

# A CONCEPTUAL TOOL FOR ASSESSING CLIENT PERFORMANCE IN THE CONSTRUCTION PROJECT COALITION

**Robby Soetanto, David G. Proverbs, Gary D. Holt**

School of Engineering and the Built Environment, University of Wolverhampton, West Midlands  
WV1 1SB, U.K.

## ABSTRACT

Due to the significant impact of client performance on overall project performance and the interdependence of participant's performance in the construction project coalition (i.e. clients, designers and constructors), there is a need to establish client performance measures. Based on data collected from in-depth interviews with nineteen UK architects and nine UK contractors, a generic tool for the on-going formal assessment of client performance is presented. It was found that this approach to performance assessment (i.e. from the view point of other, non-client coalition participants) should lead to improved project relationships. Data analysis showed that in addition to 'harder' measures such as understanding of project requirements and finance, other, 'softer' measures of client performance (e.g. attitude) were worthy of consideration since they determine the quality of participant relationships. It is recommended that the tool be used to promote more effective client performance and thus enhance coalition relationships, enabling continuous improvement. The ultimate aim is to develop similar tools for the assessment of all coalition participants based on a culture of openness and trust.

Keywords: assessment tool, coalition participants, client performance, perceptions, performance measures, satisfaction.

## INTRODUCTION

The organisation of a construction project is unique in nature because of its temporariness and, because it contains many participants with differing backgrounds and interests [1-5]. Traditionally, the main participants of a project coalition (PC) are the client (as an owner of the project and the one that needs the constructed facility), the architect (commonly engaged as lead designer), and the contractor (who constructs the facility normally under the guidance of the architect). The interactions and inter-relationships between these participants largely determines the overall performance of a construction project [6, 7]. Focusing on individual participants' performance in the PC is worthy of investigation, since overall project performance is dependent on each participant's contribution [8]. These participants' performance is also interdependent [2, 9]. Hence, to achieve a certain level of performance, one participant requires another(s) to perform to a certain level and vice versa.

It has been shown, that client performance has significant impact on successful project implementation [10-13]. In a study of construction time performance, Walker [14] discovered that client related factors are more significant than procurement route adopted. It was recommended that clients should possess a positive attitude and good team interaction skills. A survey by the Construction Clients Forum found that 58 percent of clients reported that their projects were late, 32 percent said that the work was over-budget and 90 percent reported construction defects [15]. However, it has also been suggested that clients should take some responsibility for these shortcomings [16]. Many problems that arise on site, are attributable to clients. These include problems caused by poor communication, late design changes, late payment and so on. It has been well argued that to improve the performance of the industry, all parties should work together harmoniously, and this includes clients. In sum, the satisfactory performance of clients is essential if contractors and professionals are to exercise their duties effectively. Therefore, there is a need to set performance standards for them [17].

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This paper describes the development of a client performance assessment tool based on architects' and contractors' criteria within the context of the PC. The tool was developed from survey of samples of UK architects and contractors. The assessment tool presented gives due consideration to vital performance criteria, i.e. those which influence other coalition participants' performance and project success as a whole. At the time of writing this paper, the tool has not been fully applied in an industrial context. Future research will perform this follow-on stage in taking the tool to definitive conclusion.

## DATA ACQUISITION

Interviews were considered the most appropriate way to gain thorough understanding of architects' and contractors' client performance criteria. Interviews allow the exploration of feeling and other subjective/intuitive factors [18], essential in the evaluation of client performance. Interviews also provide sufficient depth to explore personal values and beliefs.

In-depth, semi-structured interviews with architects and contractors were conducted. These involved asking the respondents two specific questions regarding this subject. These questions were:

1. Do you assess client performance, if so, what criteria do you normally use?
2. In the context of the PC, what level of performance do you require from the client in order to allow you to perform optimally?

Additionally and as was considered necessary, supplementary questions were used to probe and obtain further details and to pursue aspects as recommended by Fellows and Liu [19] (e.g. what do you mean by attitude towards advice?). During interviews, interviewees were also asked whether they conducted a formal assessment of client performance. In such cases, a copy of the assessment form was also obtained, hence providing further data. All interviews were recorded and subsequently transcribed for analysis purposes.

Nineteen architects were chosen from the list of top UK architects [20], and subsequently interviewed. The majority were currently handling major UK and overseas building projects, and were qualified architects at project and top management levels. Their opinions represent the views of a small sample of very experienced UK architects. Nine contractors

were identified from the listing of Key British Enterprises [21] representing top UK contractors, and subsequently interviewed. Views expressed can be considered as those of a small sample of very experienced UK contractors.

## DATA ANALYSIS

Data were analysed using the content analysis technique. Neuman [22] described content analysis as a technique for gathering and analysing the content of text. Here, content refers to words, meanings, pictures, symbols, ideas, themes, or any other message that can be communicated and logically interpreted. Content analysis extracts and categorizes information from text [23]. The analysis captured the content of the transcribed interviews mainly in terms of words and ideas, on what criteria were considered most important to architects and contractors in terms of their feelings of satisfaction and dissatisfaction. These words and ideas were subsequently categorised into phrases or words representing an appropriate measure of performance. Such a technique was successfully used by Holt and Fraser [24] in assessing views of the UK public sector regarding procurement. The analysis was conducted manually.

Neuman [22] also argued that content analysis is nonreactive because the process of placing words, messages, or symbols in text to communicate to a reader or receiver, occurs without influence from the researcher. That is, when interviews are conducted, the interviewees have no prior knowledge of the subsequent content analysis. Moreover, if the interviews are conducted with care, it allows interviewees to express unbiased feelings. Notwithstanding this, it is acknowledged that the interviewees might introduce bias in their opinions since the research sought to include subjective, as well as objective, measures. Any ambiguity in responses was addressed through further questioning, thereby addressing confusion as and if it arose. This also minimised the problems of reliability and validity. For further discussion regarding reliability and validity, readers may wish to consult Silverman [25] and Weber [26].

Weber [26] contended that there is no simple right way to conduct content analysis. Instead, researchers must judge what methods are most appropriate to the prevalent setting. Therefore, content analysis should be tailored to the research aim. In content analysis, there are four

characteristics of text content, i.e. frequency, direction, intensity and space [22]. Here, the coding system adopted was frequency, i.e. counting the occurrence of the same words/ideas in all interviews. Since the primary purpose of the analysis was to identify performance measures related to satisfaction or dissatisfaction feelings, other characteristics were considered irrelevant and subsequently ignored. The unit of analysis used is interview or interviewee. That is, for a particular criterion, the analysis counts how many interviewees deem that criterion important in contributing to their feelings of satisfaction or dissatisfaction. Clients' opinions were not sought because, for the purposes of this particular research, performance assessment was based on the opinions of other participants, i.e. architects and contractors.

### ARCHITECTS' AND CONTRACTORS' PERCEPTIONS OF KEY CLIENT PERFORMANCE CRITERIA

Tables 1 and 2 show extracts of the key client performance criteria according to architects and contractors respectively. The second column of the tables displays the client performance criteria and the following columns represent the responses of architects and contractors during interviews. Most of the criteria are subjective in

nature and considered 'people issues' such as spirit of co-operation, honesty, responsiveness to problems, etc. The first column exhibits the ranks of these criteria according to the frequencies (i.e. number of interviewees who deemed these criteria important). However, the emphasis here is on how architects and contractors consider client performance. A description of the criteria categorised under several main headings is given below.

#### Understanding of project requirements

Architects and contractors agree that this is the most important criterion. It includes criteria related to the project brief, understanding of the building process, and ability to communicate requirements. The client brief should be clear, adequate/appropriate, and specific/definite in order to ensure successful project delivery and client satisfaction. However, evidence suggests that inadequacy of a client brief still continues to cause problems during construction [27, 28]. The poor performance of architects and contractors is often partly attributable to a poor client brief. In informal terms, clients should know what they want from an early stage without the propensity for changing their mind in the latter stages of a project. Furthermore, clients are expected to be able to communicate (i.e. convey) what they want to architects and contractors effectively.

**Table 1. Summary of architects' perceptions of key client performance criteria**

RANK	CLIENT PERFORMANCE CRITERIA	ARCHITECTS' RESPONSES																			TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1	Quality of brief (clarity, definite, specific)			●	●	●			●		●	●	●	●	●	●	●	●	●	●	10
2	Knowing what he wants	●				●			●	●	●		●		●	●			●		8
3	Ability to make rapid decision (rapidity, flexibility)	●						●	●	●				●		●					6
3	Understanding of the building process	●	●			●			●			●		●							6
3	Give achievable / realistic timescale			●	●	●						●		●				●			6
4	Sufficient / adequate budget		●		●						●	●					●				5
4	Timely payment (on schedule)					●	●				●					●					5
4	Adequate continuous involvement/commitment	●									●			●		●			●		5
5	Pay adequate fee (willingness to agree a fee, fair)					●				●						●			●		4
5	Trust, honesty and integrity					●				●						●			●		4
5	Attitude towards advice (respect, open to solutions, flexible)									●					●	●		●			4
5	Co-operativeness / team work	●				●		●								●					4
6	Responsiveness to queries (quick feedback)						●												●	●	3
6	Not keep changing mind (clarity of thinking)							●			●								●		3
7	Be active in financial management (financial approval)	●						●													2
7	Understanding the difficulties and make allowances of it					●													●		2
7	Performance in pre-planning stage (early stage)										●				●						2
8	Help with monitoring	●																			1
8	Allow architect to enjoy project					●															1
8	Clarity of budget and programme						●														1
8	Ability to balance between involvement and interference									●											1
8	Well organised with the team									●											1
8	Administration									●											1
8	Appreciation of architecture														●						1
8	Ability to encourage attitude of proactiveness of all														●						1
8	Receptiveness towards ideas (design flair, opportunities)															●					1
8	Feeling on how enjoyable, pleasant client															●					1
8	Ability to convey/communicate inspiration																	●			1

**Table 2. Summary of contractors' perceptions of key client performance criteria**

RANK	CLIENT PERFORMANCE CRITERIA	CONTRACTORS' RESPONSES									TOTAL
		1	2	3	4	5	6	7	8	9	
1	Quality of brief (clarity, adequacy, appropriateness, etc.)	●	●					●	●	●	5
2	Timely payment		●		●	●				●	4
3	Know what he wants early			●	●				●		3
4	Co-operativeness		●				●				2
4	Trust, honesty and integrity		●				●				2
4	Ability in making decision					●			●		2
4	Adequate funding						●			●	2
4	Commitment/involvement to project			●			●				2
4	Provide adequate time								●	●	2
4	Support of information								●	●	2
5	Not change mind		●								1
5	Give lead designer/consultant proper level of authority		●								1
5	Responsiveness to problems that arise		●								1
5	Attitude to variations (caused by client changes)					●					1
5	Understanding of the building process							●			1
5	Help contractor work to deliver the product on time								●		1

### Criteria related to finance

It is central that clients (as project owners) have adequate funds for their intended projects. This importance was supported by Kometa *et al.* [13] who found that project finance was the most important responsibility of clients to project consultants. Several aspects related to finance were identified during the interviews, including adequacy of funding, timeliness of payment and ease of financial approval (e.g. associated with variations). Moreover, a number of architects suggested that a willingness to agree a fee in advance was crucial to the survival of their companies.

### Criteria related to decision making

Cherns and Bryant [1] contended that client organisations are complex and not unitary. This often causes problems in the decision making process within client organisations. However, the decisions that clients must make, are often in the crucial period of project execution and may significantly affect architect and contractor performance. Therefore, clients are expected to be able to make high quality and rapid, as well as single voice, decisions.

### Criteria related to management skills

Traditionally, architects are often appointed as lead designers and are expected to communicate the client's requirements to the contractor. Lead designers are expected to make important decisions on behalf of their clients in order to keep to budget and schedule. If this authority is not properly delegated and communicated by clients at the outset, delay can result and less than optimal project performance results. One interviewed architect contended that clients should organise their project team (i.e. client

representatives) in order to ensure that the project is well administered. Moreover, pre-planning by clients is also extremely important if their architects and contractors are expected to perform effectively.

### Criteria related to support to contractor/architect

It is not surprising that both architects and contractors indicated the need for support and involvement from their clients. Foremost, is information support, particularly in terms of quality and timeliness. Clients should also set adequate/realistic timeframes for design and construction. One architect suggested that the client's role in monitoring contractor performance also contributes to successful project implementation. A caveat to this was the need to strike a balance between an adequate level of involvement and what could be construed as interference. It has become widely accepted that successful project performance requires client involvement, however, if clients become too involved, then this soon becomes interference which hampers the performance of their professionals and contractors alike [29].

### Criteria related to attitude

While such criteria are considered subjective and 'softer' in nature, nearly all architects and contractors suggested that 'attitude' has a significant influence on the satisfaction or dissatisfaction of the PC. These criteria support and sustain the quality of working relationships between participants. Such criteria identified from interviews include: integrity and honesty, team work/spirit of co-operation, responsiveness to problems, understanding architect/contractor difficulties, attitude to variations caused by

client changes, allowing architect/contractor to 'enjoy' projects, appreciation of architecture, ability to encourage pro-activeness among parties, attitude towards advice, and client personality (e.g. general feeling on the pleasantness of the client).

### GENERIC FORMAL ASSESSMENT OF CLIENT PERFORMANCE

None of the interviewees were currently implementing any formal assessment of client performance, but all undertook a perceptive assessment of some kind. Some found the very idea of implementing a formal assessment to be a rather strange concept. As one architect stated:

"Some clients think they know best and we [architects] never even consider whether they are performing properly... what right do we have to tell them that they are not performing?"

Based on the interviews and analysis, a conceptual tool for the generic formal assessment of client performance was developed. The assessment is designed to be undertaken by architects and/or contractors. A completed assessment form is displayed in Table 3. Here, performance is defined under the following headings; *Understanding of project requirements, Finance, Decision making, Management skills, Support to contractor/architect, and Attitude.*

#### The performance assessment

In assessing client performance, the architect and/or contractor would first need to determine the weighting of each criterion, i.e. Importance (I). These weightings are assumed to be constant throughout the whole project life so as to allow the client to form a suitable strategy aimed at satisfying the most important criteria. This level of importance (I) indicates the value or weight of the criterion, based on the assessor's feeling of satisfaction or dissatisfaction. The level of importance (I) ranges between 0 to 10, indicating a continuum between no importance and extremely important respectively. Hence, zero (0) Importance indicates the criterion to have no impact on the level of satisfaction attained and therefore effort expended on this criterion can be considered wasteful. Conversely, an importance value of ten (10) indicates a criterion to have a very significant impact on the level of satisfaction and so attempt should be made to

satisfy it to its fullest. Adequate performance under important criteria will derive a high level of satisfaction. At any time during the project, the client may request the architect and/or the contractor to make an assessment. Although this process slightly adds an administrative burden, the overall benefit due to harmonious relationships outweighs this. The architect and/or contractor will indicate their level of satisfaction (S) for each criterion on a scale of 0 to 10, representing a continuum between extremely poor and excellent respectively. Thus, the value of S illustrates how well the client is performing in a certain task according to the assessors' opinion.

On completing the assessment, the architect/contractor would then return the form to the client, who would then analyse the response. For each criterion the Satisfaction Weighted Scale (SWS) and Performance Improvement Potential Scale (PIPS) is calculated by the client, representing a 'micro' evaluation of performance. Then under each heading, SWS and PIPS are calculated, representing a 'macro' evaluation of performance, e.g. for *Decision Making*. Finally, the overall values for SWS and PIPS represent a generic assessment, indicating overall satisfaction levels and the need for improvement. The SWS and PIPS are now explained in more detail.

#### The Satisfaction Weighted Scale (SWS)

The SWS (valued between 0-10) represents a weighted level of (client performance) satisfaction, as calculated by the following formula:

$$\sqrt{I \times S} \tag{1}$$

That is, the square root of the product of the level of satisfaction (S) and the corresponding level of importance (I), as indicated by the assessors, i.e. architects and contractors. The utilization of the square root is simply to provide convenient values of SWS between 0-10 which may be readily interpreted by the user. Hence, a high score represents a high feeling of satisfaction and vice versa.

Locke [30] reported that emotional responses (i.e. feelings of satisfaction and dissatisfaction) are also dependent on value importance; that is how an individual deems a certain aspect of the task in their value hierarchy. The implication for participants of the PC is how one participant values a certain task undertaken by another participant and how this impacts their own performance and levels of satisfaction.

**Table 3 Client performance assessment tool: worked example**

Client Performance Criteria	I *	S **	SWS	PIPS	PR
	Importance	Satisfaction	$\sqrt{(I \times S)}$	(S-I)	Priority Rank
<b>Understanding of Project Requirements</b>					
• Quality of brief, in terms of clarity	10	5	7.07	-5	3
• Quality of brief, in terms of adequacy and appropriateness	10	7	8.37	-3	5
• Understanding of the building process	8	4	5.66	-4	4
• Knowing what they want early	9	6	7.35	-3	5
• Clarity of thinking (not changing their mind)	10	4	6.32	-6	2
• Ability to convey what they want	8	8	8.00	0	8
		<b>Average</b>	<b>7.13</b>	<b>-3.5</b>	<b>4.5</b>
<b>Finance</b>					
• Adequacy of funding for the project	10	9	9.49	-1	7
• Timeliness of payment	10	6	7.75	-4	4
• Ease of financial approval due to variations	8	4	5.66	-4	4
• Willingness to agree a fee (adequate fee)	7	8	7.48	1	9
		<b>Average</b>	<b>7.60</b>	<b>-2.0</b>	<b>6.0</b>
<b>Decision Making</b>					
• Ability to make rapid and decisive decisions	9	6	7.35	-3	5
• Quality of the decisions	9	8	8.49	-1	7
• Unity (i.e. clear and single voice)	9	4	6.00	-5	3
		<b>Average</b>	<b>7.28</b>	<b>-3.0</b>	<b>5.0</b>
<b>Management Skills</b>					
• Delegation (give lead designer proper level of authority)	7	8	7.48	1	9
• Organisational skills	7	8	7.48	1	9
• Performance in pre-planning (early stages performance)	7	6	6.48	-1	7
• Administration	6	9	7.35	3	10
		<b>Average</b>	<b>7.20</b>	<b>1.0</b>	<b>8.8</b>
<b>Support to Contractor / Architect</b>					
• Information support (quality, timely, etc.)	9	3	5.20	-6	2
• Adequacy of time (achievable and realistic timescale)	7	7	7.00	0	8
• Monitoring progress/performance	0				
• Adequate continuous involvement/commitment	5	5	5.00	0	8
• Ability to balance between involvement and interference	8	5	6.32	-3	5
		<b>Average</b>	<b>5.88</b>	<b>-2.3</b>	<b>5.8</b>
<b>Attitude</b>					
• Integrity and honesty	10	4	6.32	-6	2
• Collaborative/spirit of cooperation/team work	10	8	8.94	-2	6
• Responsiveness to problems (queries) that arise	10	1	3.16	-9	1
• Understanding architect/contractor difficulties	5	8	6.32	3	10
• Attitude to variations caused by client changes	9	9	9.00	0	8
• Allowing architect/contractor to enjoy projects	0				
• Appreciation of architecture	1	10	3.16	9	11
• Ability to encourage attitude of pro-activeness of all	3	4	3.46	1	9
• Attitude towards advice (respect, open to solutions, flexible, receptiveness towards ideas)	7	7	7.00	0	8
• Personality (e.g. general feeling on the pleasantness of the client)	9	8	8.49	-1	7
			<b>6.21</b>	<b>-0.6</b>	<b>6.9</b>
<b>OVERALL PROJECT</b>		<b>AVERAGE</b>	<b>6.88</b>	<b>-1.7</b>	

**Note:**

\* Importance (0 - 10) : 0 = no importance, 10 = extremely important

\*\* Satisfaction (0 - 10) : 0 = extremely poor, 10 = excellent

If a criterion is irrelevant and does not have any impact on your feelings of satisfaction or dissatisfaction, you can ignore (i.e. give I=0).

The extent to which the performance of other coalition participants impacts upon the performance of another will determine that participant's perceived importance of the other's

performance. This is simply because the satisfactory performance of other coalition participants enables another participant to achieve their own goals and to perform better.

Locke [30] also suggested that failing to perform a more important task will produce more dissatisfaction, and vice-versa. Liu and Walker [8] stated that the more important the value, the wider the possible range of satisfaction or dissatisfaction feelings associated with it. In evaluating levels of satisfaction or dissatisfaction, importance represents a key determinant, hence its inclusion in the assessment tool.

In this process, two criteria may have the same SWS but different values for Importance and Satisfaction. For instance, in the hypothetical example given in Table 3, according to the contractor, *Responsiveness to problems (queries) that arise* has scores of 10 for Importance and 1 for Satisfaction, and *Appreciation of architecture* has the exact opposite. Both criteria have the same SWS, that is 3.16, but do they generate the same level of satisfaction for the assessor? The answer is yes because *Responsiveness to problems (queries) that arise*, which has very high Importance but very low Satisfaction, produces a low feeling of satisfaction, *Appreciation of architecture*, which has very low Importance but very high Satisfaction also produces a low feeling of satisfaction. That is, in the case of *Appreciation of architecture*, while the level of satisfaction (S) is high, because the criterion is not considered vitally important by the assessor, the ultimate satisfaction feeling is lower.

The SWS for each heading, (e.g. *Understanding of project requirements*) is the mean SWS for that heading based on the number of relevant criteria derived from:

$$\text{Generic SWS} = \frac{\sum_{i=1}^n \sqrt{I \times S}}{n} \quad (2)$$

where n = number of criteria attributable to given generic heading.

Hence, for *Understanding of project requirements* the overall SWS (ranging between 0-10) is 7.13, suggesting a reasonable level of satisfaction by the assessor. Note, where the assessor does not consider certain criteria to be relevant (e.g. *Monitoring progress/performance* and *Allowing architect/contractor to enjoy project*) an importance rating of 0 is allocated and the criterion subsequently removed from the calculation.

Finally, overall SWS gives an indication of the overall mean total of SWS for the assessment based on the six headings, which in the example

is 6.88 representing an above average feeling of satisfaction (in this context 'average' is taken as the median value of 5). Where assessment is undertaken at times which exclude certain criteria (e.g. prior to work on site commencing), these are simply ignored and form no part of the calculation. Additionally, the overall SWS can be used for inter-project comparison, thereby providing a useful basis on which participants can (longitudinally) compare the performance of their clients overtime. Also, clients can (cross-sectionally) monitor their own performance against a number of projects, allowing them to focus their attention in the strive for continuous improvement.

### The Performance Improvement Potential Scale (PIPS)

The PIPS for each criterion is derived simply by subtracting the value for Importance from the value for Satisfaction (i.e. S - I). Hence, PIPS (with a range between -10 to 10) is defined as the difference between Satisfaction and Importance for a particular criterion. The PIPS indicates the need for improvement in any particular criterion, and hence lower values should receive greater attention by clients. In the example given, a contractor has allocated for *Responsiveness to problems (queries) that arise*, scores of 10 and 1 for Importance and Satisfaction respectively, the PIPS produced is a value of -9. In the case of *Appreciation of architecture*, where values of 1 and 10 have been allocated to Importance and Satisfaction, the corresponding PIPS value would be 9. Here, the contractor is all but completely satisfied with the client's performance for this criterion and it does not therefore require significant corrective action.

In summary, criteria that are allocated negative PIPS values require improvement, while positive values indicate those criteria that have been, to some extent satisfied. Ideally, the value of Importance and Satisfaction should be the same in order to produce zero PIPS values indicating an optimum level of client performance. Here, clients are satisfying their assessors, but are not wasting their efforts. Hence, in reality, optimum client performance might be extremely difficult to achieve. In the performance assessment, attention should be focused on aspects of client performance, i.e. criteria, which need most improvement. Clients should therefore focus on improving their performance under the criteria with negative PIPS values.

Adopting the same principles as described for the SWS, PIPS values for each heading (e.g. *Understanding of project requirements*) and overall, can be calculated. The overall PIPS values can then be used for similar purposes as described for the overall SWS value (i.e. inter-project comparison and performance monitoring).

### Priority Rank (PR)

The Priority Rank (PR) represents the ranking of PIPS values (with lower PIPS values assigned higher rankings). Criteria with the same PIPS are assigned the same rank. Criteria with zero Importance are not ranked. Although, it may be argued that two criteria with the same rank may need different approaches and certainly different solutions for addressing the problems, the same rank indicates that the criteria have the same potential for improvement in order to attain higher satisfaction levels. The PR for each heading indicates the comparative ranking of these.

## PRACTICAL APPLICATION

Serving as a tool to develop harmonious interrelationships between coalition participants, implementation of the assessment could commence on appointment of the service providers, i.e. architect and/or contractor. The coalition participants can discuss the assessment(s) at regular monthly meetings. In the first instance, the assessors (architect and contractor) would need to establish values of importance, independently for each criterion. As these importance values indicated by the two assessors are unlikely to be the same, their independent assessments should be considered complementary, i.e. in unison by the client. The client would then be able to focus on criteria with relatively higher levels of importance. After an agreed period of time, the client would invite an assessment to be made. In receipt of the assessment, the client can subsequently adopt appropriate strategies to address weaknesses, i.e. causes of dissatisfaction. This can be considered both at a micro level (i.e. in respect of particular criterion) and/or at a macro level (to be compared with other projects or with a preceding assessment).

In the example provided in Table 3, the overall SWS attained is 6.88, indicating a reasonable level of satisfaction. The overall PIPS is -1.7 indicating the need for some improvement, if the assessor (architect or contractor) is to be fully satisfied. The PRs provide guidance to the client

as to which criteria require most attention. The most important criterion is *Responsiveness to problems (queries) that arise*, and hence, the client should seek to improve this aspect of performance as it is causing high levels of dissatisfaction. The criteria ranked second are *Clarity of thinking (not changing mind)*, *Information support (quality, timely, etc.)* and *Integrity and honesty*, and should be considered next. The PR for each heading provides a cross-comparison of priority for all headings. Here, *Understanding of project requirements*, which has 4.5 PR, followed by *Decision making* (5.0 PR) are the most important, followed by the *Support to contractor/architect* (5.8 PR) and *Finance* (6.0 PR). *Attitude* and *Management skills*, with a PR of 6.9 and 8.8 respectively, reflect a reasonably high level of satisfaction for such aspects.

The client can then compare current results with previous assessments conducted on the project. The assessment requires a team effort including all coalition participants to pursue continuous improvement and satisfactory performance. In this regard, the intention is to develop similar tools for assessing the performance of architects and contractors, by the appropriate coalition participants. Hence, assessment would be a mutual process in a real sense, supporting the development of long-term relationships and high satisfaction levels. As a final word, the 'values' derived from the assessment are not critical, but the tool essentially serves as a guide to flagging-up problems so that they can be discussed/resolved at the said meetings.

## REFERENCES

1. Cherns, A.B. and Bryant, D.T., Studying the client's role in construction management, *Construction Management and Economics*, 1984, vol. 2, pp. 177-184.
2. Mohsini, R.A., Performance and building: problems of evaluation, *Journal of Performance of Constructed Facilities*, ASCE, 1989, vol. 3(4), pp. 235-242.
3. Mohsini, R.A. and Davidson, C.H., Determinants of performance in the traditional building process, *Construction Management and Economics*, 1992, vol. 10, pp. 343-359.
4. Munns, A.K., Measuring mutual confidence in UK construction projects, *Journal of Management in Engineering*, ASCE, 1996, vol. 12(1), pp. 26-33.

5. Reve, T. and Levitt, R.E., Organization and governance in construction, *Project Management*, 1984, vol. 2(1), pp. 17-25.
6. Smith, A. and Wilkins, B., Team relationships and related critical factors in the successful procurement of health care facilities, *Journal of Construction Procurement*, 1996, vol. 2(1), pp. 30-40.
7. Egan, J., *Rethinking Construction*, The report of the Construction Task Force on the scope for improving quality and efficiency in UK construction, Department of the Environment, Transport and the Regions, London, 1998.
8. Liu, A.M.M. and Walker, A., Evaluation of project outcomes, *Construction Management and Economics*, 1998, vol. 16, pp. 209-219.
9. Higgin, G. and Jessop, N., *Communications in the Building Industry: the Report of a Pilot Study*, Tavistock Publications Ltd, London, 1965.
10. NEDO, *Before You Build: What a Client Needs to Know about the Construction Industry*, HMSO, London, 1974.
11. Bennet, J., *Construction Project Management*, Butterworths, London, 1985.
12. Thompson, P., The client role in project management. *International Journal of Project Management*, 1991, vol. 9(2), pp. 90-92.
13. Kometa, S.T., Olomolaiye, P.O. and Harris, F.C., An evaluation of clients' needs and responsibilities in the construction process, *Engineering, Construction and Architectural Management*, 1995, vol. 2(1), pp. 57-76.
14. Walker, D.H.T., Procurement systems and construction time performance, in *Proceedings of CIB W92 Symposium, East meets West*, Rowlinson, S. (ed), CIB Publication no: 175, Hong Kong University, Hong Kong, 1994, pp. 343-351.
15. Ridout, G., Clients frustrated at industry performance, *Contract Journal*, 14 April 1999.
16. Wood, T., Clients must take blame, *Contract Journal*, 3 June 1999.
17. Anon, Let's set standards for the clients, too, *Construction News*, 10 June 1999, p. 12.
18. Holt, G.D., *A Guide to Successful Dissertation Study for Students of the Built Environment*, second edition, The Built Environment Research Unit, University of Wolverhampton, 1998.
19. Fellows, R. and Liu, A., *Research Methods for Construction*, Blackwell Science Ltd, Oxford, 1997.
20. Knutt, E. and Osborne, J., Consultants league table: Top 100 architects, *Building*, 2 October 1998, pp. 50-52.
21. *Key British Enterprises*, Dun and Bradstreet, London, 1998.
22. Neuman, W.L., *Social Research Methods: Qualitative and Quantitative Approaches*, third edition, Allyn and Bacon, Boston, 1997.
23. Simister, S.J., *An Investigation into the Influences on Construction Professionals' Working Practices*, Unpublished Ph.D. thesis, University of Reading, 1994.
24. Holt, G.D. and Fraser, J., Partnering in the U.K. public sector: Experiences, perceptions and future direction, in *Proceedings of the Seventh East Asia-Pacific Conference (EASEC-7)*, Kochi University of Technology, Japan, 27-29 August 1999, vol. 2, pp. 1685-1690.
25. Silverman, D., *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction*, Sage Publications Ltd, London, 1993.
26. Weber, R.P., *Basic Content Analysis*, second edition, Sage Publications Ltd, London, 1990.
27. Bresnen, M.J. and Haslam, C.O., Construction industry clients: a survey of their attributes and project management practices, *Construction Management and Economics*, 1991, vol. 9, pp. 327-342.
28. Barrett, P. and Stanley, C., *Better Construction Briefing*, Blackwell Science Ltd, Oxford, 1999.
29. *Practical advice for the client intending to build*, CIRIA Special Publication, CIRIA, London, 1987.
30. Locke, E.A., What is job satisfaction? *Organizational Behavior and Human Performance*, 1969, vol. 4, pp. 309-336.