Comparative Analysis of Defects After Completion Clauses in PWD 203A and PAM 2018

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ABSTRACT

This study presents a comparative analysis of the defects after completion clauses in PWD 203A and PAM 2018 standard form contracts, commonly utilized in the Malaysian construction sector. The research aims to examine the implications of contractual variations on defect management and project outcomes, addressing an identified gap in current understanding. This is review paper and conducted a systematic literature review and thematic analysis of relevant clauses to examine the key differences and similarities between these contract forms in their approach to post-completion defects. The research objectives include identifying and analyzing the stipulated clauses, highlighting key differences and similarities, and evaluating potential implications for project stakeholders. Findings revealed significant variations in defect definitions, liability periods, and rectification procedures between PWD 203A and PAM 2018. These differences have substantial implications for risk allocation, project management strategies, and dispute resolution processes. The study enhances the existing information by elucidating the legislative framework regulating post-completion defects in Malaysia and provides significant insights for industry professionals and policymakers. The research underscores the importance of careful contract selection and tailored defect management strategies to enhance project outcomes and stakeholder satisfaction in the Malaysian construction sector.

Keywords: Comparative Analysis, Defect, Completion, Contract Basis of Agreement

INTRODUCTION

The construction industry has been recognized as a crucial contributor to Malaysia's economic landscape, particularly in its significant impact on the country's gross domestic product (GDP). As Ibrahim et al. (2021) have noted, this sector not only directly influences economic growth but also facilitates productivity enhancements across various industries through the development of essential buildings and infrastructure. However, the industry faces ongoing challenges, particularly in the realm of defect management. Gashi (2018) has highlighted that the effective handling of construction defects plays a pivotal role in project success, with these issues potentially accounting for up to 15% of total project costs. Timely resolution of construction defects is crucial for ensuring quality, safety, and functionality of completed buildings (Forcada et al., 2016). In Malaysia, several standard contract forms are typically used to define the responsibilities and liabilities of contractors and clients in addressing these defects. These include form authorized by various professional bodies and government agencies: the PAM form endorsed by Pertubuhan Arkitek Malaysia, the JKR or PWD form sanctioned by the National Department of Public Works, standard documents developed by the Construction Industry Development Board (CIDB) for building projects, and FIDIC forms established by the International Federation of Consultants. These pre-formulated contracts, such as PWD 203A and PAM 2018, serve as foundational frameworks for construction projects and are pre-written contracts that create legally enforceable agreements between contractors and employers. Masrom & Kamal (2021) have noted that while PWD forms are predominantly utilized in public-sector initiatives, PAM contracts are more frequently employed in private sector projects. The adherence to these standardized agreements has been observed to promote successful project delivery and minimize disputes by establishing clear guidelines for all parties involved.

The use of standard forms in construction contracts provides a foundation for project execution and defect

resolution. However, variations between these forms can lead to uncertainties and disputes, potentially hindering smooth project operations (Masrom & Kamal, 2021). Nevertheless, it is crucial to recognize that while these standard forms serve as foundational documents, the specific construction contract between the contractor and the employer must be interpreted and enforced in accordance with established legal principles to ensure equitable and efficient project execution.

The construction sector often favors traditional contract types due to administrative, time, and cost performance considerations. However, quality, cost, and time consistently emerge as the top three priorities in construction management literature, reflecting their status as the ultimate goals for most clients (Hussain et al., 2024). As a pivotal component of project management, procurement plays a critical role in achieving these objectives by ensuring high performance in terms of cost, quality, and time (Liu et al., 2021; Pal et al., 2017). Effective procurement planning and management are essential throughout the project life cycle to positively influence outcomes (Al Fath et al., 2024). Standard contract forms like PWD 203A 2010 and PAM 2018 include provisions addressing defects, such as contractual obligations, time constraints, project scope, and defect rectification methods, to mitigate potential quality issues. Despite the widespread adoption of standardized contract forms in the Malaysian construction industry, a notable gap persists in the specification of comprehensive requirements for rectifying defects. This omission has the potential to engender disputes, particularly in scenarios where the completed work fails to meet the proprietors' expectations, as observed by Cakmak & Cakmak (2014). This underscores the need for extensive construction knowledge among industry participants to ensure timely completion of restoration work. Understanding the defects after completion clauses in these contract forms is crucial for several reasons: it provides clarity on obligations and liabilities, helps avoid misunderstandings and disputes; encourages proactive measures to prevent defects and ensure work quality; and facilitates effective management of defects when they do occur. By comprehending and following the prescribed procedures for reporting, assessing, and rectifying defects, parties can minimize their impact on the project and avoid escalating disputes, ultimately contributing to smoother project execution and better outcomes.

To address the identified research gap, this paper presents a comprehensive comparative analysis of the defects after completion clauses in PWD 203A and PAM 2018 standard form contracts. The study begins by establishing the context of defects in the construction and providing an overview of defect liability periods. Subsequently, a detailed examination of the relevant clauses in both contract forms is conducted, highlighting key similarities and differences in their approach to post-completion defects. Through this analysis, the paper identifies and evaluates the potential implications of these contractual variations for contractors, clients, and other project stakeholders. The research objectives are as follows:

1. To identify and analyse the clauses pertaining to post-completion defects as stipulated in the PWD 203A and PAM 2018 standard forms of contract.
2. To identify key differences and similarities between the two contract forms in their approach to post-completion defects.
3. To evaluate the potential implications of these differences for contractors and clients and project stakeholders

By achieving these objectives, this paper endeavors to enhance the understanding of the legal framework governing defects after project completion within the Malaysian context. The findings are expected to yield valuable insights for various stakeholders in the construction sector, potentially contributing to more effective defect management practices and reduced contractual disputes.

LITERATURE REVIEW

Comparative Analysis

The term "Comparative Analysis" combines the words "Comparative" and "Analysis." According to the Collins Dictionary, "comparative" is used to compare two or more things of the same kind. Comparative analysis involves the systematic juxtaposition of two or more entities of a similar nature. This process combines the act of comparison with detailed examination. In the realm of opinion mining, comparative

analysis emerges as a crucial subset of sentiment analysis, concentrating on extracting information presented in comparative forms, thereby offering significant benchmarks for evaluation (Varathan et al., 2017).The application of comparative analysis extends to identifying alterations made by authors in published works and categorizing them. By pinpointing meaningful modifications in subsequent publications, researchers can draw inferences about authors' theoretical positioning and self-representation within new contexts (Fedotova & Chigisheva, 2015).

Comparative relations represent unique associations within the field of relation mining. This area encompasses the extraction of various entity relationships, including temporal, spatial, and character-based connections within events, as well as affiliations between individuals, locations, and organizations (Amarouche et al., 2015; Kim et al., 2016). While sentiment analysis traditionally focused on discerning a reviewer's attitude towards a singular topic or object through textual analysis (Wang & Wang, 2014), comparative opinion mining has expanded this scope to encompass multiple objects (Wang et al., 2017). These comparative opinions contribute valuable insights to competitiveness analysis (Amarouche et al., 2015; Kim et al., 2016; Wang & Wang, 2014).

Aguilar & Assis (2019), observes that the increasing prevalence of comparative studies in Humanities and Social Sciences, although often related to education, does not always align directly with Comparative Education as a formal knowledge domain. Comparative Education remains an evolving epistemological field, with ongoing debates shaping its understanding. While comparative educational research manifests in various forms, from explicit comparisons to theoretical analyses, not all fall under the umbrella of Comparative Education. Nevertheless, a wealth of comparative research continues to be produced, published, and disseminated through conferences and media.

Defect

In the context of construction, the concept of a "defect" has been subject to various interpretations. The Cambridge Dictionary has offered a more generalized definition, describing a defect as an imperfection or problem in an object or individual that compromises its intended functionality. It is also characterized as any deficiency or imperfection present in an individual or entity. The term is occasionally defined or elucidated using synonyms such as "problem," "imperfection," "deficiency," and "shortcoming." Any deficiencies in the design, planning, supervision, inspection, construction, or oversight of a new home or building that lead to a construction flaw that is not executed in a reasonably workmanlike manner or that hinders the structure from functioning as the owner reasonably intends (Alabi et al., 2024).

Moreover, the term failure is frequently synonymous with the phrase defect. Defects are characterized by the inability to meet the specifications outlined in a contract, which may not be evident in terms of reasonable workmanship or functionality as expected by either the manufacturer or the buyer. This noncompliance ultimately leads to damage to the structure (Ojo, A.M. and Ijatuyi, 2014; Wali & Ali, 2019). Expanding on this concept, researchers have posited that building defects arise from the incongruence between construction components and prescribed standards. Ojo (2016) suggested that faults in construction projects often stem from contractors' deviations from contractual terms and conditions. Alabi et al. (2024) have noted that defects may manifest at any stage of the construction process and can affect various aspects of a building. Within this framework, contractors are typically held responsible for executing all work in accordance with specified requirements. Consequently, any work that fails to meet the stipulated quality standards or user expectations is generally classified as defective.

Legal precedents have played a crucial role in shaping the understanding of construction defects. The case of Tate v Latham [1987] 1 QB 502 has provided significant insights into the interpretation of defects. In this instance, the removal of a protective fence from hazardous equipment was deemed a defect, characterized as the absence of an essential component required for safe operation. The court's decision, informed by Section 1(1) of the Employers' Liability Act 1880, attributed blame based on the machinery's condition. This ruling has contributed to the legal principle that faults may vary in severity, ranging from minor to substantial.

Another noteworthy case that has further elucidated the concept of construction defects is Ruxley Electronics and Construction Ltd v Forsyth [1995]. This dispute centered on a swimming pool constructed for Mr. Forsyth,

where the depth fell short of the specified dimensions. While the pool was designed to reach a maximum depth of 7 feet 6 inches, it was built to only 6 feet 9 inches. Notably, despite the materials and workmanship meeting quality standards outlined in the specifications and the pool being deemed safe for use, it failed to comply with statutory regulations. This case has highlighted the complexities in defining and addressing construction defects, particularly when the deviation from specifications does not compromise safety but fails to meet contractual or regulatory requirements. The builder's violation of contract with the pool owner was acknowledged. Consequently, in this context, the defect phrase is crucial to indicate that any deviation from the approved specification is deemed defective.

A comprehensive analysis of the legal case concerning the interpretation and application of the term defect reveals a broad spectrum of perspectives. In the case of Yarmouth v France [1887] 19 QBD 647, the horse, utilised for cart pulling, was responsible for an accident involving the plaintiff while being pulled by the carthorse. The court deemed it a flaw, and the individual may be held accountable for the inadequacy. Consequently, a defect also encompasses any aspect that renders the plant or apparatus unsuitable for its intended use, without necessarily being classified as defective in a conventional sense.

Completion

Construction completion is the systematic process that ensures all functional requirements are met throughout a project's lifecycle, integrating completion aspects into all phases to achieve operational readiness and quality assurance (Beste, 2021). The requirements for the completion of various categories of contracts are distinct. According to Mills et al. (2011), the execution of a contract is deemed incomplete until all duties have been satisfied, unless explicitly stated otherwise in the contract. If there are outstanding tasks, repairs, or documentation to be provided, the contract remains incomplete.

Within the construction industry, the notion of completion has been subject to multiple interpretations. In the Malaysian context, the standard form of contract has adopted a comprehensive and specific approach to defining completion, including phrases such as "practical completion," "sectional completion," and "partial occupation." Each category will influence accountability for defects and the methods for their resolution.

In Clause 39.1 of PWD203A stipulates that practical completion occurs when the contractor has finalised the entire works or prior to the completion date specified in the Appendix or any extra period permitted under section 43. Clause 39.5 in PWD203A delineates five (5) criteria that the contractor must fulfil upon practical completion. These requirements serve as indicators that the work has been executed in accordance with the contractual stipulations, hence permitting the government to utilise the works as it sees fit. Conversely, once all commissioning tests have been successfully completed, the premises must be rendered habitable, and the requisite services must be finalised.

Furthermore, the concept of sectional completion has been addressed in Clause 41.1 of PWD203A. This provision has outlined the procedures to be followed when the employer desires the works to be finalized and handed over in phases. The clause explicitly indicates that, in the absence of such provisions, the employer is unable to occupy any portion of the works, thus breaching their commitment to grant the contractor possession and permit maintenance until completion.

Furthermore, clause 42 outlines the definition of partial occupation, which is delivered by the employer to the contractor during every phase of the operation. Under certain circumstances, the employer has been granted the right to assume control of specific sections or components of the project. However, this is contingent upon obtaining the contractor's consent prior to occupancy. In such cases, the occupied portion is presumed to have reached practical completion. Notably, rather than issuing a Certificate of Practical Completion, each section occupied by the employer receives a Certificate of Partial Occupation for the Works.

Contract Basis of Agreement

PWD203A is a document that is produced by the Malaysia Public Work Department (JKR) and is frequently utilised in the construction sector of Malaysia. It is utilised in public or government projects for civil

engineering and building contracts. The PWD 203 contract form has been widely adopted as a means of establishing a contractual relationship between employers and contractors in Malaysia. However, Soewendo (2011) has noted that not all public-sector projects utilize this form, particularly those financed by international institutions such as the World Bank or the Asian Development Bank, which often prefer FIDIC forms. Soewendo (2011) has further elucidated that the PWD 203 building contract forms trace their origins to the 1931 RIBA standard form, a collaborative effort of the Royal Institute of British Architects, NFBTE, and IOB. This conventional standard form has undergone several iterations and improvements since 1983, with the most recent revision occurring in 2010.

In parallel, the PAM 2018 standard contract has gained significant recognition within the Malaysian construction industry. It was established by the Malaysian Institute of Architects (PAM), which is a professional organisations in Malaysia. Within the realm of private construction projects, this particular kind of contract is normally utilised the majority of the time. There have been four different iterations of the PAM standard form since the initial version was published in 1969. Soewendo (2011) has identified this as the fourth edition of the PAM standard form of building contract. Since its introduction, the PAM form of contract has established itself as a benchmark for the Malaysian Standard Form of Construction Contract, reflecting its widespread acceptance and application in the sector. The PAM 1969 form was superseded by the 1998 version of the PAM contract, which was later replaced by the fully redesigned PAM 2006 Contract in 2007, following a 10-year span. The most recent PAM 2018 Contract was examined based on the PAM 2006 Contract (Soewendo, 2011).

TYPES OF DEFECTS

Despite the rapid advancements in this era of globalization, defects frequently arise and continue to be a significant issue in the construction industry. Bagdiya & Wadalkar (2015) have emphasized the defect issues that have the potential to significantly erode a structure's value necessitate timely prevention and mitigation strategies, as their successful preemption not only safeguards the project's worth but also plays a pivotal role in ensuring adherence to the predetermined schedule**.** Initially, defects are not noticeable; however, they may arise throughout the construction phase or subsequent to project completion. There are two primary categories of defects in construction: patent and latent (Alabi et al., 2024; Mohd Isa, 2014; Oluwole et al., 2012). Patent defects are those that can be readily identified during inspection (Ameyaw et al., 2024). In contrast, latent defects remain hidden at the time of inspection, only becoming apparent when later detected. The origin of these defects can be attributed to either the structure itself or the fixtures and fittings within it (Asante et al., 2017). This distinction is crucial for understanding the nature and potential impact of construction flaws. In legal contexts, the differentiation between visible and latent flaws often relies on judicial experience (Ojo, 2016).

Patent defects are characteristically observable and amenable to evaluation, examination, and rectification if necessary. The legal precedent established in Yandle and Sons v Sutton, Young, and Sutton [1922] defines a patent defect as one that is clearly visible and detectable. Furthermore, the Sanderson v National Coal Board [1961] ruling interpreted 'patent' objectively, emphasizing 'observable' rather than merely 'perceptible'. Ojo (2016) further elucidates that patent defects in structures, such as roof leaks or foundation cracks, can be identified through inspection or testing and require prompt attention. The Yandle and Sons v. Sutton, Young, and Sutton [1922] case established that patent defects are considered evident during inspection, regardless of their actual presence. This principle was applied in Rotherham Metropolitan Borough Council v Frank Haslam Milan & Co Ltd, and Another ([1996] 78 BLR 1), where were held accountable for a concrete slab flaw due to their responsibility for materials specified in the bill of quantities. Patent defects are typically identified during or prior to the issuance of the certificate of practical completion, or within the defect liability period (Ojo, A.M. and Ijatuyi, 2014; Wali & Ali, 2019). The Baxall Securities Ltd v. Sheard Walshaw Partnership (a firm) [2001] case further clarified that a defect is considered patent if it would be discoverable by a competent surveyor exercising due diligence, even if no surveyor is actually engaged.

In contrast to patent defects, latent flaws in construction remain hidden, eluding detection through conventional testing and inspection methods. These concealed issues may persist unnoticed for extended periods, potentially surfacing years after project completion (Ojo, 2016; Wali & Ali, 2019). A legal definition for latent defects has

been established through the Baxall Securities Ltd v. Sheard Walshaw Partnership (a firm) [2001] case. This ruling characterizes latent defects as hidden flaws in workmanship or design, distinct from the potential hazards they may present. Zalejska Jonsson & Hungria Gunnelin (2019) state that latent defects often emerge after years of building operation, during which time structures may be exposed to various environmental conditions. Consequently, these issues can develop into serious problems, potentially affecting occupants' health and raising safety concerns. The case of Victoria University of Manchester v Hugh Wilson & Lewis Wormsley and Pochin (Contractors) Ltd [1984] provides an illustrative example of structural issues manifesting years after completion, exemplifying the nature of latent defects (Abdullah, 2009). Researchers in the field have observed that latent defects often entail more prolonged periods of obligation, both contractually and statutorily (Ariffin & Mazlan, 2011).

Therefore, the patent defects are characteristically identifiable through rigorous testing, thorough inspection, and comprehensive examination prior to project handover. This detection phase presents a critical juncture for project owners, as it affords them the opportunity to pursue recourse against contractors who fail to address these visible flaws. The financial burden of rectifying patent defects typically falls upon the contractor, distinguishing them from their latent counterparts in terms of liability allocation. However, the defect management extends beyond the immediate post-construction period. In cases where latent defects emerge within the statutorily defined limitation period, contractors retain the responsibility for their remediation (Abdullah, 2009).

Defect Liability Period (DLP)

The Defect Liability Period (DLP) identifies a timeframe within the construction schedule and is an integral part of the contract. In construction contracts, a crucial phase known as the Defect Liability Period (DLP) or Rectification Period is typically included (Ariffin & Mazlan, 2011; Wali & Ali, 2019). This interval, functioning as a warranty or assurance period, obligates contractors to address and rectify any emerging defects (Oyedele, 2013). Whereas Oluwole et al. (2012) define this period as a timeframe during which contractors must return to the site to resolve issues, with the standard compensation being the cost of achieving contract compliance.

The Defect Liability Period (DLP) has been established as a critical phase in construction projects, commencing from the issuance of the Certificate of Practical Completion (CPC) and extending to a predetermined expiration date. During this period, contractors are responsible for and incur the costs associated with repairing any observable defects (Abdullah, 2009; Ariffin & Mazlan, 2011). If a defect arises during the specified timeframe, it does not constitute a breach of contract; rather, the employer typically grants the contractor access to the site for defect rectification (Ariffin & Mazlan, 2011). Abdullah (2009) and Ojo (2016) have further observed that despite project handover to the employer as per contractual terms, the contractor retains site access rights during this period.

Oyedele (2013) has emphasized the pivotal role of the DLP in addressing project imperfections within construction contracts. This contractual phase primarily facilitates defect rectification in accordance with pre-established terms. The PAM Contract 2018, specifically in Clause 1.0, has delineated the contractor's responsibilities regarding work execution, material provision, and adherence to quality standards as stipulated in contractual documents and architectural specifications. This clause implicitly suggests that failure to meet these requirements may be construed as a breach of contract.

The incorporation of a defect liability clause in standard contracts yields mutual benefits for both the project owner and the contractor (Ariffin & Mazlan, 2011). This provision alleviates the need for the employer to engage new contractors or personally undertake remedial work, thereby mitigating additional time and financial expenditures associated with sourcing alternative remediation solutions.

Concurrently, this arrangement affords contractors the opportunity to rectify identified defects autonomously, circumventing potential complications arising from third-party interventions, which could precipitate more substantial financial implications (McNair, 2016). The engagement of new contractors inherently necessitates additional time for familiarization with defect specifics and optimal remediation strategies, potentially

prolonging the resolution process.

Duration of Defect Liability Period (DLP)

The Defect Liability Phase (DLP) represents a crucial stage in construction projects, commencing immediately after practical completion (Nouh et al., 2023). This period marks the transition from active construction to a phase of observation and potential rectification. Typically, the DLP begins at the point of practical completion and extends for a duration specified within the contract. The initiation of this phase coincides with the initial handover of the project to the employer, signaling the end of primary construction activities (Nouh et al., 2023).

The length of this interval is determined by the requirements set forth by the superintendent officer or architect. Research conducted by McNair (2016) reveals that the duration of the DLP can vary significantly, ranging from a minimum of six months to as long as twenty-four months or more. This variability often results from negotiations between employers and contractors, reflecting the specific needs and complexities of each project.

The defects liability period (DLP) commences with the issuance of a Certificate of Practical Completion (CPC) by the Superintendent Officer (S.O.), indicating the completion of the building (McNair, 2016). Experts often divide the period during which contractors are responsible for rectifying defects into three distinct phases: the construction phase, the maintenance or defect rectification phase, and the post-rectification phase. Upon the conclusion of the DLP and the successful rectification of any issues identified during this time, contractors may seek a final handover certificate from the client. This document effectively transfers full responsibility for the structure to the client, marking the termination of the contractor's formal liability period (Nouh et al., 2023).

Scope of Works During Defect Liability Period (DLP)

Effective scope management is essential throughout the project lifecycle, from bidding to execution, requiring contractors to comprehend contract intricacies and identify work activities (Hidayat & Simanjuntak, 2023). The roles and responsibilities of consultants are delineated in mutually agreed terms of engagement, with the expectation that each professional will execute their duties with reasonable care, adhering to standard contract forms. While the scope of work primarily pertains to contractors, consultants such as architects, engineers, and quantity surveyors provide guidance and consultation to clients throughout the project. However, each party maintains distinct liabilities. Recent research by Mong et al. (2024) highlights the complexity of the construction industry's supply chain management, involving diverse stakeholders including clients, consultants, contractors, and manufacturers. This management process encompasses various organizational functions, spanning planning, design, construction, and maintenance phases.

Standard-form contracts regulate liability for defects in construction works, with variations according to different completion stages (Maritz & Gerber, 2017). Professional consultants are obligated to perform their duties with reasonable care and skill, adhering to industry standards. The House of Lords in Saif Ali v Sydney Mitchell & Co [1980] endorsed the "ordinary skill" requirement as the appropriate standard for all professional parties, ruling that professionals are not liable for damages arising from errors of judgment unless those errors are so egregious that no reasonably informed and competent professional would have committed them.

The superintendent officer or architect plays a crucial role in identifying defects during the defects liability period (DLP). Their responsibilities include thorough building inspection to ascertain the presence of defects and evaluate workmanship against specified standards (Abdullah, 2009). They must also issue written instructions or defect schedules as necessary to address identified issues. The Sutcliffe v Chippendale & Edmonson [1971] case elucidated the architect's duty of care, even in the absence of a formal contract, emphasizing the obligation to monitor progress and ensure adherence to contractual specifications. However, their authority does not extend to instructing the opening of completed work (Abdullah, 2009). In this context, the engineer's team, often referred to as the consultant, plays a vital role in overseeing contractors' progress and facilitating communication regarding technical specifications. This team serves as a bridge between different project aspects, ensuring smooth coordination (Deyta et al., 2024).

The contractors hold the primary responsibility for executing work in accordance with contractual requirements, which encompasses the timely rectification of defects and the completion of the project as stipulated. Adros & Abidin (2019) highlight the conventional responsibilities of contractors in the building development process, which typically involve the physical construction of structures and the application of specialized skills to manage on-site activities. Expanding on this, Deyta et al. (2024) note that civil contractors, in particular, take on the dual responsibility of designing and constructing civil works packages. Their role extends beyond mere execution, as they are tasked with delivering comprehensive project components that align with contractual specifications. Standard contract forms outline the employer's recourse in instances of defective work. Ojo (2016) presents several key provisions regarding this matter: the obligation for defect rectification rests with the contractor, the employer retains the right to rectify defects if the contractor fails to do so, a potential reduction in contract price may serve as an alternative to addressing defects, the employer possesses the authority to withhold payment for costs associated with remedial work, and funds may be retained until the relevant completion certificates are issued. This framework highlights the complex nature of defect management during DLP emphasizing the interconnected responsibilities of various stakeholders in maintaining project quality and integrity.

METHODOLOGY

This study utilized a systematic literature review to investigate the defects after completion clauses in PWD 203A and PAM 2018 Malaysian standard contract forms. The research aimed to identify and analyze the clauses stipulated in these contracts, comparing their approaches to post-completion defects, and evaluating the potential implications for contractors and clients. To achieve these objectives, a comprehensive search of academic databases, publications, and industry reports was conducted using relevant keywords such as "defects after completion," "PWD 203A," "PAM 2018," "construction contracts," and "comparative analysis." The search yielded a wide range of scholarly articles, journal papers, conference proceedings, and other publications.

The researchers employed a thematic analysis approach to systematically examine the gathered information, identifying recurring themes and patterns related to defects after completion, contract clauses, and their implications. The analysis focused on comparing and contrasting the provisions in PWD 203A and PAM 2018, identifying key differences and similarities, and evaluating their potential impact on stakeholders. By adopting this systematic approach, the research ensured a comprehensive and rigorous examination of the defects after completion clauses in PWD 203A and PAM 2018. The findings of this investigation offer valuable insights into the current state of contractual provisions governing defects after completion in the construction industry and offer recommendations for improving the clarity and effectiveness of these contract provisions.

FINDINGS

The findings section of this study presents the comparative analysis of the defects after completion clauses in PWD 203A and PAM 2018 standard form contracts. The findings are structured to address the research objectives outlined in the introduction, providing a comprehensive examination of the relevant clauses, their key differences and similarities, and the potential implications for project stakeholders.

The analysis begins with a detailed examination of the specific clauses related to defects after completion in both contract forms. Subsequently, a comparative analysis is presented, highlighting the key differences and similarities between PWD 203A and PAM 2018 in their approach to post-completion defects. This comparison is supported by tables and specific examples from the contract documents to provide a clear and concise overview of the findings. The findings presented here form the foundation for the subsequent discussion, where the broader implications of these contractual variations for the Malaysian construction industry will be explored.

OVERVIEW OF PWD 203A PROVISION

The PWD 203A standard form contract addresses defects after completion through Clause 48.0, which encompasses four sub-clauses as outlined in Table 1.

Table 1. Key Clauses in PWD Form 203A

Clause 48.0	**Defects After Completion**
Clause 48.1	Completion of Outstanding Work and Remedying Defects
Clause 48.2	Default in Remedying Defects
Clause 48.3	Diminution in Value of Works
Clause 48.4	Certificate of Completion of Making Good Defects

Clause 48.1(a) stipulates that during the Defect Liability Period, typically twelve months from the date of practical completion unless otherwise specified, the Superintending Officer (S.O.) may issue written instructions to the contractor to rectify any defects at their own expense. This clause is commonly referred to as the defect liability period and the period of defect liability is shown in Figure 1.

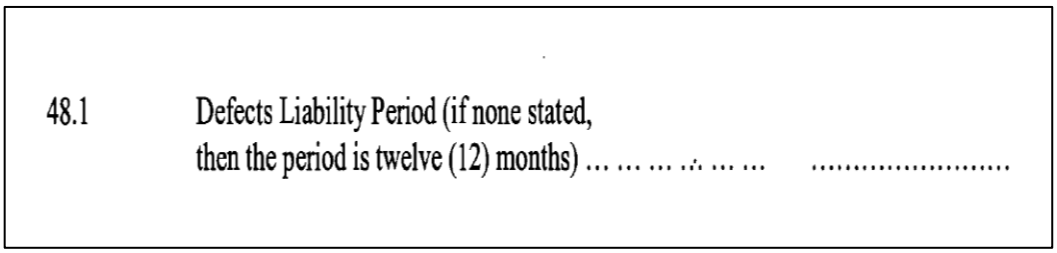

Figure 1. Defects Liability Period Stated in Appendix

The Superintending Officer (S.O.) plays a crucial role in the post-completion phase of construction projects, as outlined in the PWD 203A standard form contract. According to Abdullah (2009), the S.O. is vested with the authority to identify defects in completed works or items that fail to meet contractual specifications. This responsibility encompasses the detection of both minor and significant faults in materials, workmanship standards, and goods provided by Nominated Sub-Contractors (N.S.C.). However, it is important to note the limitations of the S.O.'s authority. While the S.O. has the power to determine and identify defects, their jurisdiction is constrained to this specific function. Abdullah (2009) emphasizes that the S.O.'s authority concludes at the practical completion stage of the project. Consequently, the S.O. lacks the right to issue directives for the execution of new works beyond this point.

In the given clause, a written instruction is specified to be issued to the contractor. Abdullah (2009) highlighted two methods for notifying contractors about defect rectification. The primary approach involves written instructions, where the defects or faulty works requiring remediation by the contractor are documented in writing, rather than communicated verbally. In cases where immediate attention or urgent rectification is necessary, the Supervising Officer (S.O.) may issue a written instruction. These instructions can address individual defects and may be issued as frequently as the S.O. deems necessary.

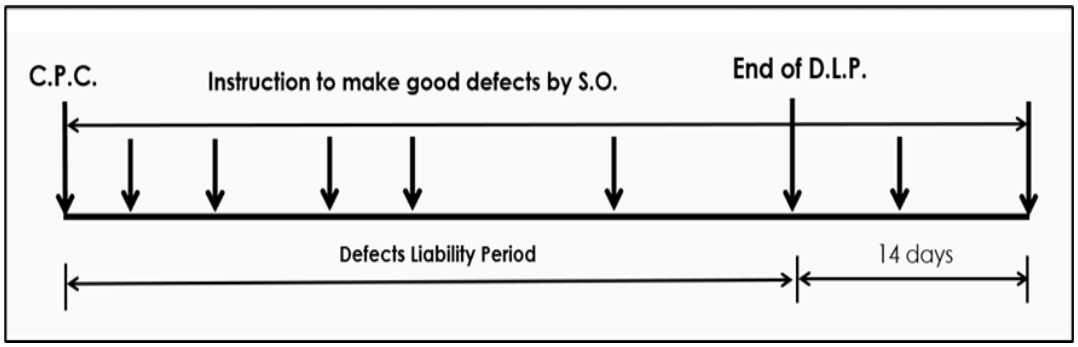

Figure 2. Instruction For Rectifying Defects

Figure 2 illustrates the process of issuing instructions for rectifying defects, as outlined by Abdullah (2009). This diagram demonstrates that written directives may be issued multiple times throughout the defect liability period (DLP). During this timeframe, contractors are responsible for addressing and rectifying any identified defects within the specified duration. It is important to note that the expenses associated with these remedial works are typically borne by the contractors themselves, as they are accountable for the defects that have emerged.

PWD Form 203A Clause 48.1(b) outlines the procedures for addressing defects during the Defect Liability Period (DLP). This clause stipulates that any defects appearing during the DLP must be documented by the Supervising Officer (S.O.) in a Schedule of Defects. This schedule is to be delivered to the Contractor within fourteen days following the DLP's expiration. The Contractor is then obligated to rectify these defects at their own expense within a reasonable timeframe, not exceeding three months from the receipt of the schedule. Notably, the S.O. is prohibited from issuing further instructions after the Schedule of Defects has been provided.

This clause aligns with Abdullah (2009) assertion that there are two primary methods for notifying contractors about defects. While written instructions can be issued before the DLP concludes, the S.O. retains the authority to instruct the contractor on defect remediation. The second method, as highlighted by Abdullah, involves the issuance of a Schedule of Defects. A joint inspection is typically conducted within fourteen days of the DLP's expiry. The Schedule of Defects can be issued once, either during or after the DLP, but not earlier than 14 days post-DLP expiration.

Upon receiving the Schedule of Defects, the contractor is responsible for promptly addressing the listed issues at their own cost. The S.O. determines an appropriate timeframe for the contractor to complete these remedial works, considering the nature and extent of the defects. Figure 3 in the PWD 203A document illustrates the timeline for defect rectification under this contract form.

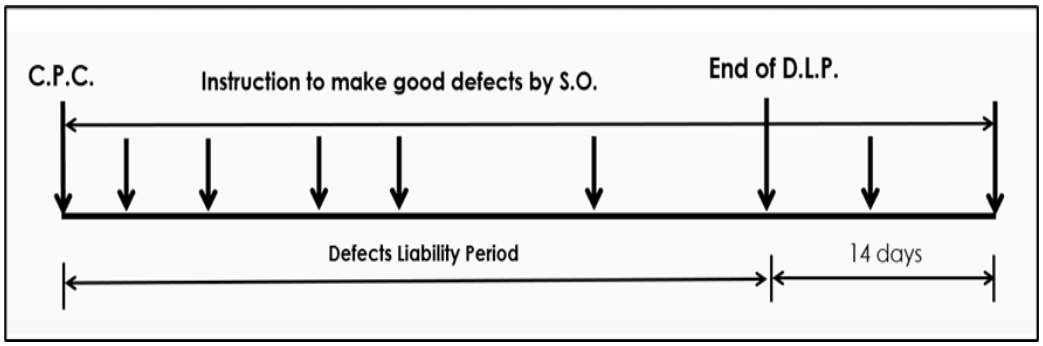

Figure 3. Timeline of Making Good Defects in PWD 203A

A pertinent legal case that illustrates these principles is Pearce & High Ltd v Baxter. This dispute centered on defective work identified by the property owners, Mr. and Mrs. Baxter, following alterations and extensions carried out by the contractors, Pearce & High Ltd, on both the interior and exterior of the Baxters' residence. Although defects became apparent before the conclusion of the defect liability period, neither the owners nor their representatives notified the contractor of these issues. The Appellate Court's ruling in this case established a significant precedent: the contractor's obligation to rectify defects could not be enforced without proper notification. The court determined that the absence of such notice from the employer (property owner) did not negate their right to seek compensation. However, this lack of timely communication would likely result in a reduction of the damages the employer could recover. This case underscores the importance of timely and clear communication regarding defects in construction projects. It highlights the balance between a contractor's responsibility to address issues and an owner's duty to provide prompt notification, thereby influencing the scope of potential compensation in disputes over construction defects.

Clause 48.2 in PWD Form 203A outlines the consequences when a contractor fails to address defects within the specified timeframe. In such instances, the Supervising Officer (S.O.) is empowered to initiate remedial actions as deemed appropriate. The contract typically allows for the deduction of costs, including On-Cost

Charges, from any payments due to the contractor. Alternatively, these expenses may be recovered through the Performance Bond or treated as an outstanding debt. If a contractor neglects to rectify defects, the employer has recourse to recover the rectification costs. As per contractual stipulations, the recovery of such costs can be achieved either through withholding funds owed to the contractor or by making a claim against the performance bond. Furthermore, the employer is authorized to engage and compensate a third party to rectify the faulty work. The expenses for this remedial work can be deducted from the performance bond or from any amount owed to the original contractor. It is important to to recognize that when an employer engages a third party for remedial work, the original contractor remains accountable for the associated expenses. Furthermore, the employer retains the right to claim On-Cost Charges, as illustrated in Figure 4.

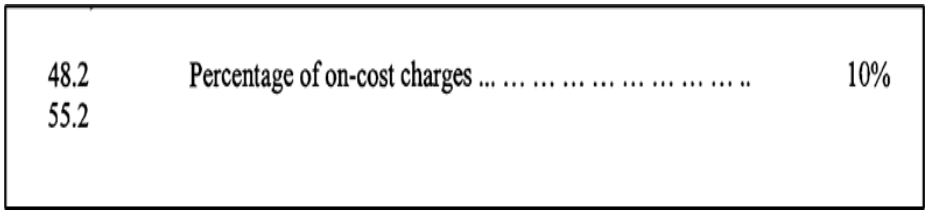

Figure 4. On-Cost Charges

In construction projects, it is imperative for employers to recognize the original contractor's right and responsibility to rectify defects before engaging a third party. This approach is typically more cost-effective than appointing a new contractor for remediation. The landmark case of P &M Kaye Ltd v Hosier & Dickinson Ltd, wherein Lord Diplock's ruling, underscores this principle. The judgment emphasizes that contractors bear the liability to mitigate damages by rectifying construction defects at their own expense, while simultaneously conferring upon them the right to do so. This legal precedent establishes that employers cannot claim damages for the difference in value between properly constructed and defective works without first allowing the contractor the opportunity to address the issues. Consequently, contractors are entitled to rectify all defects occurring within the Defects Liability Period (DLP). Should an employer deny this opportunity or fail to provide adequate defect notice, it may result in a reduction of recoverable damages, thus balancing the interests of both parties and promoting fair practices in construction contract execution.

Clause 48.3 in PWD Form 203A addresses situations where defect remediation is deemed impractical or inconvenient. In such cases, the Supervising Officer (S.O.) is tasked with assessing the diminution in the works' value. This amount becomes recoverable as a debt under the contract or from the Performance Bond. Abdullah (2009) interprets this clause as allowing the S.O. to accept minor defects or calculate value diminution when defect rectification is challenging, costly, or irrational. In cases where diminution in value occurs, the contract may permit recovery of this amount from the contractor's payment or through the performance bond or retention fund.

Clause 48.4 outlines the process for issuing the Certificate of Making Good Defects (CMGD). This clause stipulates that when the Supervising Officer (S.O.) determines that the Contractor has successfully remedied defects, the S.O. is required to issue a certificate. This document, known as the Certificate of Making Good Defects (CCMGD), specifies the date on which the contractor completed the rectification of such defects. Abdullah (2009) elaborates on this process, noting that the CCMGD is issued at the S.O.'s discretion, once they are satisfied with the remedial works. Importantly, the CCMGD is typically issued only once, encompassing all defect rectifications covered under the contract. In standard practice, copies of this certificate are distributed to all relevant parties involved in the project.

The issuance of this certificate carries significant implications for the contractor. Upon its release, the contractor is no longer obligated to address patent defects. Furthermore, it triggers the release of performance bonds and the final certificate. Additionally, the insurance coverage associated with the project is terminated at this point. To provide a visual representation of this process, Figure 5 illustrates the procedure for handling defects after project completion. This diagram serves as a useful reference, offering a clear overview of the steps involved in the post-completion defect management process under the PWD 203A contract framework.

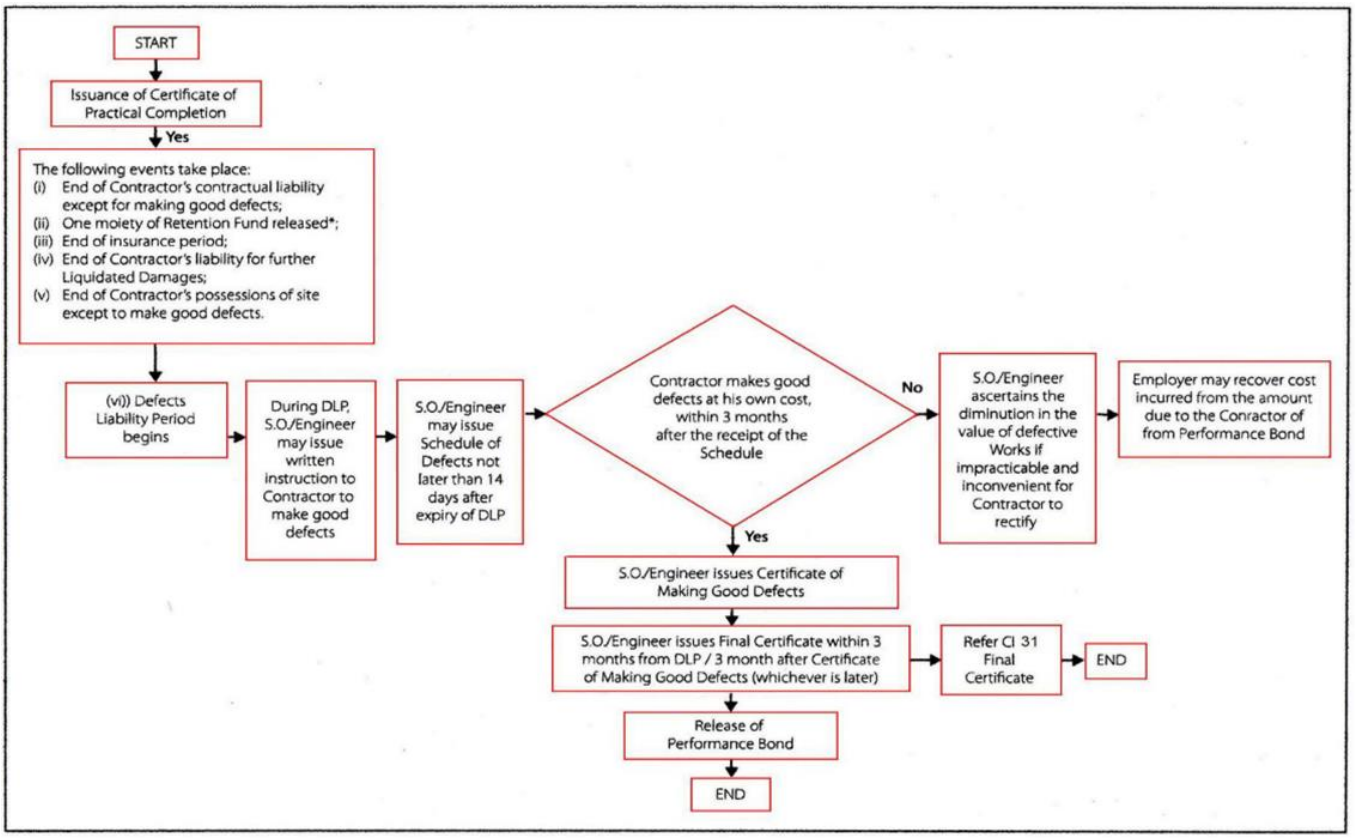

Figure 5. The Procedure For Handling Defects After Project Completion in PWD 203A

OVERVIEW OF PAM CONTRACT 2018 (WITH QUANTITIES)

Table 2 provides an overview of the contractual provisions in PAM 2018 concerning defects after completion, emphasizing key clauses related to Practical Completion and Defect Liability.

Table 2. Key Clauses in PAM Contract 2018

Clause 15.0	**Practical Completion and Defect Liability**
Clause 15.4	Schedule of Defects
Clause 15.5	Instruction to make good Defects
Clause 15.6	Certificate of Making Good Defects

Clause 15.4 in PAM Contract 2018 delineates the process for addressing defects post-completion. This clause stipulates that any defects must be specified by the Architect in a schedule of defects, which should be issued no later than fourteen days following the expiration of the Defects Liability Period (DLP). Upon receipt of this schedule, the Contractor is obligated to rectify the specified defects within twenty-eight days.

Should the Contractor fail to address these defects, the clause empowers the Employer to engage and compensate another party to rectify the issues. The costs incurred in this process may be set off by the Employer against amounts due to the Contractor. Additionally, the clause provides for scenarios where the Architect instructs the Contractor to leave certain defects unaddressed in the Works. In such cases, an appropriate deduction for these unresolved defects shall be set off by the Employer.

While Clause 15.4 does not explicitly mention the duration of the DLP, it is generally understood to be twelve months from the date specified in the Practical Completion Certificate (CPC), unless an alternative period is stipulated in the Appendix of the standard form of contract. This timeframe is illustrated in Figure 6 of the document. The allocated period is designed to provide the Contractor with sufficient opportunity to rectify any

defective works. It is important to note that the expenses associated with these remedial works are typically borne by the Contractor, as they are responsible for the defects that have emerged during this period.

	Clause	
Defects Liability Period [if none other stated is twelve (12) Months from the day stated in the Certificate of Practical Completion of the Works]	15.4	.....

Figure 6. Defects Liability Period (DLP)

The Defects Liability Period (DLP), as outlined in the Appendix and illustrated in Figure 6, plays a crucial role in post-completion quality assurance. Following this period, the contract allows for the issuance of a schedule of defects, which must be delivered no earlier than fourteen days after the DLP's expiration, as depicted in Figure 7. Upon receiving this schedule, the contractor is obligated to rectify the identified defects within a twenty-eight-day timeframe, commencing from the DLP's conclusion. However, the architect retains the discretion to extend this period if deemed necessary. This provision ensures that contractors have a reasonable opportunity to address any issues that have emerged during the liability period.

In cases where the contractor fails to meet the specified deadline for defect rectification, the contract empowers the employer to take alternative action. Specifically, the employer may engage a third party to undertake the necessary remedial work. This clause serves as a safeguard, ensuring that defects are addressed promptly, even in the event of contractor non-compliance. Interestingly, the contract also provides for scenarios where the employer might choose to accept certain defective works. In such instances, the contract allows for a financial adjustment, whereby the value associated with these accepted defects can be deducted from the amounts due to the contractor. This provision offers flexibility in managing minor imperfections while maintaining fairness in the financial aspects of the project.

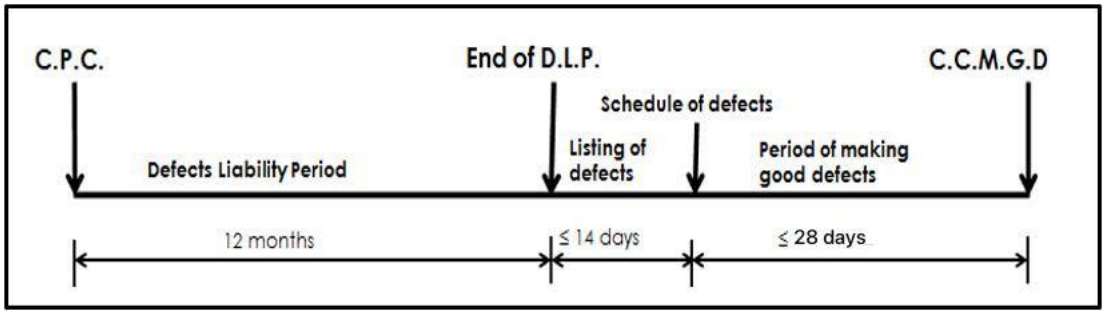

Figure 7. Timeline of Making Good Defects in PAM Contract 2018

An examination of Clause 15.5 in PAM Contract 2018 reveals a provision empowering the Architect to take prompt action regarding critical defects during the Defect Liability Period (DLP). The clause stipulates that the Architect possesses the authority to issue Architect Instructions (AI) at any point within the DLP, mandating the immediate rectification of hazardous defects that demand urgent attention. These instructions necessitate the Contractor to address such issues within a reasonable timeframe, with the associated costs borne by the Contractor. This clause effectively establishes a mechanism for addressing critical defects promptly, circumventing the need to wait for a formal schedule of defects. It is noteworthy that the Architect retains the discretion to issue multiple such instructions throughout the duration of the DLP, ensuring ongoing vigilance and timely resolution of potentially dangerous construction flaws.

An analysis of Clause 15.6 in PAM Contract 2018 elucidates the procedural framework for addressing defects post-completion. This provision delineates the Architect's contractual rights and responsibilities upon the Contractor's assertion of defect rectification. The clause mandates that the Contractor promptly notify the Architect in writing upon completing all necessary repairs. Subsequently, the Architect is allocated a 14-day window to respond, with two potential outcomes: upon satisfactory resolution of all identified defects, the Architect is contractually obligated to issue the Certificate of Completion of Making Good Defects (CCMGD),

distributing copies to both the Employer and Nominated Sub-Contractors (NSC). Conversely, should the Architect deem the remediation efforts insufficient, they must provide a written notice to the Contractor, copied to the NSC, outlining the grounds for withholding the certificate. This process, as illustrated in Figure 8, encapsulates the defect management procedure post-completion, a protocol that has remained consistent from PAM 2006 to the current PAM 2018 iteration.

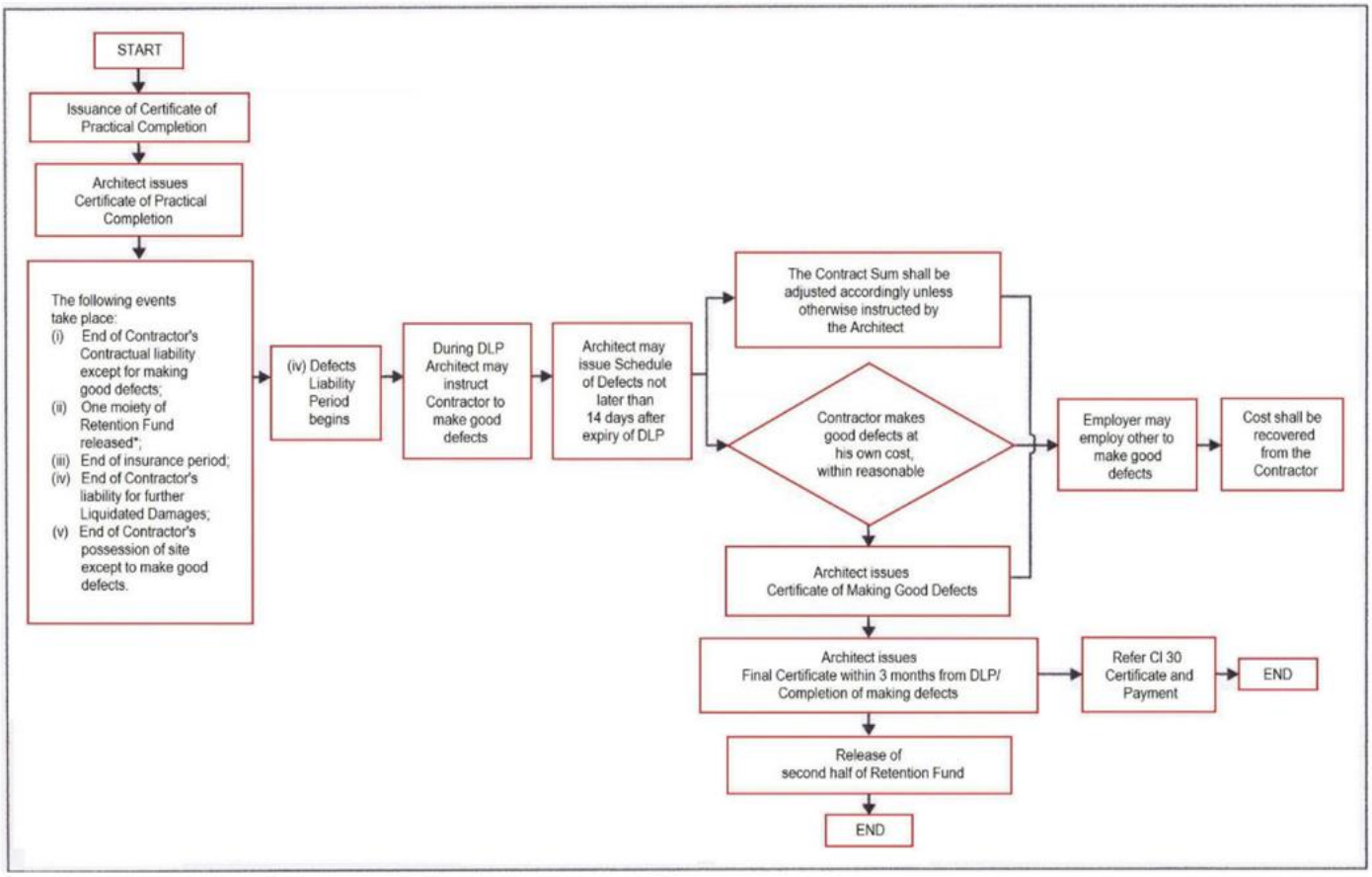

Figure 8. The Procedure For Handling Defects After Project Completion in PAM Contract 2018

COMPARATIVE ANALYSIS OF KEY CLAUSES

This section provides a detailed comparison of the key clauses related to defects after completion in PWD 203A and PAM 2018 standard form contracts.

Definition of Defects

This section critically examines the conceptualization of defects within the PWD 203A and PAM 2018 standard form contracts.

PWD 203A: The PWD 203A contract defines defects broadly in Clause 48.1(a) as:

- Any defect, imperfection, shrinkage or any other fault whatsoever
- Which may appear and which are due to materials or goods or workmanship not in accordance with this Contract
- The design of the works (to the extent that the Contractor is responsible for the design)
- Failure to comply with any other obligation expressed or implied in the Contract

PAM 2018: In contrast, PAM 2018 provides a more specific definition in Article 7(x), describing defects as:

- Any defect, shrinkage, or other fault in the Works
- Which is due to materials or goods or workmanship not in accordance with the Contract

- The design of the Works (to the extent that the Contractor is responsible for the design)

Key Difference: PWD 203A's definition is broader, the phrase "any imperfection... or other fault" allows for a wide interpretation potentially allowing for a wider range of issues to be classified as defects, while PAM 2018's definition is more focused on non-compliance with the contract specifications. For example, if a building's paint fades faster than expected, but this was not explicitly specified in the contract, PWD 203A's broader definition would allow the S.O. to classify this as a defect if they believe it represents an imperfection or other fault. However, under PAM 2018, this might not be considered a defect unless the contract specifically stated requirements for paint durability or colour retention.

Duration of Defects Liability Period

The defects liability period is a critical phase in construction projects and this analysis compares the stipulated durations in PWD 203A and PAM 2018.

PWD 203A: Clause 48.1(a) clearly stipulates the DLP as a 12-month interval commencing from the date of practical completion.

PAM 2018: While Clause 15.4 does not directly specify the DLP duration, it implicitly establishes a default period of twelve months from the date referenced in the Certificate of Practical Completion (CPC). However, PAM 2018 introduces an element of customization by allowing for alternative durations to be stipulated in the contract's Appendix. This provision enables parties to tailor the DLP to project-specific requirements.

Similarity: Despite this subtle difference in presentation, both standard forms converge on a fundamental principle: the establishment of a baseline 12-month period for addressing defects post-completion

Notification And Inspection Procedures

This section provides a comparative analysis of the procedural mechanisms outlined in PWD 203A and PAM 2018 for defect notification and inspection.

PWD 203A: Clause 48.1(b) requires the S.O. to issue a Schedule of Defects to the Contractor within 14 days after the end of the Defects Liability Period (DLP).

PAM 2018: Clause 15.4 mandates that the Architect issues the Schedule of Defects within 14 days after the end of the Defects Liability Period, but in Clause 15.5 also allows for critical defects requiring urgent rectification during the Defects Liability Period.

Key Difference: PAM 2018 offers more flexibility in defect notification, allowing for the issuance of AIs for critical defects during the DLP. This can help address urgent issues promptly compared to PWD 203A's single end-of-period approach.

Rectification Process And Timelines

The section herein focuses on the comparative analysis of defect rectification processes as delineated in PWD 203A and PAM 2018.

PWD 203A: Clause 48.(b) requires the Contractor to rectify defects specified in the Schedule of Defects within a reasonable time, but not later than 3 months after receipt of the Schedule as may be instructed by the S.O.

PAM 2018: Clause 15.4 states that the Contractor shall rectify defects within 28 days after receipt of the schedule of defects or within a longer period agreed in writing by the Architect.

Key Difference: PWD 203A provides a longer maximum period (3 months) for rectification, while PAM 2018 specifies a shorter default period (28 days) with flexibility for extension.

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Contractor's Obligations And Liabilities

This section presents a critical examination of contractors' responsibilities and potential liabilities as outlined in PWD 203A and PAM 2018.

PWD 203A: Clause 48.1(a) places the responsibility on the Contractor for rectifying any defect, imperfection, shrinkage, or other fault at their own cost. In Clause 48.2, if the Contractor fails to comply, the S.O. can arrange for rectification and deduct costs from the Contractor, including On-Cost Charges.

PAM 2018: Clause 15.4 Clause 15.4 similarly requires the Contractor to make good any defects at their own expense. In Clause 15.5, the Contractor must attend to critical defects urgently as specified by the Architect.

Similarity: Both contracts place the primary responsibility and cost for rectifying defects on the Contractor.

Client's Rights And Remedies

The final section of this comparative analysis focuses on the rights and remedies available to clients under PWD 203A and PAM 2018 in relation to post-completion defects.

PWD 203A: Clause 48.2 allows the Government to rectify defects and recover cost at the Contractor's expense including from the Performance Bond if the Contractor fails to do so. Clause 48.3 explains for impractical-to-remedy defects, the S.O. can ascertain the diminution in value and recover it from the Contractor.

PAM 2018: Clause 15.4 permits the Employer to engage others to rectify defects and set off the costs against amounts due to the Contractor if the Contractor fails to do so. In Clause 15.4, the Employer can also choose to leave certain defects unrectified and make an appropriate deduction.

Similarity: Both contracts allow the Client to rectify defects at the Contractor's expense if the Contractor fails to do so. Key Difference: PWD 203A explicitly mentions recovery from the Performance Bond and provides for diminution in value for impractical-to-remedy defects, while PAM 2018 does not specifically mention these options.

Table 3. Comparison of Key Defects After Completion Provisions in PWD 203A and PAM 2018

Aspect	**PWD 203A Provision**	**PAM 2018 Provision**
Definition of Defects	Broader, includes S.O.'s identification	More specific, focused on contract compliance
Defects Liability Period	12 months from the date of practical completion	12 months from the date of practical completion.
Notification Procedure	Single end-of-period schedule	Allows for ongoing notifications
Rectification Timelines	3 months after receipt of the Schedule	28 days after receipt of the schedule or reasonable time specified by Architect
Contractor's Obligations	Rectify at own cost	Rectify at own expense
Client's Remedies	Can rectify at Contractor's expense	Can engage others at Contractor's cost

KEY DIFFERENCES AND SIMILARITIES

This section highlights the major differences and notable similarities between the defects after completion clauses in PWD 203A and PAM 2018 standard forms of contract.

Major Differences

- **Definition of Defects:** PWD 203A provides a broader definition of defects compared to PAM 2018. The PWD 203A contract allows for a wider range of issues to be classified as defects, including any imperfection, shrinkage, or other fault identified by the Superintending Officer (S.O.). In contrast, PAM 2018 offers a more specific definition, focusing on non-compliance with contract specifications. This difference in definition could potentially lead to varying interpretations of what constitutes a defect under each contract.
- **Notification and Inspection Procedure:** While both contracts require the issuance of a Schedule of Defects within 14 days after the end of the Defects Liability Period (DLP), PAM 2018 demonstrates greater flexibility in defect notification. PAM 2018 allows for the issuance of Architect's Instructions (AIs) for critical defects requiring urgent rectification during the DLP. This provision enables more prompt addressing of urgent issues compared to PWD 203A's single end-of-period approach.
- **Rectification Process and Timelines:** The contracts differ in their stipulated timelines for defect rectification. PWD 203A allows for a longer maximum period of 3 months after receipt of the Schedule of Defects for rectification. In contrast, PAM 2018 specifies a shorter default period of 28 days, with the possibility of extension if agreed upon in writing by the Architect. This difference could impact project timelines and the urgency with which contractors address defects.
- **Client's Rights and Remedies:** While both contracts allow the client to rectify defects at the contractor's expense if the contractor fails to do so, PWD 203A provides more explicit provisions. It specifically mentions the possibility of recovering costs from the Performance Bond and provides for diminution in value for defects that are impractical to remedy. PAM 2018 does not explicitly mention these options, potentially offering less clarity in such situations.

Notable Similarities

- **Duration of Defects Liability Period:** Both PWD 203A and PAM 2018 establish a standardized defect liability period of 12 months from the date of practical completion. This consistency provides a uniform timeframe for addressing defects across different types of construction projects.
- **Contractor's Obligations and Liabilities:** Both contracts place the primary responsibility and cost for rectifying defects on the contractor. This alignment ensures that contractors are held accountable for the quality of their work and materials used in the project.
- **Client's Right to Rectify:** Both PWD 203A and PAM 2018 allow the client (referred to as the Government in PWD 203A and the Employer in PAM 2018) to rectify defects at the contractor's expense if the contractor fails to do so. This provision safeguards the client's interests and ensures that defects are addressed even if the contractor is unwilling or unable to rectify them.

Table 4. Summary of Key Differences and Similarities

Aspect	PWD 203A Provision	PAM 2018 Provision	Similarity/Difference
Definition of Defects	Broader	More specific	Difference
Defects Liability Period	12 months	12 months	Similarity
Notification Procedure	Single end-of-period schedule	Allows for ongoing notifications	Difference

Rectification Timeframe	3 months	Reasonable time	Difference
Contractor's Obligation	Primary responsibility	Primary responsibility	Similarity
Client's Right to Rectify	Allowed	Allowed	Similarity

This comparative analysis reveals that while PWD 203A and PAM 2018 share fundamental principles in managing defects after completion, they differ in specific aspects such as timelines and definitions. These differences can significantly impact project management and stakeholder relationships, as will be further explored in the discussion section.

DISCUSSION

Building upon the findings presented in the previous section, this discussion aims to interpret and contextualize the results of the comparative analysis. The potential implications of the identified differences and similarities between PWD 203A and PAM 2018 for contractors, clients, and other project stakeholders in the Malaysian construction industry are explored in depth. The discussion is structured to address each of the research objectives, evaluating the practical consequences of the contractual variations and their potential impact on project outcomes. An examination of the strengths and weaknesses of each contract form's approach to defects after completion is conducted, considering factors such as clarity, flexibility, and alignment with industry best practices. By synthesizing the findings with existing literature and industry insights, this discussion aims to provide a comprehensive understanding of the current state of defects after completion clauses in Malaysian standard form contracts and offer valuable recommendations for industry practitioners and policymakers.

IMPLICATIONS OF CONTRACTUAL VARIATIONS

The differences in defects after completion clauses between PWD 203A and PAM 2018 have significant implications for various stakeholders in the Malaysian construction industry.

Impact on Contractor

The variations in defect liability provisions between PWD 203A and PAM 2018 have significant implications for contractors operating under these contracts. These implications stem from differences in defect definition, rectification timelines, and liability scope.

Firstly, the broader definition of defects in PWD 203A exposes contractors to a higher risk of liability. Under PWD 203A, any imperfection or fault identified by the Superintending Officer (S.O.) can be classified as a defect, even if it's not explicitly non-compliant with contract specifications. This broader interpretation could lead to an increased number of defect claims, potentially escalating the contractor's financial and operational burdens. Conversely, the more specific definition in PAM 2018 provides contractors with a clearer framework for assessing their liability, potentially reducing disputes over what constitutes a defect.

Secondly, the variation in rectification timelines impacts the contractor's project management and resource allocation. PWD 203A's longer maximum rectification period of 3 months offers contractors more flexibility in addressing defects, potentially allowing for more efficient resource management across multiple projects. However, PAM 2018's shorter default period of 28 days, while potentially more challenging, could encourage more prompt defect resolution, potentially improving client satisfaction and project closure rates.

Furthermore, PAM 2018's provision for addressing critical defects during the Defects Liability Period (DLP) through Architect's Instructions (AIs) requires contractors to maintain a more responsive approach throughout the DLP. This could necessitate the allocation of resources for rapid response, potentially increasing operational costs but also enhancing the contractor's reputation for responsiveness.

Lastly, PWD 203A's explicit mention of cost recovery from the Performance Bond and provisions for

diminution in value for irremediable defects presents a higher financial risk for contractors. This could incentivize more thorough quality control measures during construction but may also lead to more conservative pricing strategies to account for these potential liabilities.

Impact on Client/Employer

The contractual variations between PWD 203A and PAM 2018 also have significant implications for clients or employers, particularly in terms of defect management, project timelines, and financial considerations.

The broader definition of defects in PWD 203A potentially benefits clients by providing greater leverage in ensuring high-quality project outcomes. This broader scope allows clients to address a wider range of imperfections or faults, potentially resulting in higher overall build quality. However, this could also lead to more frequent disputes with contractors over what constitutes a defect, potentially straining client-contractor relationships and project timelines.

PAM 2018's provision for addressing critical defects during the DLP through AIs offers clients more immediate recourse for urgent issues. This can lead to faster resolution of critical problems, potentially reducing the risk of further damage or operational disruptions. However, it may also require more active involvement and monitoring from the client's side throughout the DLP.

The variation in rectification timelines also impacts clients differently under each contract. PWD 203A's longer maximum rectification period might delay the final resolution of defects, potentially extending project closure timelines. Conversely, PAM 2018's shorter default period could lead to quicker defect resolution, but might also result in more frequent requests for timeline extensions from contractors.

Financially, PWD 203A's explicit provisions for cost recovery from the Performance Bond and for diminution in value offer clients stronger safeguards against contractor non-performance or irremediable defects. This could provide greater financial security for clients but might also lead to more contentious negotiations during the contracting phase.

Lastly, the different approaches to defect notification and management between the two contracts imply varying levels of involvement required from clients. PWD 203A's single end-of-period approach might require less ongoing management but a more intensive review at the end of the DLP. PAM 2018's more flexible approach allows for ongoing defect management but might necessitate more continuous involvement and decision-making from the client throughout the DLP.

Impact on Stakeholders

The contractual variations between PWD 203A and PAM 2018 extend their implications beyond just the contractor and client, affecting various other stakeholders in the construction process.

For architects and project managers, the different defect definitions and management approaches necessitate adapted oversight strategies. Under PWD 203A, they may need to exercise more discretion in identifying and classifying defects, potentially requiring more detailed documentation and justification. The broader definition might also necessitate more frequent communication with contractors to pre-emptively address potential issues. Under PAM 2018, while the defect definition is more specific, the provision for addressing critical defects during the DLP requires a more vigilant and responsive approach throughout the project lifecycle.

Subcontractors and suppliers are also indirectly affected by these variations. The broader defect definition in PWD 203A might lead main contractors to impose stricter quality control measures on their subcontractors and suppliers, potentially increasing costs but also driving improvements in overall work quality. The different rectification timelines between the contracts might also influence how main contractors manage their relationships with subcontractors, particularly in terms of defect liability periods in subcontracts.

For legal and dispute resolution professionals, the contractual variations present different challenges. PWD 203A's broader defect definition and explicit provisions for cost recovery and diminution in value might lead to

more complex disputes requiring interpretation. Conversely, PAM 2018's more specific definitions might result in fewer but potentially more technical disputes centred around compliance with contract specifications.

Financial stakeholders, such as investors or lenders, might view projects under these different contracts with varying risk profiles. PWD 203A's broader defect definition and stronger client safeguards might be seen as increasing project risk from the contractor's perspective, potentially affecting financing terms or investment decisions. PAM 2018's more balanced approach might be viewed more favourably in terms of risk distribution between parties.

Lastly, end-users of the constructed facilities are also impacted. PWD 203A's broader defect definition might result in a higher standard of final build quality, potentially benefiting end-users in the long term. However, the longer potential rectification periods might delay the resolution of issues affecting user experience. PAM 2018's provision for addressing critical defects during the DLP could lead to faster resolution of issues impacting end-users, potentially improving overall satisfaction.

In conclusion, the contractual variations between PWD 203A and PAM 2018 have far-reaching implications across the construction ecosystem. These differences influence not only the direct parties to the contract but also shape the broader dynamics of project execution, quality control, dispute resolution, and ultimately, the delivered built environment. Understanding these implications is crucial for all stakeholders in navigating the complexities of construction contracts and ensuring successful project outcomes.

CONCLUSION

This comparative analysis of the defects after completion clauses in PWD 203A and PAM 2018 standard form contracts has revealed significant differences in their approaches to managing post-completion defects in the Malaysian construction industry. The research has addressed the objectives of identifying and analyzing the relevant clauses, highlighting key differences and similarities, and evaluating their potential implications for project stakeholders.

PWD 203A offers a comprehensive and client-protective approach, with its broad definition of defects, extended rectification period, and explicit financial safeguards. However, these strengths are counterbalanced by weaknesses such as rigidity in defect management, potential for disputes due to the broad defect definition, and limited provisions for ongoing notification during the Defects Liability Period.

In contrast, PAM 2018 demonstrates greater flexibility in defect management, with provisions for accepting minor defects with corresponding price reductions and mechanisms for addressing critical defects promptly. Its more specific defect definition may reduce the potential for disputes. However, PAM 2018's shorter default rectification period and less explicit financial protections may pose challenges in certain project contexts.

The choice between these contract forms should be guided by project-specific factors, including project complexity, timeline constraints, risk tolerance of the parties involved, and the nature of potential defects. PWD 203A may be more suitable for complex, large-scale projects where comprehensive client protection is paramount. PAM 2018, with its flexible approach, may be more appropriate for projects where rapid completion and handover are priorities.

Ultimately, both contract forms have their merits, and their effectiveness will largely depend on the specific project context and the priorities of the contracting parties. The ongoing evolution of these standard forms should aim to balance flexibility, clarity, and protection for all parties involved in construction projects.

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