

16th Pacific-Rim Real Estate Society Conference Wellington, New Zealand, 24 to 27 January 2010

Property Development Principles and Process - an Industry Analysis

Greg Costello

Curtin University of Technology
Perth, Western Australia.

Ferdinand Preller

Curtin University of Technology
Perth, Western Australia.

Corresponding author; Greg Costello: G.Costello@Curtin.edu.au

Abstract

Property development is widely regarded as an integrated process revolving around numerous components that link distinct phases in the development cycle. This paper explores industry participants' perceptions of key performance areas of the property development process. We focus upon the development of commercial property in Queensland Australia. Utilising a sample of major Queensland-based developers we use a questionnaire to survey industry perceptions of key performance processes in the property development industry. The main emphasis of the survey is to identify common principles and characteristics of the property development process as they occur *prior to* the commencement of construction activities. Our results confirm that in general, developers apply many pre-construction development principles within a structured framework. We conclude by identifying and discussing in detail several key performance areas identified in our survey responses: (i) location and site selection, (ii) market research/analysis, and (iii) feasibility principles incorporating design development and financial analysis.

1.0 Introduction

Property development comprises a significant component of total Australian economic output. The property development process involves the continual combination of significant factors of production (land, labour, capital and enterprise). In addition, property development in Australia has been characterised by some significant cyclical influences as the process involves significant risk. It is in the interests of capital markets, market participants and the public sector that property development processes are better understood so as to ensure efficient allocation of physical resources, human resources and capital. Surprisingly, with the exception of Newell and Steglick (2006) there has been little formal investigation of the Australian property development process within the academic literature. This paper makes a contribution through an empirical analysis of important practices and processes observed by property developers in Queensland Australia.

An important theme through much of the literature suggests that property development is an integrated process revolving around numerous concepts that link distinct phases in the development cycle. This study attempts to identify and evaluate the key performance areas that make up the integrated property development process. We focus upon the application of *pre-construction* property development principles and processes within the context of commercial property development in broadly capitalist terms (i.e. commercial entities seeking profit as opposed to public-sector development).

Our empirical study examines data from respondents in Queensland, Australia. Our sample comprises a significant sample of both listed and unlisted property development companies. The economy of Queensland, the third largest in Australia with an established property development industry, provides the ideal backdrop to conduct the study. This study aims to contribute to the body of knowledge concerning property development, as an interdependent and complex process that involves multiple drivers, stakeholders and contributions from many disciplines. The rest of the paper proceeds as follows: in section 2 we provide more detail for the motivation to this study and review significant related literature. Section 3 provides an overview of the structure and findings from the empirical study. Finally in section 4 we provide conclusions and recommendations.

2.0 Motivation and Related Literature

Our prime motivation for undertaking this study is a desire to understand the property development process from a *practical perspective*. In order to achieve this we need to understand the perspectives of participants within the industry. By definition, property developers are in constant contact with the practical implementation of the property development process. This defines our study as an empirical analysis of market practices, perceptions and viewpoints as distinct from a formal theoretical or economic analysis. In this section we provide first a general overview of the real estate development process as discussed within the important literature. As the main focus of our

study is on preconstruction processes we then develop our discussion according to three main themes identified in the literature:

- 1) Location studies and site selection
- 2) Market research and property markets
- 3) Feasibility principles, design development and financial analysis

There exists a voluminous literature related to the process of property development. What then is the property development process? One of the most celebrated and widely quoted authors concerning real estate development is James Graaskamp¹ who discusses real estate as "space delineated by man, relative to fixed geography, intended to contain an activity for a specific period of time". Real estate has, in addition to the three dimensions of space (length, width and height), a fourth dimension of time. The creation and management of *space-time-units* is defined as real estate development, a complex and collective process involving various stakeholders (Graaskamp, cited in Squirrel, 1997).

Graaskamp developed a widely quoted general development framework of stakeholders and participants: "success in converting real estate space into money over time depends on how well the investor operates within the real estate environment. This environment can be depicted as the dynamic relationship between the real estate itself (site plus improvement) and three participant groups: (1) investors-developers, who provide real estate space over time; (2) consumers, who use or consume the space provided; and (3) government, which provides the public infrastructure within which all real estate transactions take place" (Graaskamp, cited in Pyhrr et al., 1989, p. 5). One of the strengths of this general framework for the analysis of property development is the recognition of each group as an individual cash enterprise entity. An important limiting constraint shared by all three groups is the fact that each is a cash enterprise that must remain solvent and which must create a surplus (economic profit) over time.

Whereas Graaskamp is widely regarded for development of a holistic framework in order to analyse the development process, other authors have tended to focus upon individual roles from a management perspective. A widely held view is of the developer as "conductor of an orchestra". Schmitz and Brett (2001, p. 11) argue that: "the developer's role is to orchestrate the development process to bring the project to completion. Developers are the central actors in the development process." important predevelopment stages, include conducting preliminary studies, negotiating sale or other ownership agreements, securing financing, undertaking the approval process, initiating planning and design and starting site work - followed by construction, sales

¹ James A. Graaskamp (1933-1988) professor and department chairman of real estate at the University of Wisconsin Madison is credited with creating a multi-faceted ethics based approach to real estate development. He advocated for an environmental ethic in real estate analysis, arguing that development has considerable and nearly irreversible impacts on land and communities. He emphasised consistently the need for a social component to real estate development, arguing that the rights of private and public property owners are inextricably linked.

and governance of the completed project. Particular emphasis is placed in this study on the important role of consultants in the development process. The team might include attorneys, planners, market researchers, engineers, geologists, environmental specialists, architects, landscape architects, financiers, contractors and sales managers.

A similar argument is proposed by Miles et al. (2000) in which it is submitted that developers must "balance an extraordinary number of requirements for completing a project" (Miles et al., 2000 p. 8). The developer's role as "creator, promoter, negotiator, manager, leader, risk manager and investor" is not only dynamic but continuously shifting. The property development process requires the ability to apply multi-dimensional decision making - something that can often only be described, but not taught. Similar comparative viewpoints depicting and describing the process and principles involved in property development have also been found in publications such as those by Beeny (2004); Beyard & O'Mara (1999); Bruce-Radcliffe (1996); Brueggeman and Fisher (2005); Cadman and Topping (1995); Cloete (2004); Collier, Collier and Halperin (2002); Forlee (2004); Forlee (2005); Thomsett (2000); Waterhouse (1991); Weis (2005); Woodson (2005); Wilkinson and Reed (2008); and Zuckerman and Blevins (2003). A common theme emerges from all these studies: the development process is an integrated process linking distinct phases or components that sequentially provide a blueprint for action and for unlocking real estate value.

2.1 Location Studies and Site Selection

The age-old adage location, location, location, is frequently cited in studies of real estate development with respect to site selection. West (1994) argues that for many years developers have believed that if the location was good, development success would be a given. However more recently, the cyclical oversupply of commercial office, industrial and retail space at certain stages of the economic cycle requires "analysis of several factors, only one of which is location". These other factors must include: (i) Location of competitive properties, (ii) Current and future market expansion patterns, (iii) Economic growth within the market, (iv) Regulatory and legal issues, (v) Site characteristics, (vi) Special local conditions, (vii) Cultural views, (viii) Trends (West, 1994, p. 5). Cadman and Topping (1995) argue a similar view in that the first step in finding a development site is to establish a strategy defining the aims, nature and area of research generally aligned to the business plan of the company. This is a necessary prerequisite prior to selection of appropriate development sites. The importance of local market knowledge and of the way development projects are financed is important in this process. A similar view is expressed by Fisher (2007, p. 51): "Finding good locations is a process of elimination".

Whipple emphasises the importance of the "space relationships which exist between a site and the whole assemblage of uses and people making up an urban area" (Whipple, 1995, p. 25). This is a common view in studies examining location analysis for property development. Fenker (1996, p. 8) defines site evaluation as a process, not a result: "the measurement of the

relative quality of a parcel of real estate, compared to other pieces of real estate, using all of the objective and subjective information available" . Further, this study suggests four perspectives on site evaluation: (i) National/international perspective: the decision to be in a specific city or market comes before any specific site decision, (ii) Market perspective: this refers to the plan for developing the market in a specific town, city or metropolitan statistical area, (iii) Trade area perspective: the geographic area that contains 70 to 80 per cent of the customers, (iv) Site perspective: the decision about a specific site for the development.

2.2 Market Research and Property Markets

It is widely argued that both *market research* and *marketing research* are integral to the success of real estate development projects. What is the distinction between these two terms? The American Marketing Association, cited in Ghyoot (1996, p. 2), defines market research as "the measurement of the extent of the market and the determination of its characteristics", and marketing research as "the systematic gathering, recording and analysing of data about problems relating to the marketing of goods and services". The two definitions show the distinction between *market research* being a concept limited to the property developers market, and *marketing research* – a broader term that could include matters such as product design, performance of salespeople and even pricing practices (Ghyoot, 1996, p. 2).

Zuckerman and Blevins (2003, p. 20) submit that without market research, projects will be developed intuitively, resulting in a risky venture. Only when the market and its demands are known, will we be able to have the basis for an effective property development plan. Miller and Geltner (2005, p. 515) argue that through market research, the analyst (or developer) is "looking for sources of success; that is, sources of demand for the concept" (Miller & Geltner, 2005, p. 515).

Efficient market research produces, for property developers, the information required to make effective marketing decisions. This distinction is emphasised in numerous studies. Kahr and Thomsett (2005 p. 2) argue: "Analysis of local economies: studies the fundamental determinants of the demand for all real estate in the market. Market analysis: studies the demand for and supply of a particular property type in the market. Marketability analysis: examines a specific development of property to assess its competitive position in the market." Gause (1998, p. 33) emphasises that while people use "the term 'feasibility analysis' to refer to both market analysis and financial feasibility, the two analyses are separate and distinct. Together, these analyses are referred to as 'project feasibility analysis'." The market analysis is cited as not only a report that is generated at some critical juncture in the development process – it needs to be continually re-examined and integrated with all other components of the property development process. A similar view is expressed by Beyard and O'Mara (1999, p. 39–40), in a study on shopping centre development. It is submitted that a specialist in the retail field should conduct the market analysis.

Miles et al. (2000, p. 209-211) argue that, in property development, good ideas flow from specific sources with specific knowledge of the industry and its markets. Property developers need to understand the regulatory and socio-economical environment, and, most importantly, potential clients. The importance of this connection between market research and development ideas is emphasised. It is suggested that, to limit risk, developers must pay special attention to “assessing their position in the marketplace as well as to the realism of their goals and objectives” (Miles et al., 2000, p. 209). It is also argued that structured research “provides the discipline, finds the logic, helps set the criteria and to some extent even prompts the intuition by which people respond creatively to events occurring around them. Most successful real estate developers have at one time or another engaged in careful, systematic study of specific markets and property types” (Miles et al., 2000, p. 211).

An additional local dimension for market analysis is developed in a study by Guy and Henneberry (2000, p. 2399). They argue that, although researchers in the property sector tend to adopt positivist methodologies, which emphasise the application of rational decision-making techniques by utility –maximisers within a mainstream economics paradigm, the argument is made that research offers a partial view of its subject from a particular perspective and that it is necessary to develop an “understanding of property development processes which combines a sensitivity to the economic and social framing of development strategies with a fine-grain treatment of the locally social responses of property actors” (Guy & Henneberry, 2000, p. 2399).

2.3 Feasibility Principles, Design Development and Financial Analysis

In 1970 Graaskamp wrote his classic *Guide to Feasibility Analysis* in which he states that “a real estate project is feasible when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for fit to a context of specific constraints and limited resources” (Graaskamp, cited in; Miles et al., 2000, p. 338). It is widely argued that each phrase of Graaskamp’s long definition is important in that:

- i) Feasibility never demonstrates certainty – a project is feasible when it is likely to meet its goals.
- ii) Feasibility is determined by satisfying objectives that must be identified prior to commencement by all participants to the process.
- iii) The selected course of action and testing it for fit included in the definition, imply that logistics and in particular timing are important.
- iv) The selected course of action is tested for fit in the context of legal and physical constraints.

Further, Miles et al. (2000) emphasised that the Graaskamp definition of feasibility, “goes far beyond the simple idea of value exceeding cost. When the word ‘constraints’ is pushed into the ethical dimension (as suggested by Graaskamp), then both personal and social ethics as well as formal, legal and physical constraints must also be satisfied” (Miles et al., 2000, p. 338). A similar argument is found in a study by Guy and Henneberry (2002a). The

feasibility study is thus the formal process to determine whether a project is or is not viable, based on more determinants than just financial viability. The word “likelihood” in the Graaskamp definition “makes explicit the importance of risk” (Graaskamp, cited in Wurtzebach et al., 1994, p. 678). The feasibility study must, from the beginning, address these risks.

A number of authors suggest that it is important to note the distinction between overall feasibility and financial feasibility. Cloete (1996) submits that the last phase of the feasibility study is to determine whether a project will satisfy the financial requirements of the developer. Frej (2001) ably describes the financial feasibility analysis as “a systematic approach to determining the profitability of a proposed real estate investment. It allows the team to ascertain whether the development will generate enough cash flow to pay the debt service and provide an adequate return to its investors” (Frej, 2001, p. 39).

The recurring theme through numerous authors is that all feasibility components are part of a continuous and iterative process of exploration and research. Ling and Archer (2005), argue that a financial feasibility analysis needs to be supported by further market research; “even if a development appears financially feasible, it still depends on the land being free of soil problems, environmental concerns, ecological complications, seismic concerns, hydrological concerns, and anthropological or historical sensitivities” (Ling & Archer, 2005, p. 648).

What then can be assumed as the “necessary ingredients” that have to be present in the financial feasibility analysis? Cloete (1996, p. 7) submits that the financial feasibility study consists of five steps: (i) estimate total capital outlay for the project (ii) estimate total net project income (iii) develop a cash flow projection for the development period (iv) estimate profitability of the project and evaluate against investment objectives (v) complete a risk analysis on the proposed project. Graaskamp, frequently cited by numerous authors (see Miller and Geltner (2005, p. 517)), refers to the *front door* and *back door* techniques of evaluating financial feasibility. The *front door* technique is applied once cost estimates are known, the developer calculates the net income which a property must generate to satisfy the equity and debt requirement of the developer. The *back door* technique is applied when revenue estimates are known. The developer then calculates the maximum amount of acquisition and construction costs that can be put into the project and remain viable.

In analysing feasibility principles and financial analysis, the concept of risk and more specifically property development risk must be examined. The risk management process is defined as “... a series of events conducted with one purpose in mind – to reduce the likelihood that a particular event will happen” (Patton & Ryan, 2007, p. 26). Risk is one of the key factors influencing property investment decisions. In financial analysis it is the likely variability of future returns from a given asset. The more variable the assumptions made on expected returns, the riskier the property investment. In a study by Viruly

(1999) a summary of important risk factors for property development is provided. These include:

- Business risk: risk due to fluctuations in economic activity and factors affecting the variability of income produced by a property.
- Financial risk: the use of debt financing and risks attached to excessive gearing.
- Liquidity risk: the risk when there is a lack of consistent and continuous buoyancy in the market place.
- Inflation risk: income from the property must increase sufficiently to counter upward trends in inflation.
- Management risk: all properties need to be managed properly.
- Legislative risk: amendments to numerous regulations, taxes, zonings and other restrictions imposed by government can adversely jeopardise property developments.
- Environmental risk: the value of real estate can be affected by changes in the environment or sudden awareness that the existing environment is potentially hazardous (Virully, 1999, p. 30-32).

Within the Australian context, Newell and Steglick (2006, p. 30) surveyed leading property developers in Australia, and identified the pre-construction phase of the property development process as having the highest overall risk. The pre-construction risk factors, rated from highest to lowest, were:

- Environmental: heritage, ecology, contamination.
- Approvals: zoning, compliance, conditions, developer contributions.
- Political: lack of support from local community, council, government.
- Experience with type of development, ability to manage development.
- Market: research, location, portfolio diversification.
- Title: land title problems and encumbrances.
- Consultants: design quality, reliability of consultant's report.
- Physical: difficult land form and existing improvements.
- Feasibility: assumptions, financial performance benchmarks, risk analysis.
- Infrastructure: availability of services, water, traffic, social infrastructure (Newell & Steglick, 2006, p. 30).

3.0 The Empirical Study

To conduct the empirical research and determine the sample group, a consultation was held with the Queensland division of the Property Council of Australia (PCA). A representative sample group of twenty Queensland based property developers was compiled from members registered with the Queensland division of the PCA. The property developers were selected according to the following criteria; (i) all property developers had to be located in Queensland, (ii) all property developers were subscribed members of the Queensland division of the PCA. Contact was made with all the participants of whom twelve indicated their initial willingness to participate.

After identifying the important themes from our literature review, a preliminary questionnaire was designed to obtain as much information as possible on the application of common principles and characteristics of the property development process as identified through our literature review. The clarity, layout and coding of the questionnaire was discussed with a statistician in order to ensure that results obtained could be efficiently processed and analysed to meet study objectives. The preliminary questionnaire was completed by two independent Queensland based property developers outside the sample group to ensure that completion of the questionnaire was both time efficient and user friendly. This process resulted in the final questionnaire which is provided in full as Appendix A. The final questionnaire consisted of a set of twenty five questions, with five sections focusing on:

- A. General Introductory Information
- B. Property Development Principles and Process
- C. Location Studies and Site Selection
- D. Market Research, Property Markets and Feasibility Principles
- E. Design Development and Financial Analysis

We provide a summary of the questions and review the important results from each of these sections below.

Section A - General Introductory Information

The general objectives of this section were:

- Q1. To determine the nature of the respondent's company and whether the participant is listed on the Australian Stock Exchange or operates as a private incorporated entity.
- Q2. Identify the States and territories of Australia in which the participant conducts property development activities.
- Q3. To determine if the participant conducts property development activities outside of Australia.
- Q4. To determine the seniority and position of the participant within the hierarchy of the company.
- Q5. Ascertain the number of years of experience of the participant in the property development industry.

The results in this section can be summarised as follows:

- The majority of the respondents (55%) were private incorporated entities while 45% were listed on the Australian Stock Exchange.
- All respondents in the sample group conduct property development activities in Queensland with 55% also being active in the states of New South Wales and Victoria.

- Property development activities are conducted in all other states of Australia by at least two of the sample group participants.
- The majority of the respondents (64%) indicated that they also operate in countries outside of Australia while the activities of the remaining 36% are limited to Australia.
- The majority of respondents who completed the questionnaire were in top management (64%) with the remaining 36% in middle management.
- The time which respondents who completed the questionnaire were actively involved in the business of property development ranged between 4 and 40 years with an average of 18.5 years.
- No significant difference between respondents working in listed and unlisted companies were established.

Section B - Property Development Principles and Process

The general objectives of this section were:

- Q6. To identify and determine the extent of the roles a property developer needs to fulfil during the property development process.
- Q7. To identify consultants utilised during the pre-construction property development process.
- Q8. To determine the application of a structured framework and phased approach to pre-construction property development activities and go/no-go decision making activities when evaluating opportunities.
- Q9. To determine why a structured and phased approach to pre-construction property development activities is not applied.
- Q10. To determine and define the application of specific pre-construction property development framework principles and key performance areas in property development activities.

The results in this section can be summarized as follows:

- All roles identified in the study as "conductor of an orchestra" were substantially applied by all respondents whether a listed or unlisted company. The most applicable roles were deemed to be those of *negotiator* and *risk manager*, followed by *promoter* and *leader*. Listed companies tend to see the property developer as less of an *entrepreneur* and more a *manager*.
- Property developers use all the consultants identified in the study, some to a lesser extent. All respondents made use of architects, quantity surveyors, town planners and geo-technical engineers with all but one using land surveyors and civil engineers. The results were broadly comparable for listed and unlisted companies.

- All companies apply a structured framework and phased approach to pre-construction and go/no-go decision making activities when evaluating development opportunities.
- All pre-construction property development principles and key performance areas identified in the study were applied. The three principles used most were: (i) analysing appropriate zonings; (ii) testing financial feasibility of the idea; and (iii) the preliminary scheme. The least used principles identified were: (i) political and legal analysis; and (ii) verifying objectives and testing alternatives.
- The results were broadly comparable for listed and unlisted companies, with the only meaningful differences pertaining to determining goals and philosophies and implementation plans. Listed companies determined goals and philosophies to a lesser extent than unlisted companies while implementation plans are used to a greater extent by listed companies.

Section C - Location Studies and Site Selection

The general objectives of this section were:

- Q11. To identify and determine the extent to which specific identification factors are applied and analysed when identifying the preferred location for a property development.
- Q12. To determine the application of land use evaluation models in location determination.
- Q13. To determine support for the view that location and site selection cannot be done in isolation.
- Q14. To identify and determine the extent of the application and analysis of site specific evaluation factors that influence site suitability.
- Q15. To identify the three most important site evaluation factors that influence site suitability.

The results in this section can be summarized as follows:

- All companies apply and analyse factors determined in the study, when identifying the preferred location for a property development. The factors used most by all companies were (i) regulatory and legal issues, (ii) site characteristics, (iii) current and future market expansion patterns and (iv) trends in property development. The principle used least was *cultural views* on the location. Listed companies were found to value the national/international perspective higher than unlisted companies. Unlisted companies take greater cognisance of the location of the competitive properties.
- Only one respondent used three of the eight land use models identified in the study, when deciding upon a preferred location for a property development. None of the other participants used any of the eight land

use evaluation models identified. The vast majority of companies support the view that location and site selection cannot be viewed in isolation, but forms part of a coherent whole.

- Most site specific evaluation factors were analysed and used by participating companies. The factors utilised by all companies are; *legal documentation* and *physical features* while the vast majority support *real estate market trends* and *parking*.
- Factors considered least important are: amenities and services; social characteristics; and links with other industries. No significant differences were found between listed and unlisted companies.
- Results from the respondents who indicated that they always use specific evaluation factors identified the following three factors, which are deemed to be the most important:
 - (i) Land (cost of land and view or scenic amenity)
 - (ii) Economic characteristics *(the highest individual rating)
 - (iii) Legal documentation

Section D - Market Research and Property Markets

The general objectives of this section were:

- Q16. To determine whether a structured framework approach is applied to market research.
- Q17. To define the reasons why a structured framework approach is not applied to market research.
- Q18. To identify and determine the extent of the application of specific market and marketability analysis factors when conducting market research.
- Q19. To determine and define the characteristics of the property market as applied by the participants.
- Q20. To define and determine the extent of the application of specific sources of property information when conducting market research and analysing the property market.

The results obtained can be summarised as follows:

- The majority (82%) indicated that their companies apply a structured framework approach to market research. The 18% of respondents who responded in the negative cited the following two reasons:
 - (i) Independent research consultants are employed on an ad-hoc basis.
 - (ii) Developments undertaken are pioneering in nature and market researchers are viewed as too conservative to make a positive contribution.
- Property developers usually and adequately apply and analyse all market and marketability analysis factors when conducting market research. The factors applied most are *site analysis* and the *selection*

of the target market respectively with the least applied factors being *determining national and international economic trends* and *purchasing power analysis*. Listed companies tend to make greater use of national and international trends, supply and demand analysis and preliminary marketing and management strategies.

- Among the sample group there was a widely held belief that the property market is far less organised than other institutions. Research results are difficult to assemble, making the study of trends difficult. Most projects are user specific and therefore cannot be mass marketed.
- The vast majority agreed that the property market is highly differentiated. Constraints on supply are variable between regions. Market activity is determined by economic, social, political and legal activities. The market is determined by supply and demand factors and, as such, is cyclical in nature.
- The majority disagreed that registration of transfer documentation is a complex process or that buyers and sellers are spatially separated.
- The sources of information valued most significantly for market research are demographic data sources, property valuers, newspapers and magazines and market research companies. Property management companies and psychographic research sources are least utilised.

Section E - Feasibility Principles, Design Development, Financial Analysis

The general objectives of this section were:

- Q21. To determine whether an integrated framework approach to feasibility analysis is applied in determining project viability and formulating a strategy for property development.
- Q22. To determine the reasons why an integrated framework approach is not applied in determining project viability.
- Q23. To identify and determine the extent to which specific financial feasibility framework factors are analysed and applied.
- Q24. To determine the application and analysis of specific components when completing a financial feasibility analysis for a property development.
- Q25. To determine the extent to which specific discounted cash flow analysis methods and other key financial ratios are applied when conducting financial feasibility studies.

The results obtained can be summarised as follows:

- All respondents follow an integrated framework to feasibility analysis in determining viability of projects and in formulating strategies for property development.
- The majority of companies apply and analyse most financial feasibility framework factors identified. Factors utilised most included physical and design factors, financial feasibility analysis, measurement and identification of risk for land-use decisions. The factor utilised less frequently was socio-political feasibility factors.
- Results relating to the application of discounted cash flow analysis (DCF) methods and other financial ratios showed that standard decision rule techniques are widely used. The evaluation criterion most widely used is the Internal Rate of Return (IRR) followed by the Development Yield. The two least used criteria are the Operating Efficiency Ratio (OER) and Gross Rent Multiplier (GRM).

4.0 Conclusions and Recommendations

This paper seeks to examine and critically assess the application of pre-construction property development principles and processes. The study addresses the fundamental problem as to whether property developers apply sound property development principles and process in order to contribute to increased effectiveness and productivity to their property development activities. In summary, our results demonstrate that in general, developers apply a structured framework towards the application of pre-construction development principles. It is apparent that there exists some variation in principles and process employed. It appears that this can largely be explained by variation in the types of development activities engaged in by various development firms.

Our results lead to some recommendations, particularly for the education process relating to property development. It is evident that academic institutions and the property development industry should ensure that content covering the science and important principles of entrepreneurship be included in appropriate training courses. The complexity of the property development process requires this. Property development is in many ways another form off entrepreneurship in that it involves "creating the future", not merely managing construction tasks.

In addition, it is considered desirable that academic institutions and the development industry should ensure that students and practitioners of property development are taught the importance and relevance of social characteristics in target markets. The complexity of societies as well as the influence of culture and ethnicity on the property development industry is identified as being of key importance. The era of globalisation with "no boundary states" necessitates this, while a better understanding of the way various societies function will invariably result in more opportunities becoming prevalent.

It is considered desirable that professional and academic institutions as well as the industry involved with the training and continuing professional

education of consultants in property analysis and market research caution against excessive conservatism. Consultants in the property development industry will only remain relevant if professionally independent and well balanced contributions are made to an entrepreneurial and pioneering industry. In this regard, it is considered desirable that academic institutions, professional and industry governing bodies ensure that education of property development practitioners incorporate practical real life case study analysis of development projects balanced with appropriate academic theory. The emphasis should fall on case studies and projects designed to identify the opportunities and challenges that arise in the interface between theory and practice. This will invariably require further extensive research that involves both academics and practitioners.

References

- Beeny, S. (2004). *Property ladder: The developer's Bible*. Cassell Illustrated, London.
- Beyard, M.D. & O'Mara, W.P. (1999). *Shopping center development handbook*. 3rd Edition. The Urban Land Institute (ULI), Washington, D.C.
- Bruce-Radcliffe, G. (1996). *Practical property development and financing*. FT Law & Tax, London.
- Brueggeman, W.B. & Fisher, J.D. (2005). *Real estate finance and investment*. 12th edn. McGraw-Hill Irwin, New York.
- Cadman, D. & Topping, R. (1995). *Property development*. 4th edn. Spon Press, London.
- Cloete, C.E. (1996). *Property development*. Volume 1. The South African National Property Education Committee. Sandton.
- Cloete, C.E. (Ed.) (2004). *Principles of property valuation*. 2nd edn. The South African National Property Education Committee, Sandton.
- Collier, N.S., Collier, C.A. & Halperin, D.A. (2002). *Construction funding: the process of real estate development, appraisal and finance*. 3rd edn. John Wiley & Sons, Inc., New York.
- Fenker, R.M. (1996). *The site book. a field guide to commercial real estate evaluation*. Mesa House Publishing, Fort Worth, Texas.
- Fisher, S.D. (2007). *The complete guide to real estate options : what smart investors need to know – explained simply*. Atlantic Publishing Group, Inc., Ocala, Florida.
- Forlee, R. (2004). *An intelligent guide to Australian property development*. Wrightbooks, Milton.
- Forlee, R. (2005). *Australian residential property development: a step-by-step guide for investors*. Wrightbooks, Milton.
- Frej, A. (Ed.) (2001). *Business park and industrial development handbook*. The Urban Land Institute (ULI), Washington, D.C.
- Gause, J.O. (Ed.) (1998). *Office development handbook*, 2nd edn. The Urban Land Institute (ULI), Washington, D.C.
- Geltner, D. & Miller, N.G. (2007). *Commercial real estate analysis and investment*. South-Western Publishing, Mason, Ohio.
- Ghyoot, V.G. (1996). *Property marketing research*. Property education series. The National Property Education Committee, Technicon SA, Florida.

- Graaskamp, J.A. (1970). A Guide to feasibility analysis. Chicago Society of Real Estate Appraisers cited in Wurtzebach, C.H., Miles, M.E. & Cannon, S.E., Modern Real Estate, 5th edn. John Wiley & Sons, Inc., New York.
- Guy, S. & Henneberry, J. (2000). Understanding urban development processes: integrating the economic and the social in property research. Urban Studies; December 2000. Vol. 37, No. 13, p. 2399-2416
- Guy, S. & Henneberry, J. (2002a). "Bridging the divide?" Complementary perspectives on property. Urban Studies. Edinburgh, July 2002. Vol. 39, No. 8, p. 1471-1478.
- Kahr, J. & Thomsett, M.C. (2005). Real estate market valuation and analysis. John Wiley & Sons, Inc., Hoboken, New Jersey.
- Ling, D.C. & Archer, W.R. (2005). Real estate principles: a value approach. McGraw-Hill Irwin, New York.
- Miles, M.E., Berens, G. & Weis, M.A. (2000). Real estate development: principles and process, 3rd edn. The Urban Land Institute (ULI), Washington, D.C.
- Miller, N.G. & Geltner, D.M. (2005). Real estate principles for the new economy, South-Western, Mason, Ohio.
- Newell, G. & Steglick, M. (2006). "Assessing the importance of property development risk factors". Pacific Rim Property Research Journal. March 2006. Vol. 12 Iss. 1. pp. 22-37.
- Patton, W. & Ryan, J. (2007). Making hard cash in a soft real estate market. John Wiley & Sons, Inc., New Jersey.
- Peiser, R.B. & Frej, A.B. (2003). Professional real estate development: The ULI guide to business. 2nd edn. The Urban Land Institute (ULI), Washington, D.C.
- Pyhrr, S.A., Cooper, J.R., Wofford, L.E., Kapplin, S.D. & Lapidus, P.D. (1989). Real estate investment. Strategy analysis decisions, 2nd edn. John Wiley & Sons, Inc.
- Schmitz, A. (Ed.) (2004). Residential development handbook. 3rd edn. The Urban Land Institute (ULI), Washington, D.C.
- Squirrel, M. (1997). Readings in property economics. The Australian Institute of Valuers and Land Economists, Deakin, ACT.
- Thomsett, M.C. (2000). Getting financing & developing land. Craftsman Book Company, Carlsbad, CA.
- Viruly, F. (1999). Property economics & risk analysis. Paper presented at the SAPOA Property Development Programme. Graduate School of Business. Cape Town University, Cape Town.
- Waterhouse, M.D. (1991). "Principles of the real property development process", Economic Development Review, Fall, pp. 25-28.
- Weis, M.B. (2005). Secrets of a millionaire real estate developer. Dearborn Trade Publishing, Chicago.
- West, S. (1994). "A guide to development success and profitability", Cost Engineering, Morgantown. Jul 1994. Vol. 36, Iss. 7. pp 19.
- Whipple, R.T.M. (1995). Property valuation and analysis. The Law Book Company Limited, Sydney.
- Wilkinson, S. & Reed, R. (2008). Property Development. 5th edn. Routledge, Abingdon, Oxon.
- Woodson, R.D. (2005). Be a successful residential land developer, 2nd edn. McGraw-Hill Inc., New York.

Wurtzebach, C.H., Miles, M.E. & Cannon, S.E. (1994). Modern real estate. 5th edn. John Wiley & Sons Inc. New York.

Zuckerman, H.A. & Blevins, G.D. (2003). Real estate development. Workbook and manual. Aspen Publishers Inc., New York.

Appendix A: The Questionnaire Used for the Empirical Study

**A CRITICAL ASSESSMENT OF PRE-CONSTRUCTION PROPERTY
DEVELOPMENT PRINCIPLES AND PROCESS
IN QUEENSLAND, AUSTRALIA**

EMPIRICAL QUESTIONNAIRE**TERMINOLOGY**

The following offers a brief explanation of certain terms used throughout the questionnaire.

- **Pre-construction property development principles and process:** Key performance areas and principles which form part of the property development process prior to construction activities. It is those activities included in the period from first identifying the development site to the start of construction.
- **Top management:** That relatively small group of members who control the organization and promote effectiveness, and with whom rests the final authority and responsibility for the execution of management procedures (includes board members, executive directors, managing director and/or chief executive officer).
- **Middle management:** Those persons who are primarily responsible for the implementation of business plans and strategies determined by top management.
- **Operational management:** Those persons whose management task centres around daily office activities. Operational management is involved mostly in short-term planning and implementing the plans of middle management.

SECTION A: GENERAL INFORMATION

NAME OF COMPANY	
INFORMATION OFFERED BY	
OFFICIAL TITLE	
TELEPHONE	
FAX	
MOBILE	
EMAIL	

INSTRUCTIONS

1. The symbol ▲ will be used throughout to give supporting information about questions.
2. Unless stated otherwise, please indicate your chosen alternative by means of a cross (X) in the relevant space as indicated in the example below:

Example of a question:

Please indicate your position within one of the levels of management. If your position falls within the category of top management, mark with an (X) in the relevant block as indicated below:

Top management	X
Middle management	2
Operational management	3

1. Please indicate whether your company is listed on the Australian Stock Exchange (ASX) or operates as a private incorporated entity.

	Yes	No
Listed company	1	2
Private incorporated company	1	2
Other entity: Please describe		

2. Please indicate in which states and territories of Australia or internationally outside of Australia your company conducts property development activities.

	Yes	No
New South Wales	1	2
Victoria	1	2
Queensland	1	2
Western Australia	1	2

	Yes	No
South Australia	1	2
Tasmania	1	2
Australian Capital Territory (ACT)	1	2
Northern Territory	1	2

3. Does your company conduct property development activities in other countries outside of Australia?

Yes	No
1	2

4. Please indicate your current position within the hierarchy of your company. (Select only one alternative)

Top management	1
Middle management	2
Operational management	3
Other: Please describe	4

5. How long have you been actively involved in a business capacity in the property development industry?

	Years
--	-------

SECTION B : PROPERTY DEVELOPMENT PRINCIPLES AND PROCESS

6. A property developer is often described as the “conductor of an orchestra”. In your opinion, how applicable are the following roles a property developer needs to fulfil during the property development process?

	High	Medium	Low
Entrepreneur	3	2	1
Creator	3	2	1
Promoter	3	2	1
Negotiator	3	2	1
Manager	3	2	1
Leader	3	2	1
Risk manager	3	2	1
Investor	3	2	1
People manager	3	2	1

7. Indicate below which consultants are utilised by your company during the pre-construction property development process.

	Yes	No
Development manager and/or project manager	1	2
Architect	1	2
Building designers	1	2
Quantity survey/building estimator	1	2

	Yes	No
Town planners	1	2
Structural engineer	1	2
Civil engineer	1	2
Electrical engineer	1	2
Mechanical engineer	1	2
Land surveyor	1	2
Real estate agent	1	2
Property valuer	1	2
Finance broker	1	2

Advertising and marketing agent	1	2
Leasing agent	1	2
Building certifier	1	2
Insurance broker	1	2
Property manager	1	2
Geo-technical engineer	1	2
Environmental consultant	1	2
Conveyance/settlement agent	1	2
Landscape architect	1	2
Interior designer	1	2
Accountant	1	2
Solicitor	1	2
Other: Please describe	1	2

8. Does your company apply a structured framework and phased approach to pre-construction property development activities and go/no-go decision-making activities, when evaluating opportunities?

Yes	No
1	2

9. If your answer is no to question 8 above; please indicate why you do not apply a structured and phased approach to pre-construction property development activities.

10. If your answer is yes to question 8 above; please indicate how often you apply the following pre-construction property development principles and key performance areas in the property development activities of your company.

	Always	Sometimes	Never
Strategic analysis			
• Vision	3	2	1
• Determining goals and philosophies	3	2	1
• Establishing criteria	3	2	1
• Conceptualising idea	3	2	1
• Inception of idea	3	2	1
Market research and property markets			
• Market and competitive analysis	3	2	1
Location studies and site selection			
• Identifying and analysing appropriate locations and development sites	3	2	1
• Analysing appropriate zonings	3	2	1
• Procuring control of a development site	3	2	1

Feasibility principles, design development and financial analysis			
• Physical, technical and design analysis	3	2	1
• Political and legal analysis	3	2	1
• Verifying objectives and testing alternatives	3	2	1
• Planning and engineering analysis	3	2	1
• Testing financial feasibility of idea	3	2	1
• Refinement of an idea	3	2	1
• Preliminary scheme	3	2	1
• Final scheme	3	2	1
• Implementation plan	3	2	1
Formal commitment to proceed			

SECTION C : PROPERTY DEVELOPMENT : COMPONENTS AND KEY PERFORMANCE AREAS : LOCATION STUDIES AND SITE SELECTION

11. To what extent does your company apply and analyse the following factors when identifying the preferred location for a property development?

	Always	Sometimes	Never
Market selection			
• National/international perspective: The decision to be in a specific city, market or country	3	2	1
• Inter-urban relationship between towns and cities in regional context	3	2	1
• Intra-urban relationship between the different types of functions and locations for land uses	3	2	1
• Current and future market expansion patterns	3	2	1
• Trends in property development	3	2	1
Area analysis			
• Economic growth within the market	3	2	1
• Cultural views on the location (ethnic and racial character of the inhabitants)	3	2	1
• Location of competitive properties	3	2	1

	Always	Sometimes	Never
Site evaluation			
• Site characteristics (topography, accessibility, visibility and cost)	3	2	1
• Regulatory and legal issues	3	2	1
• Special local conditions (age, population, density, socio-economic status and standard of living)	3	2	1

12. Does your company apply any of the following land use evaluation when deciding upon a preferred location for a property development?

	Yes	No
Christaller central place model	1	2
Losch central place theory (CPT)	1	2
Theory of urban hierarchy : Losch model enriched by Christaller	1	2
Land yield theory (Von Thunen's land rent theory)	1	2
EW Burgess concentric zone model	1	2
Homer Hoyt's sector model ▲ Central business district ▲ Wholesale and light industries ▲ Low grade residence ▲ Medium grade residence ▲ High grade residence	1	2
Ullman and Harris multiple centre theory ▲ Flat dwelling ▲ Single dwelling ▲ Heavy industries ▲ Decentralised business centre ▲ Community zone	1	2
Central pattern of urban land use (the modern Australian city)	1	2

13. Does the location selection strategy of your company support the view that location and site selection cannot be done in isolation, but form a coherent whole?

Yes	No
1	2

14. Please indicate how often your company analyses the following site specific evaluation factors that influence the suitability of a specific site, which may contribute to increased effectiveness, productivity and profitability of a development.

	Always	Sometimes	Never
Legal documentation : legal use of the site (zoning), the title to the property and all governing authorities	3	2	1
Social characteristics : crime rate, demographic trends and spending habits	3	2	1
Governmental controls : local building codes, environmental controls and local government attitudes towards governmental development	3	2	1

	Always	Sometimes	Never
Economic characteristics : economic information on the state, city and neighbourhood economies, real estate tax rates, cost of services, insurance rates, unemployment rates, new construction activity and available land, local bankruptcy rates and level of housing finance	3	2	1
Real estate market trends : rental rates, vacancy levels, recent sales and new construction activity	3	2	1
Physical features : size, dimensions, shape, exposure, soil, topography and hydrology	3	2	1

Utilities : water, sewerage, electricity, telecommunications, gas and oil	3	2	1
Transportation : linkages, traffic patterns and accessibility	3	2	1
Parking : spaces required by zoning and market	3	2	1
Location : proximity to amenities, schools, churches, recreation facilities and market perception of location	3	2	1
Environmental impact : adverse impacts on the environment	3	2	1
Government services: availability and proximity to police and fire services, garbage collection and the impact of fees and property taxes	3	2	1
Political and local attitudes : defensive, neutral and offensive attitudes of the local community to the development of the site	3	2	1
Land : cost of land and view or scenic amenity	3	2	1
Demand : population growth, income distribution and employment growth	3	2	1
Supply : existing and planned supply, competition and amenities offered by competitors	3	2	1
Development impact fees : bulk service charges payable to local government	3	2	1
Adjacent uses : adjacent uses to the site should be comparable with the project	3	2	1
Amenities/services : the availability of nearby amenities and services	3	2	1
Links with other industries : certain industries tend to cluster together	3	2	1

15. If your answer is Always to a minimum of three of the evaluation factors in question 14 above; please indicate which of these three factors you deem to be the most important, in order of preference.

Evaluation factor	
1.	1
2.	2
3.	3

4. Not applicable : less than three items were indicated as <u>Always</u>	4
---	---

SECTION D : PROPERTY DEVELOPMENT : COMPONENTS AND KEY PERFORMANCE AREAS : MARKET RESEARCH AND PROPERTY MARKETS

16. Does your company apply a structured framework approach to market research?

Yes	No
1	2

17. If your answer is no to question 16 above, please indicate why you do not apply a structured approach to market research.

--

18. To what extent does your company apply and analyse the following market and marketability analysis factors when conducting market research?

	Always	Sometimes	Never
Market analysis (macro market)			
Determine national and international economic trends and monetary and fiscal impacts on real estate	3	2	1
Select the target market	3	2	1
Delineate market and trading area for intended use	3	2	1
Perform supply and demand analysis	3	2	1
Project future rent schedules, prices and space needs	3	2	1
Purchasing power analysis	3	2	1
Demographic, employment, social, cultural and technological trends	3	2	1
Marketability analysis (micro market)			
Regional and urban analysis	3	2	1
Neighbourhood analysis	3	2	1
Site analysis	3	2	1
Preliminary marketing and management strategy	3	2	1
Competitive analysis	3	2	1

	Always	Sometimes	Never
Estimates of space needs, market absorption rates, gross income, operational costs and vacancy rates	3	2	1

19. Do you agree/disagree with the following characteristics of the property market?

	Agree	Disagree
As an institution, it is far less organised	1	2
Buyers and sellers are spatially separated	1	2
Results of transactions are difficult to assemble, making the study of trends difficult	1	2
Registration of transfer documentation is complex	1	2
The property market is highly differentiated (it serves several needs)	1	2
Constraints on supply are more variable (supply is not controlled by the developer but by councils and political entitlements)	1	2
Market data is less structured and much less certain	1	2
Projects are user specific and cannot be mass marketed	1	2
Market activity is determined by economic, social, political and legal activities and constraints	1	2
The market is determined by supply and demand factors and is as such, cyclical of nature	1	2

20. To what extent are the following sources of property information utilised by your company when conducting market research and analysing the property market?

	Always	Sometimes	Never
Demographic data sources	3	2	1
Psychographics : portraying household lifestyles	3	2	1
Consumer surveys	3	2	1
Quantitative research	3	2	1
^ Mail surveys			
^ Telephone surveys			
^ Internet surveys			
^ In person surveys			
^ Qualitative research conducted with a small number of respondents			
^ Analysing supply			
Mapping the competition	3	2	1
Real estate agents	3	2	1
Driving through the neighbourhoods	3	2	1
Newspapers and magazines	3	2	1
Property management companies	3	2	1
Property valuers	3	2	1
Local associations	3	2	1
Market research companies	3	2	1
The valuer general's office	3	2	1
The internet	3	2	1

SECTION E : PROPERTY DEVELOPMENT : COMPONENTS AND KEY PERFORMANCE AREAS : FEASIBILITY PRINCIPLES, DESIGN DEVELOPMENT AND FINANCIAL ANALYSIS

21. Does your company follow an integrated framework approach to feasibility analysis in determining the viability and formulating a strategy for a property development?

Yes	No
1	2

22. If your answer is no to question 21 above, please indicate below why you do not apply a structured approach to the feasibility analysis process.

23. If your answer is yes to question 21 above, please indicate below the extent to which your company analyses and applies the following financial feasibility framework factors.

	Always	Sometimes	Never
Ownership structure	3	2	1
Land-use decision (market and economic study)	3	2	1
Aesthetic and ethical constraints	3	2	1
Regulatory, legal and political constraints	3	2	1
Physical and technical constraints as well as alternative solutions	3	2	1
Determining dominant objectives why feasibility study is conducted	3	2	1
Market analysis and feasibility	3	2	1
Socio-political feasibility (economic feasibility, environmental impact and sociological desirability)	3	2	1
Identifying opportunities which are consistent with above objectives	3	2	1
Gauge performance capacities	3	2	1
Measure or identify risks	3	2	1
Market segmentation to identify specific targets	3	2	1
Physical and design analysis of development project	3	2	1

	Always	Sometimes	Never
Financial feasibility analysis : Construction and absorption period (budget that ends when the building is fully leased)	3	2	1
Financial feasibility analysis : Operational period (pro-forma leasing and revenue projections)	3	2	1
Development programme	3	2	1

24. Does your company analyse and include the following components when completing a financial feasibility analysis for a property development?

	Yes	No
CONSTRUCTION AND ABSORPTION PERIOD		
Development costs		
· Land and land related costs	1	2
· Construction cost, construction cost increases and related costs	1	2
· Design consultant's fees and disbursements	1	2
· Development management allowance	1	2
· Tenant inducements	1	2
· Project promotion, marketing and commission	1	2
· Holding charges and financing costs	1	2
· Development margin and other overhead allowances	1	2
OPERATIONAL PERIOD		
Cash flow analysis		
· Income and expense forecasts	1	2
· Potential gross income	1	2
· Vacancy and collection loss on effective gross income (EGI)	1	2
· Operating expenses (OE)	1	2
· Net operating income (NOI)	1	2
· Before tax cash flow (BTCF)	1	2
Financial ratio analysis		
· Discounted cash flow analysis	1	2
· Key financial ratios and other measurement tools (for example: capitalisation rate)	1	2
Property measurement analysis (for example: rate per square metre)	1	2
Sensitivity analysis (for example: vacancy analysis)	1	2
Risk analysis (for example: analysing business risk)	1	2

- 25 To what extent does your company apply the following discounted cash flow analysis (DCF) methods and other key financial ratios, when conducting financial feasibility studies?

	Always	Sometimes	Never
Discounted cash flow analysis (DCF)			
· Payback period (PB)	3	2	1
· Net present value (NPV)	3	2	1
· Internal rate of return (IRR)	3	2	1
· Modified internal rate of return (MIRR)	3	2	1
· Profitability index (PI)	3	2	1
Key financial ratios			
· Capitalisation ratio (Cap rate)	3	2	1
· Equity to value ratio	3	2	1
	Always	Sometimes	Never
· Development yield	3	2	1
· Value determination	3	2	1
· Debt coverage ratio (DCR)	3	2	1
· Loan-to-value ratio (LVR)	3	2	1
· Break-even cash flow ratio (BER)	3	2	1
· Operating efficiency ratio (OER)	3	2	1
· Cash on cash return	3	2	1
· Break-even occupancy (BEO)	3	2	1
· Gross rent multiplier (GRM)	3	2	1
· Effective gross income multiplier (EGIM)	3	2	1
· Net income multiplier (NIM)	3	2	1
· Before tax cash flow multiplier	3	2	1