.

[6] *Report of the Building the Education Revolution Implementation Task Force 2011* p.18 and p.232

However, it is recognized that in state education systems such preparations are generally more difficult due to costs, internal resourcing and other issues such as changing political priorities and Government capital budget decision making. Therefore, in the absence of a comprehensive master plan, local school stakeholders, possibly in conjunction with their government authority should at least be able to create a high level master plan which incorporates the key factors outlined in this paper.

Budgets

The preparation of a draft budget includes high level decisions about whether to design to cost or cost a design or other variations of financing such as build to lease back. The budget should include some funding for the Core Working Group such as preliminary professional advice (for example a quantity surveyor) or compensation for any key school staff who may be seconded to that Group. Also, consideration should be given in the budget to the use of off-site fabrication to enable deadlines to be met more easily and to avoid delays, noise and safety issues presented by onsite building.

Above all, the Core Working Group should be seeking assistance in measuring the risks and probabilities factored into the draft high level budget. This is particularly relevant when estimating the overall budget allowed for the project. In health projects it is already common for clients to engage a quantity surveyor to estimate a budget from the client description or brief. The draft budget is then given to an architect to provide a design plan based on those draft budget parameters. It is strongly recommended that the same process be applied in school buildings as well.

The questions of the type of contract, payments and delivery method are critical to the success of a project and the post construction hand-over. Contracts are a highly complex area of a construction project. Although teamwork and trust are important, as are return business and industry reputation, an inappropriate contract containing an inappropriate delivery and payment method can blight the whole project. Fixed Price, Lump Sum, Schedule Contracts, Cost Plus Contracts, Fixed Fee, Percentage Fees, Bonuses and their variations or combinations are all options that depend on factors like time to completion, available client internal resources, available data and willingness to accept risk. The Core Working Group should seek expert advice from an independent industry professional such as a quantity surveyor at the earliest stage.

Preparing a Scoping Brief

a) Prepare a clear project scoping brief that will be the master document for all those who will provide professional and building services and for those at the client level who need a reference point against which all decisions can be clearly set. That project brief is the guiding document for all stakeholders from client to constructors and professional service providers. It should be compiled not in isolation but through a co-operative open process of consultation through which the Core Working Group has worked systematically so all members of that group have a clear understanding of the goals, time lines, design aesthetics, anticipated budget, maintenance requirements and usage requirements to name some of the key elements. If the principal client is a centralized procurement authority it is still advisable to establish a local Core Working Group to ensure that, especially at the concept stage, the local needs and inputs are made systematically.

b) The scoping brief should also include some written record of likely risks such as planning approval delays, weather, working with children vetting requirements, construction safety parameters such as fencing and security controls, uncertain

documentation of power and sewage lines, possessions restrictions (when is the site available for clearance, construction and make-good).

c) The brief should also include possible changed usage in the future including the need to make alterations or demolition easier. The opportunities should also be considered, such as the use of soil waste for use as infill elsewhere on the school site or for upgraded telecommunications cabling to other parts of the school site or the consideration of using as much prefabrication off site as possible.

d) The design parameters need also to be set which may cover aspects such as unity of design where the school has an aesthetically valuable heritage footprint, the need to use simple energy saving designs through appropriate building orientation, the provision of room for possible future extensions and upgrades, the value of using prefabricated materials to minimize onsite disruption and utilize windows of opportunity such as school holidays.

e) At a systemic level there is also room for central authorities in both health and education to look at models of design which enables some standardization. These standardized designs need to be made available to the Core Working Group especially if that working group has budgetary and other sign off powers.

f) Also at a system wide level, wherever significant demolition or upgrades or rebuilding are being considered, consideration needs to be given to opting for a green field site. Industry respondents often pointed out the medical and financial advantages of building on green field sites so that hospitals could have sun orientation, ease of movement and cleaning as part of new designs that diminish re-infection rates and crowded noisy building. There has been considerable work done on the advantages to patient recovery and well being and medical staff's morale of building new hospitals on green field sites but the political storms that follow decisions to close down tight, often dilapidated inner city hospital sites have so far made it difficult for governments to go down that logical path.

g) In terms of the environment affected by the building it is essential that the Core Working Group clearly establishes at the earliest stage exactly what the uses of the building will be. If it is a school, the key questions are what kind of learning will be occurring in that proposed building and how does the design contribute to that goal. In health buildings the question is about the ways in which the building design assists with staff efficiency and morale and assists with the healing of patients. For example there has been a great deal of research conducted about the effect of light and fresh air on patient recovery, including the diminution of cross infection. In social housing, the critical questions revolve around liveability, proximity to transport and work and the attractiveness of the buildings and surrounds that will become people's homes.

h) The most important role of the Core Working Group is to provide input and feedback at all stages of the project, especially post construction in a form that will be of use for future quality and cost planning across the whole system (the quality feedback loop).

The Psychology Underpinning Successful Communications Strategies

Communication and consultation are often described as "soft" disciplines. Specialists who can prevent bridges falling down or who build 20 storey buildings are seen as the hard-nosed, methodical action people who have helped bring us into the modern era. However, there are intuitive activities and disciplines which help us to achieve the type of construction achievements that have been the hallmarks of the 19th, 20th and now the 21st centuries. Most of these so called soft disciplines are about how one helps people, often highly skilled,

achieve those construction and engineering goals. The key components are consultation and communication which are easy to talk about but harder to implement.

A model construction project may be completed yet there can be client dissatisfaction, often because the laborious process of consultation had not been fully implemented or the feedback mechanisms put in place. This phenomenon expressed itself in the BER program where adversarial media appeared to have access to school based staff or parent groups who provided either public or confidential briefings of a negative nature to the media. There are lessons to be learned here; in particular, it is better to consult with all stakeholders, devote real time and patience to that process and build in a feedback loop that can help in that particular process or in future projects on that site or on other sites.

Communication strategies should be based on a thorough understanding of the ways that humans co-operate in joint undertakings, the key principles of social dynamics and learning theory plus the ways in which people deliver, accept and understand words and pictures. The disciplines of *organisational and environmental psychology* have become a basic fundamental of modern business activities from management and organisational strategy to marketing and customer relations and to the improvement of working, recreational and living environments. However it is rare for a mature industry such as construction to adopt or examine those disciplines for guidance about either strategies or operations. Although the architectural profession has sometimes exhibited significant comprehension of environmental psychology it has also ignored those lessons and created, for example, forbidding tower blocks in inner city social housing. This general ignoring of psychology disciplines has especially occurred in the case of organisational psychology. This is despite the fact that the construction industry is almost entirely based on the principle of sub-contracting and business and professional alliances, all of which require significant understanding of environmental psychology and social dynamics in order to build trust, reputation, teamwork and client satisfaction.

Cognitive Learning theory is another related discipline which often deals with the unique way that every individual tends to conceptualize, imagine, understand and communicate. For example, some individuals are primarily linear thinkers who move sequentially from one step to another according to established principles (often principles established by their special training or discipline). Others are holistic, preferring to look at the whole picture and often needing to make their own repatterning of the information[7]. Others are more intuitive or prefer to paint a general picture. Some are more eloquent verbally than others who may prefer to see ideas in visuals. Others are quick to read social cues and can detect colleagues who are struggling to understand an issue but are reluctant to show their ignorance. Others are extroverts and tend to take possession of meetings whilst others will only express their reservations behind closed doors and in the presence of people they trust. There are many variations of personality types and skill sets, often over-laid by the professional training they have received but usually the dominating mode of learning in groups starts with concepts and ideas that are familiar before attaching them to new ideas. Participants in a Core Working Group should keep that in mind during briefing sessions as well as avoiding jargon that may not be familiar to all the participants. Failure to understand the individuality of each stakeholder is often a cause of the communication break-downs that are all too common in the construction industry. Misunderstandings, different assumptions, imbalances in knowledge within a group of stakeholders (*asymmetric knowledge*) not dealt

[7] Much of this is based on the Gestalt or Berlin School thinking and research which allow those in learning or social or business situations to construct their own pattern of understanding rather than be taken through locked steps. In business terms it accepts that not all information will be instantly absorbed and retained for re-use if the receiver does not have the time or encouragement to actively assemble and re-assemble the relevant information.

with early in the life of a project can spiral out of control as the project progresses. This is the occupational nightmare of construction professionals such as project managers and financiers which often end up in expensive legal wrangles or worse.

The combination of personality type, communications and learning tendencies and family back-grounds and expectations can help push individuals towards particular professions and occupations. The resultant training and occupational experience usually reinforce those personal attributes and can consolidate thinking and communication patterns. This consolidation can then be a factor in the way they communicate with others outside their profession; in some cases, with a deleterious effect on a project outcome.

Clients can occasionally be affected by *optimism blindness* [8]which describes a state of mind driven by optimism which blinds people to commercial or quality realities. This is why the first few meetings of the Core Working Group need to tactfully but methodically document those risks and opportunities that can derail or assist a project's delivery and goals.

Both clients and professionals, including builders can also allow their decision making to be clouded by *product or materials bias*, sometimes for commercial reasons (a builder is more familiar with one product than another) or for aesthetic and excitement reasons when a client or architect likes the look of a design even though the design or materials may not meet the durability or low-maintenance goals that are essential for that particular project.

For contractors and clients, one of the key questions at the conclusion of the project is: will we want to work together again? This is a de facto measurement of contractor, professional services and client satisfaction and is critical to the smooth operation and credibility of the construction industry, including the reputation of major clients. One serious issue that can arise in a system dominated by open contested tenders or in a boom and bust environment is the implicit encouragement of *instant gratification* which places a greater value on short term gains rather than the achievement of long term goals. Industry and education managers frequently told the author of this paper that the most successful and trusted companies are those that see themselves as long term investors in reputation and corporate sustainability. Even those who dealt with competitive tender processes admitted that there was often an implicit bias in favour of companies of good reputation. "It's only natural that you partner with those you trust and have worked with successfully." said one constructor. Senior bureaucrats in both IT and Construction said they placed great emphasis on the reference sites that were usually required in public tenders.

Finally, these potential communication barriers can be exacerbated by the professional or monetary interests of each stakeholder. It is not always clear who has the key authority in a construction project and who benefits from decisions about design, finance instruments and budget management. For example, some professions earn their fees from a percentage of the final capital cost; others receive a fixed fee and are dedicated to keeping the budget in check. Others will benefit from variations in scope. Others need to be in and out of a job quickly in order to make a profit, others benefit from delays. Some jealously guard their professional status and are reluctant to accept a role they regard as secondary in a project. Others may want to build a reputation that wins industry awards and public plaudits even if the ultimate building detracts aesthetically from or causes light and shadow problems for the existing built environment on that site. All this adds to the mix and requires a strong, tactical communications strategy to set the goals and bring them to fruition at the right cost, with appropriate quality results and in the required time.

[8] See *Best Practice Cost Estimation Standard for Publicly Funded Road and Rail Construction* May 2010 where optimism blindness is identified as risk which can potentially inhibit clear and realistic cost estimations and roll-out feasibility.

Conclusion

This paper has demonstrated the need for a small client based group that can grow in line with any need, to provide the mechanism which expresses the client's anticipated needs and is the structure through which the client can express a clear idea of what is required. It can provide a consistent overseer of the project and allows decision to be made quickly, informed and consistent so that work progress does not falter.

Acknowledgements

The author wishes to thank the members of the Alliance for Building Excellence, Sid Newton, Dennis Lenard and John Woollett for their valuable advice and in-put. Luise Lang's professional psychology insights have assisted with the section on environmental and industrial psychology. Other private and public individuals have donated their time and experience and have done so in confidence. Their views have been significant in the way this paper has addressed the key question of capacity building amongst clients of the construction industry.

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