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The disclosure of costs and income on incomplete contracts in the financial statements of contractors

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Abstract

The standard and generally accepted guideline for the accounting treatment of revenue and costs associated with construction contracts is *AC109/IAS11: Construction Contracts* which recognises that contract start and end dates usually fall into different accounting periods. This causes the problem that forms the primary focus of this article namely: the allocation of contract revenue and costs to the accounting periods in which construction work is performed.

Critical to the above allocation is the ability to determine percentage of completion of contract and cost to completion at the balance sheet date (reporting date). The important activities in this regard according to *AC109/IAS11* are to "measure" and "estimate" reliably.

AC109/IAS11 contains detailed guidelines on how these aspects should be dealt with. However questions arise as to who the relevant role players are and how these actions should be performed. It seems obvious that the guidelines used for determining the stage of completion should correspond with the guidelines for on site cost control. *AC109/IAS11* gives guidance by stating clearly that the provisions of the statement should be read in conjunction with *AC000/Framework: Framework for the preparation and presentation of financial statements*.

South African literature on the subject is limited to textbooks with detailed guidelines to assist accounting students and qualified accountants. No other discussions or guidelines could be found that are directed at the built environment professionals in general or the contractor in particular regarding the topic of recognition of cost according to formal accounting guidelines.

The research on which the article is based attempted to obtain clarification on key aspects from the experts on the subject namely the registered auditors and accountants of contractors. The results of the survey indicated that they interpret *AC109/IAS11* to require no other skills than general accounting abilities. It also showed that certain important terms and activities described in *AC109/IAS11* are interpreted in ways that differ from how built environment professionals would interpret the same terms.

From the study it became apparent that problems in construction accounting and reporting could arise due to the fact that certain guidelines and terms in *AC109/IAS11* are not consistently interpreted by all involved. These apparent ambiguities will influence the recognition of costs in different phases of completion of a construction contract.

Keywords: *AC109/IAS11* construction contracts percentage-of-completion method costs

Note: For clarity on referencing of accounting and auditing guidelines see reference section.

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Abstrak

Die standaard en algemeen aanvaarde riglyn vir die rekeningkundige verantwoording van inkomste en koste wat met konstruksiekontrakte verband hou is *RE109/IAS11: Konstruksiekontrakte* wat erkenning gee aan die feit dat kontrakbedrywighede begin en afgehandel word in verskillende rekenpligtige tydperke. Dit gee aanleiding tot die primêre fokus van hierdie artikel: die toedeling van konstrusieinkomste en konstrusiekoste aan die rekenpligtige tydperke waarin die konstrusiewerk verrig word.

'n Kritiese aspek tot bogemelde toedeling is die vermoë om die persentasie van voltooiing van die kontrak en koste tot voltooiing daarop te bepaal op die balansstaatdatum (verslagdoeningsdatum). Die belangrike aktiwiteite in die geval volgens *RE109/IAS11* is om betroubaar te "meet" en te "beraam".

RE109/IAS11 bevat gedetailleerde riglyne vir die hantering van bogemelde aspekte. Die vraag wat egter ontstaan het is wie moet wat doen en hoe dit gedoen moet word. Dit het geblyk ooglopend te wees dat die riglyne vir die bepaling van die stadium van voltooiing sou ooreenstem met riglyne wat sou geld vir die beheer van kostes op terrein. *RE109/IAS11* verskaf riglyne deur dit onomwonde te stel dat die bepalings van die standpunt saam gelees moet word met *RE000/Raamwerk: Raamwerk vir die Opstel en Aanbieding van Finansiële State*.

Suid-Afrikaanse literatuur oor die onderwerp is beperk tot handboeke wat gedetailleerde riglyne bevat om hulp te verleen aan rekeningkunde studente en gekwalifiseerde rekenmeesters maar geen ander besprekings of riglyne kon opgespoor word wat gerig is op professionele persone in die bouomgewing in die algemeen of spesifiek op die kontrakteur ten opsigte van die onderwerp van erkenning van kostes ingevolge formele rekeningkundige riglyne nie.

Die navorsing waarop die artikel gebaseer is poog om duidelikheid te bekom rondom sleutelaspekte vanaf die kenners op die gebied naamlik die geregistreerde ouditeure en rekenmeesters van kontrakteurs. Die resultate van die opname toon dat hulle *RE109/IAS11* interpreteer dat daar niks meer as algemene rekenmeesters vermoëns van hulle vereis word nie. Dit het ook aangetoon dat hulle sekere belangrike terme en aktiwiteite verduidelik in *RE109/IAS11* verskillend geïnterpreteer as wat professionele persone in die bou omgewing dit sou doen.

Dit blyk daarom vanuit die navorsing dat probleme in konstrusierekeningkunde en -verslagdoening mag ontstaan weens die feit dat sekere riglyne en terme in *RE109/IAS11* nie konsekwent geïnterpreteer word deur die betrokke rolspelers. Die ooglopende onsekerhede beïnvloed die erkenning van koste in die verskillende fases van voltooiing van 'n konstrusiekontrak.

Sleutelwoorde: *RE109/IAS11* konstrusiekontrakte persentasie-van-voltooiings metode koste

Nota: Vir meer duidelikheid rondom verwysings na rekeningkundige en ouditriglyne raadpleeg die bronverwysings.

1. Introduction

Adrian, J.J. & Adrian, D.J. (1999: 3) stated that the success of a construction firm is closely aligned to and determined by its ability to forecast and control costs. Both these functions have accounting as their base.

Although no other industry needs sound accounting practice more than construction firms, the construction industry has a history of neglecting to perform the accounting function properly. Construction firms in the United States of America fail annually and many of the reasons can be traced to inadequate accounting practices (Adrian, J.J. & Adrian, D.J., 1999: 3).

Literature, however, indicates that the many unique characteristics of construction accounting render generic financial management teachings almost useless. The problem is either related to the nature of construction accounting itself or to the way financial reporting in the construction industry is done.

Abraham Briloff, as cited by Adrian, J.J. & Adrian, D.J. (1999: 3), in his book *Unaccountable Accounting* poses the question as to whether one plus one always equals two in the accounting profession, and draws attention to the fact that alternative accounting methods available to the profession often result in financial statements that are misleading or open to interpretation.

Adrian, J.J. & Adrian, D.J. (1999: 121) indicated that these alternative accounting methods and means of expressing financial data in the financial statements are especially troublesome to the construction industry and often result in lenders and sureties falling victim to misleading financial statements. The contractor's ability to continue as a going concern often depends on his accountant's ability to present financial statements in the most favourable light. These type of statements (and allegations) led to the question whether accounting in construction should be considered differently from accounting in other fields.

In a construction entity one would expect to find a variety of built environment professionals involved in planning, production, on site cost control, etc. They could be internal personnel or external consultants. Furthermore, accounting professionals are expected to be involved in preparing financial records, once again as internal personnel or external consultants. It would be logical to assume and expect that these professionals use methods and systems that are mutually compatible to ensure effective and accurate information

sharing. Enquiries into the validity of these perceptions, however, resulted in a different perspective.

According to Peterson (2005: preface v), business schools teach the fundamental principles of financial management to their students but the many unique characteristics of the construction industry, however, render the usefulness of these teachings almost meaningless. This is apparently more evident in the construction industry than any other industry.

Why does the construction industry experience accounting problems? The answer could be all or some of the following:

- The accounting education of built environment professionals is not up to standard or the standard required has not yet been established or is misdirected.
- The accounting education of built environment professionals is passed on to the accounting departments of those institutions where they encounter the problems as pointed out by Peterson. Is it assumed that built environment professionals will do the financial adaptations and applications to construction, on their own, as years go by?
- Contractors do not spend as much time, energy and resources on the financial planning of their businesses as they do on the operational planning of their businesses. The financial plan and the execution of that plan need to be in place before the contractor starts with construction on site.
- According to Shinn (2002: 3) the design of the accounting system for a construction entity can never be left to the accountant. The construction manager knows what information is necessary to successfully manage a project and therefore the accounting system should rather be management orientated and directed. Utilising more than one reliable system is costly and could lead to time wasted on lengthy reconciliations or clarifying possible contradictions.
- The situation might exist where accountants and contractors do not communicate with sufficient clarity to avoid ambiguity and costly mistakes. Contractors cannot qualify as accountants, or accountants as built environment professionals, just to comply with guidelines such as the South African Institute of Chartered Accountants' (SAICA) *AC109/IAS11: Construction contracts* (reporting principles for contractors). *AC109/IAS11* should be clear to all parties

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involved in the preparation and presentation of the financial statements of a contractor. Are statements such as AC109/IAS11 written for qualified accountants only? Will any user of the statement be able to interpret it correctly? Will financial statements compiled by accountants and non-accountants show the same results if applied to the results of the same construction contracts?

2. The current situation or the current perception of the situation

2.1 The type of accounting problems encountered by contractors in practice

The ability of a contractor to estimate as well as to manage the cash flow, distinguishes him from his competition in the industry. Contractors seem to accept and even prefer a situation where their cost control on projects is done with the aid of systems other than their formal accounting system. Numerous reasons are given for this. Although it is apparent that the list below is not exhaustive, some consequential problems are discussed to determine its relevance to the recognition of costs in different accounting periods. The following seem to be general guidelines:

2.1.1 Timeliness and affordability of accounting reports

An accounting system is normally two to three months behind the current date unless a major effort is made in recruiting accounting personnel and purchasing expensive computer software and updates. The situation is worse for the smaller contractor than for the larger contractor and affordability of an adequate infrastructure is the main obstacle. Reports are of no use unless received in time to implement changes to rectify emerging problems.

2.1.2 The perceived reliability of accounting reports

An accounting clerk can verify that an expense is legitimate in terms of description, value, quantity and cost code, but he will not be able to verify it in terms of its sequence in the construction procedure. Manipulations and errors are not easily spotted. This leads to a loss of confidence by managers (non-accountants) in reports that are technically correct but comply with principles unfamiliar and unclear to them.

2.1.3 Possible reconcilability of various financial reports

It is difficult to persuade individuals, who spend long hours to ensure that their control systems are reliable, to sit down and reconcile it with another system that produces different answers, especially if they do not have experience in each other's field of expertise. This could be avoided with simultaneous input by various professionals on the same system. Everybody concerned needs to be able to interpret and understand the underlying accounting principles in a consistent fashion.

2.1.4 Non-availability of reports containing estimated, budgeted and actual amounts

Very few accounting systems are capable of reporting on estimations, budgeted and actual amounts. Most contractors settle for a hybrid spreadsheet solution that runs separately from the accounting system. These systems are usually maintained by built environment professionals rather than accountants.

2.1.5 Comprehension difficulties with financial reports in general

Contractors generally seem to struggle with understanding accounting concepts. Could this be attributed to unclear guidelines or merely lack of training opportunities?

2.1.6 Summary

Construction entities operate mainly as public companies, private companies, close corporations, partnerships and sole traders. Apart from a few exceptions these business forms are usually a reliable indication of the physical size and contracting abilities of the construction entity. The same applies to contracts awarded to them and the duration and extent thereof. The number of personnel making up the accounting department, their qualifications, expertise and experience, are almost always directly related to the entities' size. A contractor that cannot afford the luxury of a qualified internal accountant will revert to the engagement of external auditors and/or accountants.

In the case of a company, the directors are responsible for the financial statements. Private companies may, under certain circumstances and conditions, transfer this duty to their external auditors and accountants. Usually when close corporations and other

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types of businesses appoint registered auditors and accountants for their accounting and tax responsibilities, they would automatically request them to compile their financial statements. There is, however, no obligation to do so. The entity may compile its own statements.

The question therefore is: Will statements compiled by external auditors and statements compiled by internal accountants always be similar in principle and specifics?

2.2 General deductions and resulting questions:

- Where external auditors and accountants draw up the financial statements of a contracting entity, do they accomplish this on their own without any assistance from built environment professionals?
- If built environment professionals know, at best, little or nothing about accounting principles and guidelines and the impact thereof on their financial statements, are they in a position to give any assistance in compiling financial statements?
- Built environment professionals are of the opinion that a person must first be able to measure before he can estimate. Do accountants share this opinion?
- If the built environment professionals do not assist the external auditors and accountants or their own internal accountants with the compilation of financial statements and verification of balance sheet items such as work-in-progress, where do accountants acquire the skills needed to measure and estimate to be able to audit items such as 'cost to complete' on a construction contract?
- Are registered auditors and accountants allowed to rely on the work of an expert when needed? According to SAAS620/ISA620 they can use the expert's work but not accept it as final verification. In discussions between the AICPA and International Accounting and Auditing Standards Board (IAASB), the same concerns are being raised. Whether this will result in feasible solutions remains to be seen.
- The solution might be that registered auditors and accountants may make use of a built environment professional as a member of their audit team, or rely on internal controls designed to authenticate accounting procedures. The biggest shortcoming of internal auditors, however, is the

fact that they are usually accounting-orientated personnel. Designers of controls (and systems) need to be experienced in accounting, auditing and construction related activities. Such persons appear not to exist.

2.3. The unavailability of literature and guidelines on the topic of construction accounting

Useful publications on cost accounting are numerous but useful publications on construction accounting are scarce. The literature on construction accounting can be grouped as follows:

- Accounting literature that contains prescriptions, guidelines, statements, sections in acts and other statutory documentation. Text books for accounting students (mostly textbooks on GAAP for prospective Chartered Accountants) which are mostly theoretical of nature and contain little reference to practice. *AC109/IAS11: Construction contracts*, is such an example.
- Accounting material from the United States of America containing their alternative/equivalent of *AC109/IAS11*. This includes the *Accounting Research Bulletin 45*, (1955) and the 1981 *Statement of Position 81-1*. The American Institute of Certified Public Accountant's (AICPA) *Professional Issues Task Force Practice Alert (2000-3)* for construction companies proves to be a valuable guideline.

3. AC109/IAS11 and recognition of contract costs and revenue and recognition of proportionate profit based on the determination of percentage of completion on the date of the financial statements

The standard guideline for accounting for construction firms is *AC109/IAS11: Construction Contracts*, which recognises that with large contracts the start and end dates usually fall into different accounting periods. This creates a problem that forms the primary focus of this article namely the allocation of contract revenue and costs to the accounting periods in which construction work is performed. According to Everingham *et al.* (2004: 22:1) the major accounting problem facing a contractor is the determination of "an equitable method of revenue and costs allocation" and failure to do so adequately can lead to profit manipulation. The longer the duration of the contract the greater the problems surrounding

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profit recognition. Critical to the above allocation is the ability to determine the percentage-of-completion of the contract and the cost-to-complete at the balance sheet date (reporting date). The important activities in recognition in this regard are to 'measure', 'estimate' and 'identify' reliably the revenue and costs associated with the contract.

AC109.03/IAS11.03 provides definitions for a construction contract, a fixed price contract and a cost plus contract. AC109.22/IAS11.22 states that when the outcome of a construction contract can be estimated reliably, contract revenue and contract costs associated with the construction contract should be recognised as revenue and expenses respectively with reference to the state of completion of the contract at the balance sheet date. The stage of completion should be based on the work completed on the contract at the balance sheet date. An expected loss on the construction contract should immediately be recognised as an expense in accordance with AC109.36/IAS11.36.

AC109.23/IAS11.23 refers to a fixed price contract and states that in the case of a fixed price contract, the outcome of a construction contract can be estimated reliably when all of the following conditions are met:

- Total contract revenue can be measured reliably.
- It is probable that the economic benefits associated with the contract will flow to the enterprise.
- Both the contract costs to complete the contract and the stage of contract completion at the balance sheet date can be measured reliably.
- The contract costs attributable to the contract can be clearly identified and measured reliably so that actual contract costs incurred can be compared with prior estimates.

AC109.24/IAS11.24 furthermore states that in the case of a cost plus contract, the outcome of a construction contract can be estimated reliably when both of the following conditions are met:

- It is probable that the economic benefits associated with the contract will flow to the enterprise.
- The contract costs attributable to the contract, whether or not specifically reimbursable, can be clearly identified and measured reliably.

In the Introduction Paragraph to AC109/IAS11 it is stated that the provisions of the statement should be read in conjunction with AC000/*Framework: Framework for the Preparation and Presentation of Financial Statements*. The reference is repeated in the Index part of AC109/IAS11. The Objective Paragraph in AC109/IAS11 places it beyond argument with the wording: the objective of this statement (AC109.01/IAS11.01) is to prescribe the accounting treatment of revenue and costs associated with construction contracts. It is also stated that AC109/IAS11 uses the recognition criteria established in the above framework and that AC000/*Framework* provides practical guidance on the application of these criteria.

4. Reliable measurement and estimates: the cornerstones of costs

4.1 Definitions

This article does not include the July 2006 Discussion Papers by the IASB (International Accounting Standards Board) issued in conjunction with the FASB (Financial Accounting Standards Board of the Financial Accounting Foundation). It is the opinion (of the authors) that the discussion papers would not have influenced the principles of research and deductions made from the results to the survey. AC000/*Framework's* definitions do not differ from the discussion documents to a degree that would affect the interpretations to AC109/IAS11 references.

The IASB document is titled *Preliminary Views on an improved Conceptual Framework for Financial Reporting: The Objective of Financial Reporting and Qualitative Characteristics of Decision-useful Financial Reporting Information*. The FASB document No.1260-001/ July 6, 2006 is titled *The Preliminary Views* and is issued by the Financial Accounting Standards Board for public comments as a step preceding the Development of an Exposure Draft of the Initial Parts of an Improved Conceptual Framework for Financial Reporting.

According to Everingham *et al.* (2004: 2:13 & 3:14) 'reliability', 'measurement' and 'reliability of measurement' are all defined in AC000/*Framework: Framework for the Preparation and Presentation of Financial Statements* that states:

- Reliability of measurement:

The criterion for the recognition of an item is that it possesses a cost or value and that it can be measured with reliability. When, however, a reasonable estimate cannot be made, the item

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is not recognised in the balance sheet or income statement. The disclosure in the notes is appropriate when knowledge of the item is considered to be relevant to the evaluation of the financial position, performance and changes in financial position of an enterprise, by the users of financial statements.

- Measurement:

Measurement is the process of determining the monetary amounts at which the elements of the financial statements are to be recognised. This involves the selection of a particular base of measurement that is employed to different degrees and in varying combinations in the financial statements. Historical cost, current cost, realisable (settlement) value and present value are the bases mentioned. Historical cost is the measurement base most commonly used by enterprises.

- Reliability:

To be useful, information must also be reliable and thus free from material error and bias and dependable to users. Information can be relevant but unreliable and potentially misleading but must at least lead to Faithful Representation (information must represent faithfully the transactions and events it purports to represent although subject to some risk of being less than faithful), Substance over Form (information must be accounted for and presented in accordance with their substance and economic reality and not merely their legal form), Neutrality (information contained in financial statements must be neutral and free from bias to be reliable), Prudence (preparers of financial statements have to contend with the uncertainties that surround many events and circumstances) and Completeness (information must be complete within the bounds of materiality and cost).

The question whether the accounting definitions contained in AC000/Framework actually define measurements, as needed to calculate the stage of completion of a construction contract, is left to the accountants. The definitions contained in AC000/Framework definitely do not define 'reliable measurement' in the same way that the built environment professionals' literature and guidelines do. If the literature on 'measurement' and 'accuracy' of the built environment professionals are consulted, it is clear why misconceptions exist.

The following reference by one of the authoritative textbooks prescribed to accounting students in South Africa, illustrates the general approach to estimation, measurement and recognition of costs and revenue displayed by accountants. According to Vorster *et al.* (2003: 237) the outcome of a construction contract can be estimated reliably only if it is probable that economic benefits will flow to the entity. Other aspects to be considered are the predictability

of the costs, the accuracy of cost allocations to the contract, the accuracy with which the cost to complete is established and the duration of the contract.

The American Institute of Certified Public Accountants (AICPA) states in a document called *SOP 81-1 (Statement of Position 81 - 1)* in paragraph 24 that the presumption can be made that construction companies (contractors) have the ability to produce estimates that are sufficiently dependable to justify the use of the percentage-of-completion method of accounting, and that persuasive evidence to the contrary is necessary to overcome that presumption. They further consent that the ability to produce reasonably dependable estimates is an essential element of the contracting business. The above assumptions contradict results of a survey done in the USA, *Duns Review (1976)*, as cited by Adrian, J.J. & Adrian, D.J. (1999: 3), which indicated that the second most frequent reason for business failure in construction firms is inadequate project estimating and/or cost control systems.

Epstein & Mirza (2005: 187) indicate that *AC109/IAS11* does not specifically provide instructions for estimating costs to complete. This has to be deduced from other statements such as *SAAS540.03/ISA540.03* which states that an accounting estimate means an approximation of the value of an item in the absence of a precise means of measurement, one of the examples given includes losses on construction contracts in progress.

According to *AC109.23/IAS11.23* sub-paragraph 3, when both the contract costs to complete the contract and the stage of contract completion at the balance sheet date can be measured reliably are read in the context of the definitions supplied by *AC000/Framework*, it becomes even more debatable whether 'cost to complete' forms the focus of 'reliable measurement' as contained in *AC000/Framework*.

5. Reliable estimates and reliable measurement in the determination of 'the stage of contract completion' and 'cost to complete'

According to Adrian, J.J. & Adrian, D.J. (1999: 282) both the percentage of completion and the cost to complete can present problems. Lack of good accounting records can prevent the establishment of costs to date. Even more troublesome is determining a project's cost to complete. Like determining incurred costs to date, it can have a major impact on calculating the percentage of completion.

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Many construction firms cannot give an accurate estimate of such costs which is evidenced in part by the high failure rate in the industry. Defliese *et al.* (1975: 265-266) stated that the estimate of cost to complete is the most critical element in accounting for revenue and unbilled receivables under long-term contracts and evaluating the need to provide for estimated losses. Everingham *et al.* (2004: 22:6 & 22:9) state that the provision for expected losses on one contract may not be set off against unrealised gains of another contract. The need to do estimates undermines the quality of the profit reported. In the *Practice Alert* (2000-3) issued by the AICPA concerning construction auditing and accounting, the difficulty of construction audits are highlighted by the following statements:

- Construction companies using the percentage of completion method of accounting is one of the more challenging audits.
- Auditing construction contractors or entities using contract accounting is complex.
- Such businesses rely on accurate and reliable estimates to operate their business as well as to prepare financial statements in accordance with generally accepted accounting principles.
- It is critical that the auditor gains an understanding of the contractor's significant estimates and assumptions in operating his business.

According to Grosskopf (2005: 1) more than 50 percent of new contractors fail in the first five years of operation, most of these in the first two. Despite good field knowledge they had little knowledge of the business and financial environment. A similar situation prevails in South Africa. The *CIDB Report* (2004: 16) stated that the perception of the banking sector is that the construction industry is a high-risk industry and that almost all construction companies have been faced with serious financial problems at one time or another.

6. Measurement and estimate as defined by AC109/IAS11: Is it based on arithmetic or judgement by the accountant or the built environment professional?

The definitions in *AC000/Framework* require arithmetical accurateness and judgement from accountants. Other professionals are not referred to. The definitions 'reliable measurement' and 'reliable estimates' as used in *AC109/IAS11* do not seem to imply more than arithmetical accurateness.

Build environment professionals would generally agree to the rough definitions of:

- Measure:
The physical activity of taking off quantities from architect's of engineer's drawings or the physical measuring of dimensions on site
- Estimating:
Applying current construction cost rates to measurements (rough or accurate – depending on the quality of the information) in order to estimate the future construction cost.

Palmer *et al.* (1995: 400-401) stressed that in order to be fully effective in doing the internal auditing in a construction company the auditor should be able to review the plans, observe the physical progress of the job, know what the accounting records 'should' show, reconcile the records with what he has observed and know the normal sequence of physical work.

7. What is the best base and method to determine the percentage of completion of a construction contract on any given date?

AC109/IAS11 leaves the choice of the base and method to be used in determining the stage of completion, and therefore the recognition of profit on incomplete construction contracts, to the professional opinion of the accountants involved. The percentage-of-completion method of accounting can be applied if the stage of completion can be determined which is, according to Everingham *et al.* (2004: 22:6) "frequently difficult". No restrictions are placed and no mention is made by AC109/IAS11 of prohibiting the switching from one method to another.

Although AC109/IAS11 seems clear on this point, ambiguities are found in other areas. The wording of AC109/IAS11 contributes to this in that the question arises whether everyone interprets the wording in similar fashion. The guideline is such that more than one method could be applicable. This renders the choice of 'the best method' difficult for the accountant (or the non-built environment professional).

Adrian, J.J. & Adrian, D.J. (1999: 282) cautions that, in spite of any auditing technique used the percentage-of-completion remains somewhat of an uncertain variable to the construction firm and

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auditor and is therefore probably the most challenging area of construction firm auditing.

According to *SOP 81-1* paragraph 44, some of the key aspects on the percentage-of-completion method in practice are that a number of methods are used to measure progress against completion. Included are the cost-to-cost method, variations of the cost-to-cost method, efforts-expended method, the units-of-delivery method and the units-of-work-performed method. Some of the measures are sometimes done and certified by engineers or architects. Management should review and understand the procedures used by those professionals.

Palmer *et al.* (1995: 271-272) states that the cost-to-cost method is the most prevalent method of arriving at a percentage of completion for the purpose of recognising profit and losses on contracts in progress. Many contractors use some form of labour base for determining percentage of completion, but perhaps the best method of computing percentage of completion is the physical observation method.

Palmer *et al.* (1995: 273) states on measuring the extent of progress towards completion that the results obtained should be evaluated periodically through physical observation by qualified personnel, in the same way that the results of perpetual inventory records are evaluated and adjusted by taking a physical inventory in a manufacturing enterprise.

8. The built environment professionals as experts in construction

Determining the percentage of completion on a construction contract using *AC109/IAS11 Principles* will include some of the following procedures:

- Determine whether it is a construction contract as defined;
- Determine whether a loss can be expected or not;
- Determine whether any changes in estimates occurred;
- Reliably estimate the outcome of the contract;
- Reliably measure costs to complete;
- Reliably measure cost attributable (costs to date);
- Reliably measure the stage of completion (the work executed);

- Reliably measure income (revenue);
- Clearly identify cost attributable (costs to date);
- Compare actual costs with estimates;
- Agree on:
 - the parties' enforceable rights;
 - the consideration to be exchanged; and
 - the manner and terms of settlement.
- Determine whether the contract is sufficiently completed to warrant the application of the percentage of completion method;
- Determine whether the economic benefits will flow to the entity;
- Determine whether the contract(s) is to be combined or segmented;
- Verify existence of an effective internal financial budgeting and reporting system;
- Determine whether costs were incurred on:
 - future activity on the contract; and
 - advance payments to subcontractors.
- Determine whether costs were incurred:
 - after date of securing contract; and
 - before date of final completion.
- Costs incurred before the date of securing the contract, must be possible to:
 - separately identify the items;
 - reliably measure the items; and
 - determine whether it is probable that the contract will be obtained.
- Determine whether costs that were incurred are qualifying costs, i.e.:
 - directly related to the contract;
 - attributable to the contract activity; and
 - specifically chargeable to the customer.
- Determine whether costs exclude:

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- general administration costs;
- selling costs;
- research and development costs; and
- depreciation on idle plant and equipment.

Not all of the above will appear to the built environment professionals to be 'accountant friendly' activities but there is no alternative and feasible practice for adopting the work of independent, objective, qualified and experienced built environment professionals by registered external auditors and accountants of construction contractors.

SAAS620.06/ISA620.06 states with reference to *Using the work of an Expert* that in obtaining an understanding of the entity and performing further procedures in response to assessed risks, the auditor may need to obtain, in conjunction with the entity or independently, audit evidence in the form of statements by an expert. The examples given include "the measurement of work completed and to be completed on contracts in progress".

The competence and objectivity of the expert must be determined by the auditor. According to SAAS620.08/ISA620.08, when planning to use the work of an expert, the auditor should evaluate the professional competence of the expert. This will involve considering the expert's professional certification or licensing by, or membership of, an appropriate professional body and his experience and reputation in the field in which the auditor is seeking audit evidence.

Judging from an article by Shanteau *et al.* (2002), the auditor will encounter problems in identifying what exactly constitutes an expert.

8.1 The nine traditional approaches

Although the traditional approaches have merit, the question of what constitutes an expert is not easily answered, for example:

- Experience — many professionals gain considerable experience but never become experts.
- Certification — this is more often tied to years on the job than to professional performance.
- Social acclamation — when there is some agreement about the identification of such an individual, that person is then labelled an expert by 'social acclamation' and not technical expertise.

- Consistency (within) reliability — intra-person (within) reliability is a necessary quality for expertise, i.e. an expert's judgments should be internally consistent.
- Consensus (between) reliability — agreement between individuals is a necessary condition for expertise.
- Discrimination ability — the ability to make fine distinction between similar, but not equivalent, cases is a defining skill of experts.
- Behavioural characteristic — expert auditors share many common behavioural characteristics. Some examples are self-confidence, creativity, perceptiveness, communication skills and stress tolerance.
- Knowledge tests — knowledge of relevant facts is clearly a prerequisite for experts. Yet, knowledge alone is not sufficient to establish that someone is an expert. The problem is that it takes more than knowledge of facts to acquire expertise.
- Creation of an expert — in certain contexts, it is possible for experts to be 'created' through extensive training.

The conclusion on the above is that the characteristics of 'consistency (within) reliability' and 'discrimination ability' are considered to be the trademarks of an expert. Within those two characteristics are contained various degrees of accuracy effecting the identification of a person that belongs to an expert group or a novice group.

According to the IAASB (2004: 2004-2009) the ASB (American Standards Board) requested the IAASB (International Auditing and Accounting Standards Board) to reconsider the matter of using specialists or experts in certain audits. It is possible that under certain circumstances the contracting of experts could and should become mandatory and that non-contracting of experts by management could and should be considered scope limitation by the auditors.

The question of 'whether the auditor should obtain a description of the assumptions, methods, test data and findings of the 'expert' was also asked. According to Cheney (2005: 15) the indication of what to expect, regarding the above, might be contained in the statement by Landes, namely: "that what they want to do is take away what they think may be a practice problem in some situations – the over-reliance on the use of specialists' work without the auditor doing sufficient due diligence and applying appropriate professional scepticism."

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In the *Practice Alert* by the PITF (2000-3) of the AICPA, it was emphasised that it is challenging auditing entities that use contract accounting. They stated that the main element of the contractor's financial statements is based on estimates of cost. Prior to auditing contractors, their auditors should ensure that they have the appropriate expertise to conduct such audits. It is crucial that the auditor gains an understanding of the contractor's significant estimates and assumptions in operating its business.

Palmer *et al.* (1995: 457) stated that it is difficult and challenging for an auditor and/or accountant seeing that not many public accountants or internal accountants for that matter have enough knowledge or experience of the operational end of construction, to evaluate some of the important relationships between job progress as it exists in the field and what the job records show or should show.

Seeing that construction accounting and reporting is an arduous task, it was decided to focus on possible ambiguities in construction contract reporting guidelines, namely: *AC109/IAS11: Construction contracts*.

9. Methodology

A survey of the relevant laws, guidelines and practices concerning the disclosure and recognition of revenue and expenses on construction contracts in the financial statements of contractors, has been undertaken to attempt to define the content of the guidelines contained in *AC109/IAS11*.

A questionnaire was sent to the registered auditors and accountants of participating large general contractors registered in 2005 with the Gauteng Master Builders' Association. Small contractors are generally excluded from the definition of *AC109/IAS11*'s construction contractors because of their size, duration of contracts, internal control and internal accounting knowledge and expertise. In determining the accountant's interpretation of certain paragraphs in *AC109/IAS11*, the registered external auditors and accountants proved to be the most knowledgeable group to consult. As far as could be established, registered auditors and accountants as a group of professionals, are the only accounting orientated professionals qualified to guarantee knowledge, correctness and consistency in applying the requirements of *AC109/IAS11*. Their consistent application of guidelines and knowledge of accounting principles in general, proved to be valuable.

The questionnaire was sent out after obtaining the contractor's permission to contact their auditors as the questionnaire was expected to address some sensitive issues with the contractors. The contractors selected included the listed companies and/or their group companies and larger unlisted companies. All the construction companies listed as the top construction companies in 2005, according to Brummer (2006), took part in the survey.

The construction companies' registered external auditors and accountants included the 'big four' internationally registered audit and accounting firms (referred to as 'international firms' in the results section) as well as the other larger registered auditing and accounting firms in South Africa (referred to as 'other firms' in the results section). All but one of the registered external auditors and accounting firms of the construction companies listed as the top companies in 2005, took active part in the survey.

Built Environment professionals include construction managers, construction project managers, quantity surveyors, town and regional planners, urban designers, architects, landscape architects, interior architects, property valuers, civil engineers, structural engineers, electrical engineers, mechanical engineers, electronic engineers, geotechnical engineers and land surveyors.

In the questionnaire the questions were structured around the basic principles raised by issues such as:

- Does *AC109/IAS11: Construction Contracts* provide clear and feasible guidelines for the determination of the stage of completion on a construction contract for disclosure in the financial statements of contractors and are 'reliable measurement' and 'reliable estimates', as contained in *AC109/IAS11*, clearly identified as the most fundamental concepts and are they clearly defined?
- Do the terms 'reliable measurement' and 'reliable estimates' refer to the mathematical correctness of calculations, or do they refer to the use of special skills and experience of specific professionals and can each of the alternative methods of calculating the stage of completion provided for in *AC109/IAS11*, only be used in a specific set of circumstances, or in any given set of circumstances?
- Do the prescriptions and guidelines in *SAAS620/ISA620: Using of the work of an Expert*, provide an adequate alternative for gaining audit evidence in verifying calculations and estimates of work in progress and the stage of completion of a construction contract?

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The focus is on determining the reasons for misunderstanding of *AC109/IAS11* by the build environment professionals, other than due to lack of knowledge of accounting and reporting.

10. Discussion of the results

10.1 The questionnaire

The questionnaire contained sixty-six questions. It included sub-questions and amounted to 142 questions with 365 possible answers. 60 Questions and 133 answers were directly related to *AC109/IAS11* principles and procedures. The questions were divided into categories that required all of the following qualities from the respondents; knowledge (of *AC109/IAS11* and other Statements of GAAP and GAAS, such as *AC000/Framework*), experience (of construction auditing, accounting and reporting) and an opinion (on the application of these accounting, auditing and reporting procedures and requirements).

The respondents showed a 100% agreement on only 6 of the questions asked. The 6 questions ranged from whether they had any formal training on built environment skills to whether they recognise and employ built environment professionals to assist them on auditing procedures. The question "do you compare cost to completion with estimated costs on all contracts where profit is calculated based on percentage of completion?" can be considered the only question directly related to *AC109/IAS11* where all the respondents answered yes unanimously. The question is an example of the ease with which confusion is created where accountants work with phrases that are also common to members of other professions. 'Cost to completion' or 'cost to complete' is 'estimated costs'. It is difficult to envisage why one would want to compare an amount with itself. It sounds like the correct procedure to follow. *AC109/IAS11* is not clear on the topic.

Subsequently the one question on *AC109/IAS11* that was asked with the objective of determining whether accountants experience certain phrases in construction accounting to be ambiguous, (whether they acknowledge it or not) is in fact the question that the respondents agreed on unanimously.

10.2 The respondents

The respondents were all qualified chartered auditors and accountants in private practice with construction contractors as clients. All but one of the 'big four' international audit firms responded. The 'missing link' forwarded a written declination to respond, stating that he had been transferred to another department before he could discuss the remaining questions with his colleagues.

A different choice of or number of respondents would not have resulted in a different conclusion. The fact that in only 0.75% of the AC109/IAS11 related answers respondents were unanimous in their interpretation, verified the fact that contractors, and their accountants, would have difficulty with the interpretations of important aspects of AC109/IAS11.

10.3 The most important concepts contained in AC109/IAS11

The respondents are in agreement that the most important concepts contained in AC109/IAS11 are contract revenue, contract costs and the recognition of revenue and expense.

Recognition of revenue and expense is considered by the respondents to be the most important concept contained in AC109/IAS11. To a large extent that is correct. However, included in the recognition of revenue and expense are the principles of 'reliable measurement' and 'reliable estimates'. Together with 'clearly identify' they form the cornerstones of the actions to be taken when recognition is being considered. The concept 'to be able to clearly identify costs' was not included in the questionnaire because it is considered to form part of the skills of an auditor and accountant. The other two concepts were tested as they might be considered to be built environment professionals' skills. To a certain degree it is a chicken and egg situation, but everyone should agree that if you can measure, identify and estimate, then you can recognise, according to AC109/IAS11, and not the other way around.

Table 1: The six most important concepts as identified by respondents

No.	Concept	Considered 'most important' by respondents (percentage)
1	Recognition of revenue and expenses	84.6
2	Contract revenue	76.9

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3	Contract costs	69.2
4	To measure reliably	61.5
5	To estimate reliably	53.8
6	Changes in estimates	53.8

One of the following possible reasons may apply to the outcome, namely:

- The respondents do not realise that measure and estimate form part of recognition and/or cannot really see how measurement and estimation can be of more importance than recognition.
- The respondents are not of the opinion that recognition means to measure and to estimate and do not share the opinion that you have to be able to measure and estimate before you can recognise.
- The respondents are of the opinion that 'to estimate' and 'changes in estimates' are similar and are of the opinion that measurement is 'to establish the amount of'.
- The respondents do not recognise that to determine the construction cost of a design by one professional, will require the expertise of another professional and do not feel that they are required to verify something that they are or might not be qualified to do. They do not feel confident discussing construction auditing and accounting without consulting a textbook or AC109/IAS11.
- The respondents encounter difficulty with the interpretation of some of AC109/IAS11's wording and might be aware of it and might or might not have a solution, but decided not to share that knowledge in answering the questionnaire.

10.4 Reliable measurement and reliable estimates

The possible reasons for the non-recognition of two of the more important and prominent aspects contained in AC109/IAS11, namely reliable measurement and reliable estimates, might be that:

- it is not defined in the document and is therefore not described and placed in context,

- it is not clearly linked to a specific action and is therefore not evident by whom exactly it 'can' or 'should' be performed and it is therefore not clear what skills are required.

It is logical that users of *AC109/IAS11* assume that reliable measurement and reliable estimates are performed by an accounting person. When asked to define 'reliable measurement' and 'reliable estimates' some of the answers were: "Defined in framework" and "For audit purpose I need to obtain an indication of a fair measurement of cost and revenue. This is done by means of what is accounted for in the accounting records compared with third party inputs". These answers are contradictory.

More so is the answer to the question: "the wording 'measure reliably' (and other synonyms) are used throughout the guideline but is never defined. Do you agree with this statement?" The 'international' auditors and accountants were quite sure and gave a 100% 'yes' answer. The 'other' auditors and accountants were divided on the issue and 37.5% answered 'yes', 37.5% answered that they were 'unsure' and 25% answered 'no'. (A definition of reliable measurement is contained in *AC000/Framework*.)

Table 2: Response to the question whether concepts are defined adequately

No.	Topic	Yes %	Unsure %	No %	'International' auditors as part of "yes" answers	'Other' auditors as part of "yes" answers
1	Measuring reliably	61.5	23.1	15.4	100%	37.5%
2	Estimating reliably	46.2	23.1	30.8	100%	12.5%
3	Attributable costs	53.8	30.8	15.4	60%	50%
4	Overheads	76.9	7.7	15.4	80%	75%
5	Non-attributable costs	15.4	46.2	38.5	0%	25%
6	Cost allocation in general	53.8	30.8	15.4	60%	50%
7	Early stage of a contract	15.4	30.8	5.8	0%	25%

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The uncertainty amongst the 'other' auditors, as illustrated by the table below in the answer to the question: Do 'estimate reliably' and 'measure reliably' require the same skills?

Table 3: Response to the question whether 'estimate reliably' and 'measure reliably' require the same skills?

Topic	Yes	No	<i>'International' auditors as part of the "yes" answer</i>	<i>'Other' auditors as part of the "yes" answer</i>
Measure reliably	84.6%	15.4%	100%	75%

10.5 Auditing the work of built environment professionals

This section discussed the measurement and arithmetic nature of various calculations required to produce the estimates of:

- cost to complete
- cost to date
- stage of completion
- costs attributable and
- revenue due

Respondents answered several questions that were intended to determine the extent of their measurement and estimating skills. They did not seem to have any doubts that they do not possess the skills needed to perform the required task as would a built environment professional, but it did not seem to matter. Respondents were of the opinion that the verification of the measurement, normally done by the built environment professionals, can be performed by accounting orientated personnel, but they were of the opinion that only senior accounting personnel would be able to perform this task.

The following question was then asked: Do you regard the calculations done in verifying the estimates made by the contractor as arithmetical in nature which can be checked by a clerk with the necessary experience?

Table 4: Response to the question whether estimates are arithmetical in nature

Topic	Yes	No	<i>'International' auditors as part of the "yes" answer</i>	<i>'Other' auditors as part of the "yes" answer</i>
Estimates by contractor is arithmetical in nature	84.6%	15.4%	80%	87.5%

The respondents are of the opinion that they possess the skills and are able to perform the necessary verification of estimates done by contractors.

10.6 Determining stage of completion

The respondents are unsure whether this very important calculation can be done with accuracy and indicated as much.

Table 5: Response to question on accuracy of stage of completion calculations

Topic	Yes	Unsure	No	<i>'International' auditors as part of the "yes" answer</i>	<i>'Other auditors as part of the "yes" answer</i>
Stage of completion calculated accurately	61.5%	23.1%	15.4%	60%	62.5%

In determining which of the methods for calculating the stage of completion are the most popular in practice, indication was that the preferred method is 'costs to date' compared with 'total expected costs'.

Whether the method for calculation was a free choice affair or whether any specific prescriptions were applicable according to AC109/IAS11, proved to be inconclusive. AC109/IAS11, however, states that: "The enterprise uses the method that measures reliably the work performed." The built environment professionals would expect that this will result in the "surveys of work performed" method.

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Table 6: Response to the question on acceptable alternatives of methods of calculation

Topic	Yes	Unsure	No	'International' auditors as part of the "no" answer	'Other' auditors as part of the "yes" answer
Acceptable alternatives for any set of circumstances	61.5%	7.7%	30.8%	60%	75%

In determining how final the choice of a calculation method is for future years, respondents indicated that it was a permanent situation, although no evidence could be found in AC109/IAS11 to substantiate that opinion.

Questions about the extent of 'accidental' manipulation that could occur in determining the stage of completion on construction contracts, again led to confusion among the respondents.

AC109/IAS11 indicates that certain costs must not be allocated to contract costs or else allocated in a consistent manner. Rework, for instance, would be excluded from contract costs in determining the stage of completion. Direct costs do not seem to pose a problem but 'indirect costs' do.

When asked whether 'attributable costs' and 'overhead costs' can be regarded as synonyms the respondents did not think so. According to AC109/IAS11, however, 'attributable costs' include 'overhead costs'.

When respondents were asked whether the *Bill of Quantities* and 'direct costs' were to be regarded as synonyms they responded overwhelmingly with a 'no' answer.

Respondents' view on whether they are of the opinion that AC109/IAS11 could be manipulated in any way, resulted in candid answers. The fact that both groups of respondents were of the opinion that it can be done, is significant.

Table 7: Response to the question whether manipulations are possible

Topic	Yes	Unsure	No	<i>'International' auditors as part of the "yes" answer</i>	<i>'Other' auditors as part of the "unsure" answer</i>
Manipulation possible	46.2%	53.8%	0%	100%	87.5%

Although auditors indicated that they do their best to verify the accounting and other evidence according to GAAS, they did not agree on the interpretation of certain vague phrases contained in *ACT109/IAS11*.

The construction progress on a contract that would lead to their being comfortable that the client can start recognising profits and/or losses on the contracts is one such example. It seems that they might need the built environment professional in more respects than one.

10.7 Using the work of an expert

This question was asked to determine whether experience gained in construction contracts enable auditors to conduct an audit of construction contracts on their own or whether they will need outside assistance. The objective was to establish their need for built environment skills versus accounting skills. They did not indicate any need for assistance.

When questioned on their knowledge of built environment professionals and their contact with them in the conduct of their audits, it appeared that they do have contact with certain of the built environment professionals, namely those involved in calculations.

The one profession that does not seem to be consulted by auditors of construction contracts, is the construction manager or project manager. The construction managers will in most cases also be the project manager and could be very helpful to auditors in the auditing of construction contracts. The auditors did not appear to be knowledgeable on current professions and evolving professions in the built industry. Built environment professionals being employed or otherwise engaged in conducting audits, is not currently general practice.

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The above practice of non-employment and non-engagement continues even though an important role player such as the AICPA in their *PITF Report* (PITF, 2000-3:2) stated that the auditor should visit construction contract sites and meet with project managers to identify and understand the extent of significant assumptions and magnitude of uncertainties on the contract. The *PITF* consider this procedure as fundamental to performing an effective audit of an entity, using contract accounting. Not performing this function, according to the *PITF*, will result in an audit that does not comply with GAAS.

The respondents answered "no" to all the following questions in which they were asked:

- whether they employ a specialist to visit the construction sites of the client and conduct interviews with the construction project managers of these sites
- whether they employ built environment professionals to assist them in identifying and understanding the significant assumptions and uncertainties on the contract
- whether they employ professional assistance in studying significant and unique contractual agreements
- whether they have any formal training in Construction Contract Law
- whether they possess any expertise expected from built environment professionals.

The respondents indicated that they do regard built environment professionals as a source of audit evidence and that they do indeed use built environment professional to help in measuring activities.

Though they declared that they do make "use of the work of an expert" in construction auditing, it appears that this refers to existing payment certificates issued by architects and quantity surveyors. They further indicated that they do not employ any of the built environment professionals on construction audits but do employ attorneys on those audits.

The respondents are of the opinion that they can obtain all audit evidence needed without the built environment professionals' assistance. The 'international' auditors expressed the opinion that they cannot conduct the audit without the assistance from the built environment professionals, which was directly in contrast with the opinion of the 'other' auditors.

Table 8: Response to the question on audits of construction contracts without assistance from the built environment professionals

Topic	Yes	No	'International' auditors as part of the "no" answer	'Other' auditors as part of the "yes" answer
The possibility of an audit without built environment professionals' assistance	53.8%	46.2%	80%	75%

The fact whether the built environment professionals are independent from the contractor, is not important to the respondents. Respondents do not employ built environment professionals on a permanent basis.

The respondents indicated that they do encounter all of the built environment professionals during routine construction contract audits and although answers were vague it is assumed that these professionals are mostly employees of the construction companies.

11. Conclusion

In order to apply the percentage-of-completion method of recognising revenue and costs to construction contracts, the outcome of the contract must be estimated reliably.

11.1 The built environment perspective

To be able to estimate reliably it must be possible to measure reliably. Built environment professionals would deem it logical that AC109/IAS11 starts with measuring, then estimating and ending in cost recognition.

11.2 An AC109/IAS11 perspective

AC109/IAS11 refers accountants to AC000/Framework for the explanations to key aspects such as measurement and estimating. It bears no resemblance to the interpretations of similar words and phrases in the built environment.

It is uncertain whether the wording of AC109/IAS11 was meant to include built environment interpretations. No literature exists on this topic in the South-African context.

11.3 The respondents' perspective

On the question whether AC109/IAS11 does provide clear and feasible guidelines for the determination of the stage of completion on a construction contract for disclosure in the financial statements of contractors, the respondents were:

- adamant that no unclear wording and statements existed in AC109/IAS11, but
- unanimous in only 0.75% of the answers to AC109/IAS11 related questions contained in the survey questionnaire.

11.4 Comments

At present the above appears to be irreconcilable differences. Unless AC109/IAS11 recognises this fact and addresses it properly, the uncertainty and ambiguity will persist. The respondents' answers merely reflect the practical situation, although they seem unsure about the nature and cause of these uncertainties.

Informal discussions with respondents indicated that they do encounter problems in the auditing of construction companies, but have ways and means to overcome these problems.

Ambiguities exist as a result of choice of words, principles and actions originating from AC109/IAS11. It might be more of a problem for the contractor and his internal accountant than they realise. In AC109/IAS11 they are confronted with seemingly familiar phrases which actually have different meanings and expect different outcomes. AC109/IAS11 refers to the accountants' interpretation and definition of words common to both professional groups.

The contractor and his internal accountant should be made aware of this possible ambiguity to ensure that they comply with AC109/IAS11 and *Generally Accepted Accounting Practice*. If professionals with similar training and background differ, the possibility that contractors and their accountants would experience much more difficulty with interpreting AC109/IAS11 seems likely.

The mere fact that certain respondents differed or were unsure on certain AC109/IAS11 issues, verifies the assumption that some confusion does indeed exist.

It appears from the survey that problems in construction accounting and reporting could arise due to the fact that certain guidelines and terms in AC109/IAS11 are not consistently interpreted by all involved.

13. Recommendations

The results of the research and questionnaires substantiate recommendations in three problem areas, namely:

- Clear definitions and explanations to key concepts in *AC109/IAS1* that will result in consistent interpretation thereof.
- Built environment perspectives incorporated in *AC109/IAS11* to assist in the understanding of construction contract accounting.
- Guidance on the possible role of built environment professionals in determining aspects, such as cost to date and cost to complete, in reporting profit or expected losses on construction contracts based on the stage / (percentage) of contract completion on the date of the report.

ACCOUNTING AND AUDITING GUIDELINES REFERRED TO IN TEXT

Standards and statements by the South African Institute of Chartered Accountants (SAICA), International Accounting Standards Board (IASB) and International Auditing and Assurance Standards Board (IAASB):

Accounting (AC) / International Accounting Standards (IAS)

AC000/Framework: Framework for the Preparation and Presentation of Financial Statements

AC109/IAS11: Construction Contracts.

South African Auditing Standards (SAAS) / International Standards on Auditing (ISA)

SAAS540/ISA540: Auditing of Accounting Estimates

SAAS620/ISA620: Using the Work of an Expert

Statements and publications by The American Institute of Certified Public Accountant's (AICPA) and Financial Accounting Standards Board (FASB):

Statement of Position No. 81-1. 1981. Accounting for performance of construction-type and certain production-type contracts.

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