



GORDON INSTITUTE
OF BUSINESS SCIENCE

University of Pretoria

Risk in mixed-use property development in South Africa

A case study of Melrose Arch

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfillment of the requirements for the degree of Master of Business Administration.

10 November 2010

Abstract

Mixed-use development is a growing trend that is transforming the real estate landscape and is defined as a real estate project with planned integration of some combination of retail, office, residential, hotel, recreation or other functions that are pedestrian-oriented, limit urban sprawl and have architectural expression. Without a tested framework to predict and mitigate risk in a development, it is difficult for investors and property developers to make accurate business decisions. The aim of the research was to explore the risks associated with a prominent mixed-use development and how these risks may be mitigated from a business perspective.

From the existing literature, a framework was constructed of elements that would impact on the risk profile of a mixed-use development. Due to the limited amount of available literature, a qualitative and exploratory research design was employed. Due to its prominence and distinctiveness, Melrose Arch in Johannesburg was selected as a case study. A process of triangulation was used between observations, documentation and in-depth, open-ended interviews with the key role players in the development of Melrose Arch.

The research indicates that Melrose Arch is riskier than traditional property development. Mixed-use development is an ongoing concern that requires ongoing strategic alignment and general management expertise. Findings from the research contributed to construct a comprehensive framework for risk mitigation in the mixed-use development process.

Keywords

Risk

Mixed-use development

Property development

New Urbanism

Declaration

I declare that this research project is my own work. It is submitted in partial fulfillment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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10 November 2010

Acknowledgements

I would like to give credit and thanks to the individuals who contributed and made this dissertation possible.

My research supervisor, Prof. Francois Viruly, for guidance and support.

Guy Gordon, Development Manager at Melrose Arch, for facilitating the case study on Melrose Arch.

All participants in the research for their contribution through in-depth interviews:

- Guy Gordon
- Graham Wilson
- Mark Uhlmann
- Ulana van Biljon
- Vic de Stadler

Heidi Tressel, for editing the dissertation.

Reshma Bhoola, for assisting to formulate the relevance of the research topic.

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1. Definition of the Problem

1.1 Introduction

The movement of New Urbanism has established mixed-use in urban planning strategies since the mid 20th century (Grant, 2002). Mixed-use property development has been central to many urban regeneration projects and according to Rabianski, Gibler, Tidwell and Clements (2009) the demand for environments where people can live, work and play has increased over the past decade. Mixed-use development is establishing itself as a distinct product type and a growing trend that is transforming the real estate landscape.

The principles of New Urbanism can be applied to projects across the spectrum, from a single building to an entire community. The principles of New Urbanism include walkability, connectivity, mixed-use and diversity, mixed-housing, quality architecture, as well as urban design and traditional neighborhood structures (*New urbanism* Retrieved 11/8/2010, 2010). There are two schools of thought with respect to mixed-use: some argue that mixed-use is an urban development principle and become ambiguous when applied within an isolated property development scheme (Rowley, 1996). Others argue that mixed-use property development schemes form a key part of sustainable urban development (Rabianski *et al*, 2009).

For purposes of this study the definition of mixed-use development according to Niemira (2007) will be adopted: “a real estate project with planned integration of

some combination of retail, office, residential, hotel, recreation or other functions that is pedestrian-oriented. Space use is maximized and traffic and urban sprawl is mitigated while these developments also have architectural expression.”

Du Plessis, Irurah and Scholes (2003) argue that the role of the built environment in South Africa is critical to the demands of climate change and the broader South African developmental context. According to Du Plessis *et al* (2003) little is done in South Africa to deal with urban sprawl effectively although a supporting policy exists. The Integrated Development Plan addresses urban sprawl in Johannesburg by drawing fixed urban growth boundaries (Du Plessis *et al*,2003).

Due to limited public transport, a lack in infrastructure and attempts to reduce urban sprawl in the major metropolitan areas of South Africa, areas like Johannesburg, Durban and Cape Town could see a dramatic increase in mixed-use schemes due the characteristics of mixed-use development. Urban policies during *apartheid* resulted in segregated societies and poor infrastructure. Integration of different social- and income groups post *apartheid* could also lead to an increased demand for mixed-use development. Johannesburg is the business capital of Africa and attracts visitors and investors from all over the world. Areas in the north of Johannesburg are already seeing large investments in mixed-use schemes and it is evident that the nature and form of the city’s built environment is moving towards the principles of New Urbanism.

Western Cape Transport and Public Works MEC Robin Carlisle's policy aims to combine thousands of rich and poor households in a live-work-play environment by developing mixed-use schemes in the Cape Town CBD. According to Carlisle this would make transport and infrastructure more cost-effective and invigorate social life (Fife, 2010).

Property developers and investors have to make business decisions based on risk and reward. Without a tested framework or model based on theory to predict the risk profile of a development, it is difficult to make accurate business decisions.

Financial institutions, in their capacity as lenders, base their funding decisions on yield, the risk associated with the development, the track record of the developer and the developer's liquidity. Lenders generally struggle to assess the risk of mixed-use developments as they do not know how well the different uses work together as a single development, making it difficult to predict what the different sources of income will be (Rabianski *et al*, 2009).

According to risk theory, risk increases as the variability in the returns of an opportunity increase. Systems of risk are complex and dynamic but according to Daniel (2000) these systems can be managed. According to Brueggeman and Fisher (2005), real estate has a set of risk characteristics that is different from other investments. Newell and Steglick (2003) further propose the top ten property development risks based on their empirical findings. The call for research in mixed-

use developments by Rabiński *et al* (2009) emphasises the need for empirical evidence and highlights risk and diversification as an important area for future research.

Mixed-use developments differ from multi-use developments in the sense that the mixed-use concept is not only about use but extends into planning, design and lifestyle. Mixed-use development is about planning the integration of different uses before any part of it has been built in order to create a live-work-play environment. For this reason, a building consisting of apartments with shops on the ground floor does not constitute a mixed-use development. (Rabiński *et al*, 2009). A mixed-use development, therefore, has a high variability in returns as it not only includes property types with variable income potential (e.g. retail, leisure, hotels), but it also has high levels of complexity due to integration and synergy between different components of the development.

A mixed-use development includes different types of property with varied property cycles. Property cycles are the result of misalignment between supply and demand conditions within specific property sectors. Due to different supply and demand conditions for diverse property types, various property cycles occur.

Modern Portfolio Theory (MPT) aims to explain and reduce uncertainty in investment portfolios by including a collection of assets in a portfolio that will result in a lower risk collectively than the risk attached to each individual asset. According

to the principles of MPT, different property cycles present in mixed-use development lower the overall risk in the development as a result of diversification.

The main focus of this work is not to quantify risk, but to examine the trade-off between the increased risk as a result of complexity and decreased risk as a result of diversification. The review of the available literature on mixed-use development highlights the fact that a unique set of risk factors exists that impacts on the success of mixed-use developments. The aim of this research is to build a theoretical framework for risk mitigation in mixed-use development and to gain a deeper insight into the specific challenges experienced by developers of large, mixed-use property developments in South Africa over the past decade.

1.2 Research Problem

Property developers and investors make business decisions based on risk and reward. Without empirical evidence on risk in mixed-use development, it is difficult for property developers and investors to make accurate business decisions.

Although empirical research on risk in traditional property development is limited, certain risks have been identified as the major factors affecting any property development. However, very little research has been done on risk in mixed-use property development (Rabianski *et al*, 2009).

The available literature on mixed-use property development indicates that there is a unique set of risk factors that apply to mixed-use property development. By using this framework, the purpose of this study is to determine what the perceived risks are for developers in mixed-use development and how these risks are mitigated. In this way the study will aim to propose a risk framework that may be used by developers to mitigate the unique risks associated with mixed-use property development.

1.3 Research Motivation

Childs, Riddiough and Triantis (1996) have provided some theoretical research around the quantification of risk of mixed-use development. Rabiński *et al* (2009) highlights the need for more theoretical and empirical research on mixed-use development from a real estate perspective. Rabiński *et al* (2009) specifically identified risk and diversification as an area for future research.

Miles, Berens and Weiss (2000) discuss the real estate development process and risks in property development extensively. However, very limited research has been done on risks unique to mixed-use property development and few theoretical and empirical studies cover any form of property development in the South African context.

Due to the history of colonialism, *apartheid* and unrest in South Africa, the country has a unique development structure (Ramabodu, Kotze & Verster, 2007). The

current democratic government of South Africa aims to stimulate development. According to Ramabodu (2007), both commercial and retail property continue to be excellent investments, while certain “Urban Development Zones” and other tax incentives have been identified in order to stimulate housing development.

However, it is critical to pay attention to the socio-political environment that may influence the value of certain types of property development in South Africa. Ramabodu *et al* (2007) highlights the need for research in this area. This study aims to achieve an understanding of the impact of the political, business and financial risks on developers of mixed-use projects in South Africa.

An understanding of how the risks of a current- or previous development were mitigated will help construct a risk framework based on empirical evidence. By mitigating risk in a mixed-use development based on sound theoretical principles and empirical evidence, property developers are able to attract more favourable financing alternatives from lenders and maximise the value of their developments for all stakeholders.

Rowley (1996) argues that because of the ambiguity of mixed-use development, the concept of mixed-use might degenerate into just another marketing term for a product that does not live up to the traditional meaning of mixed-use. Due to the sizeable amounts of capital involved, large number of benefits and high levels of risk associated with mixed-use developments, mixed-use development requires

distinctive expertise. There is a need for extensive research that will contribute to a body of knowledge that will result in the long term success of mixed-use development. The aim of this research is to create an empirical framework for mitigating risks that are unique to mixed-use development.

1.4 Conclusion

Mixed-use development is a growing trend that is transforming the real estate landscape and is defined as a real estate project with planned integration of some combination of retail, office, residential, hotel, recreation or other functions that are pedestrian-oriented, limit urban sprawl and have architectural expression. Without a tested framework to predict and mitigate risk in a development, it is difficult for investors and property developers to make accurate business decisions. Limited research has been done on the topic of mixed-use development and contradictory views exist regarding the risks associated with mixed-use development.

According to the principles of modern portfolio theory, different property cycles and risks of the various property types included in a mixed-use development should result in lower risk as a result of diversification. However, mixed-use development is very complex and literature indicates that there are risks unique to mixed-use development that need to be mitigated differently from the way in which risk is handled in traditional property development. This research aims to explore the risks associated with mixed-use development and how these risks may be mitigated in order to achieve the benefits of diversification.

2. Theory and Literature Review

2.1 Mixed-Use – Theory and Practice

Urban planning in the early 20th century was based on the key principle that different zoning should exist for different land use (Grant, 2002). Zoning was integral to a strategy that separated uses that were incompatible within close proximity. However, according to Grant (2002), as early as the mid 20th century, changes in transport and economic patterns resulted in urban sprawl in North American cities. Different urban renewal schemes were launched by government in order to revitalise older urban areas and resulted in the questioning of modern planning strategies.

According to Van der Ryn and Calthorpe (1986), available literature indicates that mixed land use has become common and highly favourable due to the possibility of restoring vitality and environmental quality. Van der Ryn and Calthorpe (1986) state that mixed land use gained support because of benefits such as optimal use of infrastructure, increased affordability as a result of mixing housing types, less dependency on motor vehicles and the consequent minimisation of their impact on the environment.

Grant (2002) states: “Mixing uses thus forms part of a strategy for sustainable development as well as a theory of good urban form, with the objectives of economic vitality, social equity and environmental quality.”

As a movement, New Urbanism played an important role in establishing mixed-use as a planning principle in North America and Canada (Grant, 2002). According to Downs (2005), there are six basic principles for smart growth of cities:

- Limit outward expansion
- Increase residential densities
- Provide more mix and pedestrian-friendly development
- Emphasise public transport
- Shift development costs to those who benefit via impact fees
- Revitalise older neighbourhoods

The benefits of mixed-use development, as highlighted in the literature, are closely aligned with the six principles of smart growth according to Downs (2005). These six principles of growth are also very appropriate within the South African context where the development structure is still affected by the legacy of the socio-cultural and economic impact of colonialism, *apartheid* and isolation of certain culture groups (Ramabodu *et al*, 2007). Growth based on Downs' six principles will ensure the development of more integrated communities, upliftment of previously disadvantaged communities and the development of infrastructure with limited impact on the environment.

Due to the benefits of mixed-use development that are so closely aligned with Downs' six principles for growth, it is believed that mixed-use development is able to provide many solutions to South Africa's socio-economic problems .

Although there is a lack of literature around mixed-use development in the South African context, according to Ramabodu *et al* (2007) there are many tax incentives for the development of South Africa's inner cities. Ramoreboli (2005) expects many opportunities in mixed-use development will occur as a result of the practice of cities to incentivise such development projects.

In 2007, a conference attended by key South African property development stakeholders saw a discussion around the growth of the mixed-use development property typology in South Africa (www.allconferences.com). Trends in the country's property sector appear to be following international moves towards more mixed-use development. However, there remains a need for more research on the unique challenges that the South African context poses to developers.

Different views exist on the definition of mixed-use development. Within New Urbanism there are two streams (Grant, 2002): traditional neighbourhood design and transit-orientated development. Some of these views, according to Rabiński *et al* (2009), exceed the scope of mixed-use development according to the Urban Land Institute and other professional groups. For purposes of this study, the definition of a mixed-use development is: a real estate project with planned integration of some combination of retail, office, residential, hotel, recreation or other functions that is pedestrian-orientated (Niemira, 2007).

2.2 Benefits and risks associated with mixed-use development

Rowley (1996) stated that although the potential of mixed-use development in revitalising cities and creating sustainable living patterns had been discussed in the literature, it appeared as though nostalgia regarding mixed-use development exceeded the amount of research on the topic. Although mixed-use development offers a range of benefits, Rowley argued that the way in which certain mixed-use projects are designed and managed results in very few of the benefits associated with traditional mixed-use areas being realised. More than a decade later, Rabianski *et al* (2009) states that despite its growth, there is still only limited research available on the success and failure of mixed-use development.

Rabianski *et al* (2009) discusses many reasons for the popularity and necessity of mixed-use development, such as increased housing opportunities, the consumer demand for a lifestyle supported by a live-work-play community, financial returns and diversification of risk. According to Rosta (2007), developers, business tenants and residents of mixed-use developments all enjoy the potential and value created through synergy between the different property types, while local governments promote density.

The main interest in mixed-use development for property developers and owners is influenced by financial factors (Rabianski *et al*, 2009). Land costs are constantly rising in urban areas and mixed-used development provides the opportunity to optimise land use. According to Schwanke, Smart and Kessler (1986), there is a

cost benefit to owners in creating shared services and facilities for different components of a mixed-use development. These services and facilities may include common area maintenance, building maintenance, parking, security and aspects such as marketing.

2.2.1 Risk and risk management

Reyman, Dewulf and Blokpoel (2008) defines risk as an uncertain event or condition that, if it occurs, has a positive or negative impact on the outcome of a project.

According to Day (2001), project risk is the variability in the project return and corporate risk is the risk associated with investing in a mixture of projects. The more variability included in an opportunity, the higher the risk.

Daniel (2000) states: “The quantification of any type of risk can be broadly described as a function of four interrelated variables.” These four variables include the *scale of potential harm or loss* adjusted by the *likelihood* of the harm or loss occurring net of the *ability to respond* effectively and the likelihood that the response mechanism is *deployed effectively*. Daniel (2000) argues that risk may also be expressed in positive terms, where the outcome of net risk assessment is net opportunity assessment. The four variables for net opportunity assessment would include the *value of the opportunity* adjusted by the *likelihood* of the

opportunity occurring net of the *ability to capture* the opportunity and the ability of the opportunity being *deployed*.

According to Daniel (2000) systems of risk are complex and dynamic entities that can be managed. Risk and opportunity have recurring patterns and are governed by dynamic systems behaviour. Daniel (2000) argues that by better understanding the nature and behaviour of systems and adjusting choices and investment decisions to reduce risk, scarce resources may be successfully applied to the highest priorities. Reyman *et al* (2008) therefore explains risk management as analysing risk, designing and implementing controls to mitigate risk and ongoing evaluation thereof.

2.2.2 Modern Portfolio Theory

Portfolio theory is concerned with the investor rather than the firm or consumer (Markowitz 1991). According to Markowitz (1991), an investor who could accurately predict future returns with absolute certainty would only invest in the asset with the highest future return. The reason for diversification, by way of investing in portfolios, is due to the lack of certainty. Modern portfolio theory (MPT) aims to reduce uncertainty in investment portfolios. MPT seeks to maximise return and minimise risk by including different assets in one portfolio of assets. The aim is to combine such a collection of assets that will result in a collectively lower risk than the risk of each asset.

Property developers and investors make business decisions based on risk and reward. Mixed-use development consists of a portfolio of different property types with varying risk- and return profiles. According to the principles of MPT this diversification into various property types within one development should provide a lower overall risk. The application of MPT in determining the risk profile of a mixed-use development could make it possible for property developers and investors to accurately assess the risk of the development and to include the right components into the development.

MPT models the return on an asset as a normally distributed random variable and defines risk as the standard deviation of return. A portfolio is weighted as a combination of assets so that the return of a portfolio is the weighted combination of the assets' returns. By combining different assets whose returns are not correlated, portfolio theory attempts to reduce the total variance of the portfolio. The basic assumptions of portfolio theory are that investors are rational and markets are efficient.

Sumnicht (2009) argues that all the principles of MPT “continue to be as valid today as the day they were published”. Sumnicht believes that if MPT and research in behavioural finance can be implemented in a practical way, MPT will be more effective than ever before, which will lead to improved investment performance.

2.2.3 Property Cycles

According to Bjorklund and Soderberg (1999) a significant amount of literature exists that deals with problems relating to property cycles. The literature mainly focuses on models that indicate how the movement in property cycles may be explained by independent variables reflecting from economic conditions to the real estate market. Each property type has a different cycle based on these variables. However, most literature generally focuses on only one component of the real estate market, i.e. either the residential market or the commercial market.

According to O'Neill (2009) there are two inherent systemic factors that cause property to experience more pronounced cycles than the general economy. These inherent factors are the *accelerator effect* and *construction lag*. The accelerator effect assumes that the amount of capital investment that is necessary to replace obsolete buildings needs to take into account economic growth and therefore capital investment activity, including property, is subject to more extreme cyclical fluctuations than the general economy. O'Neill (2009) explains that construction lag is the time taken by design and planning processes to deliver new supply of property to the market.

Demand for property is driven by different factors like interest rates and economic growth. According to Dehesh and Pugh (2000) the cyclical nature of modern property is deeply interlinked with finance and credit cycles. O'Neill states that demand is much more responsive and as a result of the misalignment between

supply and demand, price increases and decreases are accentuated at different stages in the property cycle. Due to the different supply and demand conditions for various property types, price increases and decreases occur at different times and result in diverse property cycles for various property types.

2.2.4 Uncertainty in property projects

According to Reyman *et al* (2008), the difference between risk and uncertainty is that uncertainties are not quantifiable. While risk can be controlled, uncertainty is defined as an unpredictable and uncontrollable risk. Adams *et al* (2005) argue that a critical function of markets in a modern economy, including urban property markets, is to convert uncertainty into risk. While uncertainty refers to a lack of knowledge of all possible outcomes, risk refers to specific calculations of the likelihood of each possible outcome.

Reyman *et al* (2008) identified social complexity that originates through the involvement of multiple, strategically operating actors as the main source of uncertainty in property development projects. Technical complexity can lead to a high level of dependency between different actors involved in a property project. Other uncertainties, according to Reyman *et al* (2008), are market dynamics, municipal participation and certain uncontrollable costs relating to technical complexity. Changes in different property cycles also add uncertainty to property projects. These uncertainties all lead to social complexity and require commitment

and involvement of all actors in a property project. Means and goals must have the ability to be fine-tuned and project processes must be flexible.

2.2.5 Risk in property projects

According to Brueggeman and Fisher (2005), the investment attributes specific to real estate are unique and, therefore, real estate has a set of risk characteristics that is different from other investments.

According to Brueggeman *et al* (2005), there are six major types of risk a property investor should consider before deciding on a project:

- Business risk: the risk of loss due to fluctuations in economic activity that affect the variability of the income produced by a property.
- Financial risk: the cost and structure of debt on a project.
- Liquidity risk: the risk relating to the frequency of transactions between buyers and sellers and the time it will take for a transaction to take place.
- Inflation risk: the risk that the income produced by a property might not offset an increase in inflation.
- Management risk: the capability of management and its ability to operate the business efficiently as well as to innovate and respond to competitive conditions.
- Interest rate risk: changes in interest rates affect the price of all investments, including real estate.

According to Newell and Steglick (2003), research into property development risk is limited. Newell *et al* (2003) suggest that property development risk factors may be categorised as follow:

- Pre-construction risk
- Contract negotiation risk
- Formal commitment risk
- Construction risk
- Post construction risk

These categories of property development risk each include different risk factors. The following are the top ten risk factors identified by Newell *et al* (2003) across the different categories:

- Environmental
- Time delay
- Land cost
- Acquisition terms
- Approval processes
- Cost increase
- Political
- Experience
- Engineering
- Market
- Delivery timing

According to Newell *et al* (2003), the key strategies property developers use to mitigate these risks are in-house management of critical processes, quality assurance procedures and contractually allocating risk to other parties. Newell *et al* (2003) also argue that increased awareness and understanding of the property development risk management process will lead to a more rigorous assessment of risk factors and risk mitigation in the property development process.

These ten risk factors are applicable to any type of property development and can be used as a framework for identifying unique risk factors specific to different types of property development. Mixed-use development, as an example, has a unique set of risk factors that might not be included in the top risk factors identified by Newell *et al* (2003).

2.2.6 Risk in mixed-use property projects

Egan (2007) argues that a mixed-use development is an extraordinarily complicated product type which is riskier than most because there are more opportunities to make mistakes. According to Egan (2007), the developer not only has to get one project right, but three or more projects have to be able to function successfully on their own. These individual projects are also interlinked, which causes further risk in the development. However, Egan maintains that if executed properly, mixed-use projects actually spread the development risk.

According to a survey among developers, investors, building managers and other property professionals (Egan 2007), 21.7% of respondents believed that the financial risks are substantially higher for building mixed-use projects than when undertaking single use projects, while 47.2% believed the risk to be moderately higher. Nearly 70% of respondents believed that the risk associated with mixed-use projects is higher than in traditional property development.

Rosta (2007) mentions that large loans associated with mixed-use developments have the potential to increase risk. Rosta argues that lenders have the perception that the existence of different uses increases the overall risk of the development.

According to Leinberger and Kozloff (2003), lenders that provide funding to developers of mixed-use developments usually attach a premium to the required return on the project as a result of their inability to accurately assess the associated risk, when in actual fact the risk might be lower due to aspects of diversification into different property types. This clearly highlights the need for research that will guide the development of a risk framework for mixed-use development and to understand the true risks associated with mixed-use development.

According to Rabiński *et al* (2009), Aygoren asserted in 2004 that mixed-use is a form of diversification and reduces the overall risk due to the reliance on more than one market sector. Different property cycles for different types of property are what

drive diversification within mixed-use development. Most developers, lenders and investors surveyed by the University of Pennsylvania (Niemira, 2007) believe that mixed-use projects are riskier because of their complexity. These arguments highlight the trade-off in mixed-use development between the increased risk as a result of integrating different property types and lower risk as a result of diversification.

The contradictory views found in literature indicate that no empirical evidence exists as support for any of the views regarding the risk associated with mixed-use development.

According to Day (2001), risk in an opportunity increases as the variability within the opportunity increase. Daniel (2000) argues that risk and return are systemic and have recurring patterns. Mixed-use development is no different to any other opportunity and therefore the risk and return within mixed-use development is a function of all the different types of risk, including market risk, political risk and the environment. Mixed-use development typically has more variability in the system, which increases risk but also has an element of diversification due to different property cycles included in one development.

An unanswered question at present is whether mixed-use development provides diversification and therefore lowers the risk in relation to the return compared to single-use developments of the same scale (Rabianski *et al* 2009). Rabianski

states that rigorous theoretical research on mixed-use development has been very limited and calls for more empirical research into the subject from a real estate business perspective.

2.3 Risk factors in mixed-use development

The contradictory views found in literature regarding the risks associated with mixed-use development indicate that no empirical evidence currently exists to support any of the views. However, there seems to be consensus regarding the fact that risk may be reduced significantly if a mixed-use project is executed properly.

According to Daniel (2000), systems of risk are complex and dynamic but can be managed. Daniel states that the most effective risk mitigation strategies address both positive and negative aspects of the project with a long-term view in mind.

The following elements have been identified from literature to have a positive or negative impact on the long term success of mixed-use development.

2.3.1 Location

Although the location of a mixed-use development has to accommodate the demand for residential accommodation in the area, Hunt (2009) argues that the success of such a development cannot be attributed to one component or one type

of tenant. A large part of the success of a mixed-use development is consumer traffic and, therefore, a factor for mitigating risk is to position the development within a thriving community.

Residential components of a mixed-use development should be based on the household structure of the area in which it is located or the type of resident the development wishes to attract.

2.3.2 Design

Hunt (2009) believes that one cannot generalise and say whether mixed-use developments perform well or poorly overall. He argues that the performance of any mixed-use development is a reflection of how it was designed and built and should be a reflection of the community in which it exists.

A large part of the success of a mixed-use development depends on how well the property is managed after completion. However, the success achieved by property managers in accommodating different tenants and communities under one roof depends largely on how the development was designed and built (Richter 2006).

David Froelke, senior vice-president for Related Companies, developer of the Time Warner Center in New York, emphasises the importance of including the correct components at the beginning of a project, as it is almost impossible to retrofit these at a later stage (Richter 2006).

Ratio composition of different property types

Mixed-use development may include retail, office, residential, hotel, recreation or other functions (Rabianski *et al*, 2009). No literature was found that indicates any empirical evidence in terms of the optimal composition of a mixed-use development.

Modern portfolio theory maximises return and minimises risk by including different assets in one portfolio of assets (Markowitz 1991). The possibility exists that modern portfolio theory could be used to determine what the optimal composition of the different types of property should be based on market conditions and different property cycles, but no evidence exists in this regard. However, a unique set of risk factors and variables apply to mixed-use development that make the pure application of modern portfolio theory extremely difficult. These variables may include limitations such as the size of the land, parking needs of different components, the type of retail environment and the demographics of the area.

Risk can be mitigated by adjusting the balance between the commercial and residential elements (Murrin and Chapman 2009). Changes in the market can impact on demand for residential components of the development and by adjusting the mix for these market conditions, profitability can be maximised.

Common areas create synergy

According to Richter (2006), developers must ensure that a mixed-use development contains common areas and features that allow for diverse tenants to engage without encroaching on one another's private space.

Richter (2006) highlights the complexity of parking in a mixed-use development. John Kokinchak, senior vice-president of property management at Developers Diversified, measures the value of parking spaces in this industry by the amount of times they turn (Richter 2006). Long-term parking consumers should be pushed to the least desirable area, while convenience stores should have parking available in close proximity. Components that are more lifestyle-orientated should have parking that allows the consumer to wander around and not just run in and out of stores.

Architectural Expression

Using a recognised architectural brand to design a development can help to raise public interest in a project in the early phases (Rybczynski 2008). A reputable architect with a recognisable brand can also help in raising finance for a development.

However, according to Rybczynski (2008), it is risky to apply a signature style to a variety of different buildings. Mixed-use developments sometimes include public buildings like libraries or civic centres. If the architect's signature style is applied to

all buildings, the development risks losing its unique identity. Different components of a mixed-used development form part of one unit with a single brand identity.

Although architectural expression is important in most mixed-use projects, Rybczynski (2008) highlights that too whimsical and quirky buildings are very difficult and expensive to build. There must be balance between the architectural expression and design needed, as well as complexity and building cost.

Energy

South Africa is currently experiencing an electricity shortage; meanwhile, the National Energy Regulator has approved significant increases in electricity tariffs. Eskom is in the process of planning additional power generating facilities. As a result, more increases in the price of electricity may be expected. The reality of power cuts has forced managers of large properties to make significant investments in the installation of generators or other alternative energy sources.

Increasing concerns regarding carbon emissions and climate change will have a profound impact on the economic landscape of South Africa (Economic Sectors and Employment Cluster, 2010). Therefore, it is important to find alternative sources of energy. The cost and type of energy used in any development will impact not only on the development's long-term financial return, but also on those of tenants. Alternative sources of energy, like solar panels, can also avoid the

additional investment in generators as well as the high running costs associated with it.

2.3.3 Financing Structure

“Large, landscape-altering developments demand a specialised finance strategy” (Rosta, 2007). Rosta states that although the preferred strategy for developers is to take out a single loan for the whole development, lenders assess each component of the development separately. A perception exists amongst lenders that the presence of different uses increases overall risk. According to Rosta (2007) the structure of permanent loan financing depends on the size of the project. If individual components of the project are large enough, the favoured approach is to finance each component separately.

Gary Mozer, managing director of George Smith Partners Inc., points out that bundling finance needs together for the development as a whole might work best for developments of a smaller scale. If one or two components of the development have a low refinancing value, those components will benefit from being packaged with other components (Rosta, 2007).

Timothy Fraser, a principal for Spaulding and Slye in the USA, notes that large and complex mixed-use developments involve significant upfront investment in infrastructure such as roads, green space, water treatment facilities and bus- or railway stations (Rosta, 2007). While lenders only support 10 to 20 percent of the

infrastructure investment, it's usually required that between 50 and 75 percent of the infrastructure be in place during the early phases of the development. According to Fraser, the challenge for the developer is to decide what portion of the infrastructure must be in place for development to continue and how this can be financed (Rosta, 2007). If finance is not available to a developer for this upfront infrastructure investment, the whole development is at risk.

2.3.4 Public Sector involvement

Adams *et al* (2005) states: "Risk theory within mainstream economics provides the basis for pricing risk in the financial markets and for the development of modern portfolio theory, which has been extensively applied in property investment." Adams *et al* (2005) argues that private sector investment depends on the facilitating role of the public sector and therefore public sector involvement is a key issue in risk reduction.

According to Adams *et al* (2005), from a political economy perspective, the control of information as a result of public- and private sector cooperation enables a firm to obtain disproportionate bargaining strength in the marketplace. Specifically relevant in the context of mixed-use development, public policy has a direct impact on property transactions as well as an indirect impact on the context within which these transactions take place (Adams *et al*, 2005).

According to Egan (2007), nearly 60% of developers and property professionals who are involved in mixed-use development believe that involvement from the public sector can be instrumental in the financial success of a mixed-use project.

Beyard, an expert from the Urban Land Institute, highlights the importance of public-private partnerships where a mixed-use development includes civic, cultural, sports or affordable housing components (Egan, 2007). Public-private partnerships can also provide major benefits where significant infrastructure is needed.

According to Egan (2007), the most common involvement of the public sector in mixed-use development is in the financing of parking structures. Local government favours density and therefore discourages sprawling parking lots. This may also contribute to a more secure environment.

2.3.5 In-house expertise of developer

Rosta (2007) states that lenders are mostly interested in the level of expertise a developer holds. According to Rosta, experience in more than one property type is essential when tackling a mixed-use development and a developer can mitigate risk and increase chances of success by partnering with someone who is specialised in a different property type.

Very few developers possess all the expertise needed in-house and should therefore consider delaying mixed-use projects if the necessary skills are not

available through joint ventures or partnerships (Egan, 2007). Reid Freeman, president of developer Regent Partners LLC, believes that mixed-use development is about long term success and not short term profit (Egan, 2007).

2.3.6 Retail mix

A large part of the success of a mixed-use development is the financial return from the retail component. While residential and commercial returns are mostly fixed, retail returns depend on consumer traffic. The mix of retail tenants in a mixed-use development must be a reflection of the people who use the property (Hunt, 2009). The retail mix of the development will determine consumer traffic from outside the development. At the same time, the retail mix must address the needs of residents and commercial tenants in order to create a live-work-play environment and capitalise on the synergy created between different components.

Alan Schmiedicker, senior vice-president of property management for Forest City Commercial Group in Cleveland, USA, holds that property managers of mixed-use developments must be able to adjust their tenant mix and be creative when it comes to attracting and keeping the right kind of tenants. It's believed this will protect them from economic downturns in the future (Hunt, 2009). Staggering lease expiration dates is critical as this prevents tenants from terminating at the same time. This will help a property manager to maintain the optimal mix of tenants.

2.3.7 Entertainment and recreation

According to Hunt (2009), entertainment retailers bring consumers to a mixed-use development. Southwest Plaza, a mixed-use development in Cleveland, USA, partnered with local parks and recreation departments to develop a range of special events to attract people to the development. According to Schmiedicker (Hunt, 2009), real estate that makes people feel comfortable, as a result of an experience of community through meaningful events, drives consumer traffic.

By including facilities that allow for this kind of community experience and events, developers can limit the impact of economic downturns on retail consumer traffic. This will also contribute to the overall success and appeal of the development.

2.3.8 Challenges unique to the South African environment

According to Ramabodu *et al* (2007), development in South Africa has historically passed through four distinct phases that may be summarised as follows: colonialism, *apartheid*, internal unrest, and democracy and reform. Each phase has a discernable heritage in the physical development structure of South Africa (Ramabodu *et al* 2007).

According to Ramabodu (2007), it is important to acknowledge the diversity in South African societies. Corridors exist between traditional white and black areas; cultural differences must be accounted for and differences in character exist between areas like Johannesburg, Cape Town and other rural cities and towns.

Rowley (1996) argues that mixed-use development should not be isolated from issues such as cultural priorities and lifestyles.

2.3.9 Environmental sustainability

The ever-increasing sustainability and environmental requirements for new buildings will add to the overall costs of a development and continue to affect the viability of projects. According to Du Plessis *et al* (2003), South Africa's main contribution to climate change is through the use of fossil fuels and other combustible fuels for energy. Climate change mitigation, therefore, needs to focus on reducing the use of electricity by shifting towards renewable sources such as solar energy.

Although, according to Wynberg and Sowman (2007), a growing body of evidence indicates that environmental sustainability is not central to planning and decision-making around land reform in South Africa, Ramabodu *et al* (2007) argues that Southern Africa needs to show investors that there is an understanding of the need for sustainability on all environmental levels. Du Plessis *et al* (2003) states that the pressure to reduce greenhouse gas emissions is likely to result in design regulations and incentives aimed at greater building construction and energy-use efficiencies, as well as transport efficiencies. Although these pressures are not likely to be dominant in the foreseeable future, the scale of mixed-use development as well as the nature of the live-work-play environments it creates make energy efficiency a key consideration in mixed-use development.

By anticipating future legislation regarding environmental sustainability developers can ensure the viability and long-term success of a development. Developers might argue that energy efficiency can be incorporated into a development at a later stage, but according to Richter (2006) it is important to include the correct components at the beginning of a mixed-use project, as it is very difficult, not to mention costly, to retrofit these at a later stage.

2.3.10 Cooperation of Strategic Actors

According to Breyman *et al* (2008), organisation of the development process and cooperation of all strategic actors are the main concerns in management of uncertainty in property projects. As mentioned by Adams *et al* (2005), the critical function of markets in a modern economy is to convert uncertainty into risk. By including the continuous effective involvement of all strategic actors in a risk mitigation strategy, this uncertainty can be converted into risk and be mitigated by defining clear role descriptions for each actor in the strategic process. The developer should facilitate this cooperation of all actors in this process. Due to the complexity of mixed-use development, this is a critical component of the risk framework for such a development.

According to Miles *et al* (2000), the major players in a property development process are:

- Private sector property developer
- Public sector developer

- Architect
- Engineer
- Land planner
- Landscape architect
- Contractors
- Environmental consultant
- Transportation consultant
- Appraiser
- Attorneys and accountants
- Real estate agents
- Financial institutions
- Property manager
- Market researcher
- Marketing and public relations consultant
- Regulators
- Final users

2.4 Conclusion

The available literature on mixed-use development highlights its benefits and close alignment with the six principles of smart growth for cities according to Downs (2005). These principles are also very appropriate within the South African context.

Limited research has been done on mixed-use development and the literature highlights risk as an area for research. Risk differs from uncertainty in that risk can be quantified and controlled or mitigated. Risk is an uncertain event or condition that, if it occurs, has a positive or negative impact on the outcome of a project. Project risk is the variability in the project return. The more variability included in an opportunity, the higher the risk.

Mixed-use development consists of a portfolio of different property types with varying risk- and return profiles. According to the principles of modern portfolio theory (MPT) this diversification into various property types within one development should provide a lower overall risk. The application of MPT in determining the risk profile of a mixed-use development could make it possible for property developers and investors to accurately assess the risk of the development and to include the right components into the development.

From the available literature on mixed-use development, elements were identified that would impact on the variability of the returns of mixed-use development and therefore impact on its risk profile. General property development risk factors were excluded, except for those that had unique relevance to mixed-use development.

3. Research Questions and Hypothesis

Hypothesis:

Melrose Arch has a unique set of risk factors that makes it riskier than traditional property development.

Melrose Arch is a mixed-use development in the north of Johannesburg, built on the principles of New Urbanism. The development currently comprises of approximately 200,000 square metres of mixed-use space and is only half-way. The researcher proposes that the risk factors in mixed-use development, and specifically those pertaining to Melrose Arch, are unique and need to be mitigated differently than in traditional property development. The research further explored why these risks are unique to mixed-use development and how they can be mitigated.

This study does not attempt to quantify risk, but to examine the trade-off between the increased risk as a result of complexity and decreased risk as a result of diversification. Furthermore, this study aims to build a framework for risk mitigation in mixed-use development and to gain a deeper insight into the specific challenges experienced within a large, integrated mixed-use property development in South Africa.

In order to achieve these goals, the researcher's proposition comprises three key questions:

Research Question One:

What are the risks perceived by the developers of Melrose Arch that are not experienced in traditional property development and why?

Research Question Two:

How did the developers of Melrose Arch mitigate the perceived risks of this mixed-use property development and how do they plan to handle them in the future?

Research Question Three:

What is the relationship between the perceived risk and risk mitigation of Melrose Arch and current theory and literature on risk in mixed-use property development?

4. Research Methodology

4.1 Choice of methodology

This study aims to provide guidance in analysing data to determine trends in the risk associated with mixed-use property development. The research provided insight into how these kinds of developments may be approached differently going forward, taking into account the current South African context and built environment.

The available literature on mixed-use development indicated that limited research had been done on the topic, highlighting the need for qualitative, exploratory research to serve as a basis for future quantitative research. According to Zikmund (2003), exploratory research is useful when a researcher has a limited amount of experience or knowledge on a topic. Rabianski *et al* (2009) highlights the fact that very limited research has been done on risk in mixed-use development. The available literature on mixed-use development, specifically pertaining to risk, also raises certain contradictory views. The findings of exploratory research will make it possible to narrow down the problems around mixed-use development and to construct theoretical frameworks that may be used for future quantitative research.

Although different property cycles provides diversification in mixed-use development, due to the complexity and uniqueness of each mixed-use project, a different set of risk factors applies that will determine the success of the project as a whole and therefore increase risk if not mitigated.

According to Nersesian (2004) risk is about the possibility for negative cashflows to occur over the period of an investment. From the existing literature on mixed use development, portfolio theory and property cycles, certain elements have been identified that might have a negative impact on the net cashflow of a mixed-use development over the long term. These elements were used to construct a framework for risk mitigation in mixed-use development.

Using empirical findings of risk in property development projects, as discussed by Newell *et al* (2003) and Miles *et al* (2000), this framework was adapted to exclude those risks that apply in the same way to all forms of property development and only include the elements that are unique to mixed-use development. If an element of risk in property development has a unique impact or risk implication for mixed-use development, such an element has been included in the framework. This framework formed the basis of the research into how to mitigate the risks unique to mixed-use development in order to enjoy the benefits of diversification in the long term. The following elements (Table 1) have been identified for inclusion in this framework.

Table 1: Framework for mitigation risks unique to mixed-use development

Risk mitigation unique to mixed use development	Business Risk	Legislative Risk	Financial Risk	Liquidity Risk	Inflation Risk	Management Risk	Interest rate Risk
Location	X	X					
Design							
Ratio composition	X			X			X
Synergy	X						

<i>through design; integration of uses</i>							
<i>Architectural expression</i>	X						
<i>Energy</i>	X						
Retail Mix	X				X		X
Entertainment and recreation	X						
Challenges unique to the South African business environment	X	X				X	
In-house expertise	X					X	
Municipal and government involvement	X	X				X	
Cooperation of strategic actors	X					X	
Financing structure		X	X				X
Environmental sustainability	X	X					

The aim of this research is neither to quantify risk in mixed-use development nor to rate certain risk factors according to importance, but to explore *why* these factors are perceived development risks of mixed-use property development and *how* developers mitigate these perceived risks. According to Yin (2003), case study research is used when a “*how*” or “*why*” question is being asked about a set of events over which the researcher has little or no control. The decision to use case study research was based on the desire to understand the complexity of mixed-use developments and to answer the “*how*” and “*why*” questions that exist around the risk of these kinds of developments.

Data collection was based on the three principles recommended by Yin (2005). The first principle is to use multiple sources of evidence. There were four sources of evidence: documentation, interviews, direct observations and participant observations.

All sources of data were obtained by developing a converging line of inquiry, a process of triangulation (Yin, 2005). This means that the process of obtaining evidence from different sources did not constitute separate sub-studies but was all aimed at corroborating the same fact relating to risk in mixed-use developments. The risk framework constructed from literature, as well as empirical findings from previous literature on mixed-use development, was used as the basis for data collection from all four sources. In this way the research attempted to find a relationship between theory and current empirical evidence of risk in mixed-use development.

The collection of documentation included sources such as newspaper clippings, industry magazines, the development's newsletters, administrative documents such as investor presentations, and general announcements and communication.

An overview of the initial development plans was compared to the actual components of the development in order to find areas where risk had to be mitigated by adapting the original plans. Due to confidentiality reasons, initial

budgets could not be compared to actual development costs to determine areas where developers may approach future developments differently.

The most important aspect of the case study was in-depth personal interviews with key decision makers in the development team. In order to explore deep, rich insights into the specific development chosen as a case study, key decisionmakers in the development process were identified for in-depth, open-ended interviews. The framework of risk factors compiled from the relevant theory and literature has been used as a basis to develop a set of structured questions. Although questions were developed in a structured way, interviews had to come across as guided conversations rather than structured questions. The aim of this research was to explore and find deep insights by avoiding close-ended questions and keeping interviews fluid.

Based on the proposed risk framework for mixed-use development, questions were developed in 10 categories with a set of approximately five sub-questions per category in order to obtain rich answers from participants; not just 'yes' and 'no' answers. The available theory and literature were used to develop questions that would lead to empirical findings on risk factors in mixed-use property development. Although interviews were lead by the 50 structured questions, each interview focused on the area of expertise of the participant and lasted for between two and three hours in order to unearth deep insights that could not be found by way of interviewing any other person.

According to Zikmund (2003), direct observation is an attempt to produce a detailed report of events and what people actually do. The observer plays a passive role and does not manipulate a situation. Direct observations were done during visits to the development and included sidewalk activities, observations of retail activities, residents' behaviour, traffic and parking activities, as well as the general flow of daily activities within the development. A tour was conducted of the whole development, including areas not accessible by the public.

Participant observation, according to Yin (2005), is a special mode of observation where the observer is not passive but becomes a participant in activities being studied. In this research the observer attempted to make use of as many of the facilities in the development as possible in order to find certain insights guided by the risk framework constructed from theory and literature. Being a participant observer also provided the opportunity to interact with tenants and members of the public in the development.

In order to expand on certain findings from the above sources of evidence, short structured interviews were conducted with selected role players.

The second principle is to create a case study data base. A separate database makes the raw data available for inspection to increase the reliability of the research results of the case study.

Thirdly, a “chain of evidence” was maintained according to Yin’s third principle. This makes it possible for the reader of the research report to follow the steps from initial research questions to the final conclusion and determine at which stages evidence was derived.

Lastly, the data collection process had an “analytical strategy”. Data was categorised through a data reduction process (Miles and Huberman, 1994). These categories were based on the review of grounded theory and repetitive information gained from statements in the interviews and documents collected. Furthermore, this data was displayed to permit the drawing of conclusions and verification. Data patterns were linked with theory to build an explanation of the case. In this way the results of the data analysis were compared with the initial framework that was developed from theory and literature. The case study analysis, therefore, expanded on the initial framework in order to formalise a unique set of risk factors that apply to mixed-use development in the South African context.

4.2 Universe and unit of analysis

The *unit of analysis* is a mixed-use property development in South Africa.

For purposes of this study, a mixed-use property development is defined as a real estate project with the following characteristics:

- planned integration of three or more of the following: residential, commercial, retail, hotel, recreation or other functions

- pedestrian-orientated, mitigating traffic and urban sprawl
- architectural expression
- multi-use, extending into planning and design of an integrated lifestyle

The population consists of all mixed-use property developments in South Africa.

4.3 Sampling

The research focuses on one prominent mixed-use development undertaken over the past decade and will be done on a case study basis in order to explore deep insights into probing research questions.

The judgment sampling method was used as a specific mixed-use development was selected as a case study. While smaller mixed-use developments might differ in certain aspects of risk, large developments allow for an investigation into more of the various components of mixed-use. The particular sample also had to have a large impact on the urban design and functioning of the particular area and had to consider the principles of New Urbanism.

The mixed-use development selected for the case study is Melrose Arch, Johannesburg.

Melrose Arch is an urban space, in a previously suburban neighborhood, where office, retail, leisure and residential opportunities coexist. Melrose Arch meets the academic definition of a mixed-use development for the purpose of this study: more than three different uses of property types have been combined into one development in an integrated way that facilitates a pedestrian live-work-play environment. Contemporary office buildings are built around squares and integrated with open spaces, restaurants, residential apartments, hotels and shops. Through the elements of walkability, connectivity, mixed-use, quality architecture and urban design, Melrose Arch is truly built on the principles of New Urbanism that encourage mixed-use and traditional neighborhood structures.

Five key decision makers were identified within Melrose Arch to participate in in-depth interviews. All participants were selected through judgement sampling. These participants (Table 2) were chosen in order to gain rich insights into the different aspects of the development that would not have been possible through any other kind of research methodology. Two further participants were identified to include in short, structured interviews. The aim was to include all key decision makers from the different perspectives of the development. The process of identifying the key role players included a comprehensive overview of the development.

Table 2: Participants in in-depth interviews

Name	Role
Guy Gordon	Development Manager
Graham Wilson	Strategic Architect and Planner (Director - Osmond Lange Architects)
Ulana van Biljon	General Manager (Retail Specialist) – Rennie Property Management
Vic de Stadler	Director – Rennie Property Management
Mark Uhlmann	Sales Manager – Melrose Arch

In order to cover all strategic aspects of the development, the Development Manager, Guy Gordon, was instrumental in this case study and was therefore included as a participant for in-depth interviews. Guy Gordon is not only responsible for implementing the strategy for developing and planning of future phases, but also for the ongoing strategic and operational management of the development.

From a planning and development perspective, it was important to include the senior architect and planner. Graham Wilson, Director at Osmond Lange Architects and Planners, has been instrumental in the conceptualisation and design of Melrose Arch since its inception. Graham Wilson was included in the list of participants for in-depth interviews.

It was important to include representatives of all property types in order to gain deep insights from the various individuals who work closely with the different components. Representing retail, leisure and the hotels in the development, the

Retail Specialist from Rennie Property Management, Ulana van Biljon, was selected. For office- and commercial space, Mark Uhlmann as Sales Manager was included in in-depth interviews. An in-depth interview with Guy Gordon (Development Manager) included the residential component of the development. In addition, two representatives from the two residential estate agencies at Melrose Arch were selected for short, structured interviews.

Ongoing property- and financial management of the development, from maintenance and services to rental collections, are handled by Rennie Property Management. The Director of Rennie Property Management, Vic de Stadler, was included in in-depth interviews.

4.4 Research Limitations

The aim of this study is neither to quantify the risk on mixed-use development, nor to propose whether the risk on all mixed-use developments is either lower due to diversification or higher as a result of complexity. The aim of the research is to provide a theoretical framework for risk mitigation in mixed-use development, based on exploratory, qualitative research. This framework, constructed from qualitative research findings, can be used as a basis for future quantitative research on risk in mixed-use development.

Furthermore, this research focused on a large mixed-use development in the South African context. Due to the South African development structure, most large mixed-

use developments are located within the main metropolitan areas of Johannesburg, Cape Town and Durban. It is possible that developers of smaller scale mixed-use developments and those in rural cities and towns might experience a slightly different set of risk factors. It is also possible that a different set of risk factors may apply to mixed-use development in low income areas.

Qualitative data obtained from in-depth interviews were not supported by quantitative secondary data due to the fact that the developer did not agree to the disclosure of such information.

4.5 Conclusion

Exploratory research is useful when a researcher has a limited amount of experience or knowledge on a topic. Limited research has been done on risk in mixed-use development and the available literature raises certain contradictory views. The findings from exploratory research will make it possible to narrow down the problems around mixed-use development and construct theoretical frameworks that may be used for future quantitative research.

Case study research is useful when the researcher has “how” and “why” questions. The aim of this research is to identify the perceived risks of mixed-use property development and also to explore the reasons **why** these risks are perceived to be unique to mixed-use development and **how** these risks may be mitigated.

For this reason, case study research was employed, using triangulation between observations, documentation and in-depth, open-ended interviews with the key decision makers of a prominent mixed-use development. This research also focuses on the risks and benefits of the principles of New Urbanism. In order to also explore the true principles of New Urbanism and its relevance in the South African context, Melrose Arch in Johannesburg was selected as a case study.

5. Results of the Case Study

5.1 The Case Study: Melrose Arch

The suburb of Melrose is situated in the northern suburbs of Johannesburg, South Africa, close to the Sandton business district. Melrose is a very family-orientated suburb, despite the high number of office parks and important feeding routes to areas like Sandton and Rosebank. Melrose Arch is a mixed-used development situated within the suburb of Melrose. The development comprises approximately 200,000 square metres of mixed-use space. Melrose Arch is a lifestyle destination that breathed new life into the area since its establishment in the early 2000s. It has become a well-known national and international landmark.

Figure 1: Melrose Arch, next to Atholl-Oaklands off-ramp



Melrose Arch is strategically located between the Athol Oaklands and Corlett Drive off ramps of the M1 freeway between Johannesburg and Pretoria. The development enjoys superb visibility from the freeway and is situated approximately 12 minutes from the Johannesburg CBD, 30 minutes from OR Tambo International Airport and 10 minutes from the Sandton CBD. The five kilometer radius around Melrose Arch includes a retail consumer base of 100,000 people within one of the most affluent areas in South Africa.

During 1993, the Mines Pension Fund acquired in excess of 90 freehold erven in the suburb of Melrose North with the intention of initiating a 19 hectare development. In 1997 the site was rezoned to allow for 191,500 square metres of mixed-use bulk, after which earth works began in 1999. During 2000, a further 275,100 square metres of flexible bulk was granted to the developers.

In order to find the appropriate urban design concept for Melrose Arch, the design team referred to a variety of famous, successful developments outside South Africa to determine what characteristics make up the places where people live as well as work and play with a passion that keeps them coming back.

Cities visited included New York, London, Paris and Los Angeles; but somewhat surprisingly, the final inspiration for Melrose Arch came from Harare. According to Graham Wilson from Osmond Lange Architects and Planners, “The

‘pedestrianised’ high street of Harare was a wonderful example of effective urban design.”

Melrose Arch exhibits true elements of New Urbanism and, specifically, the very first principle of walkability. The idea behind Melrose Arch was to break traditional perceptions around space by the creation of a live-work-play environment with pedestrian malls and a bustling café culture.

Figure 2: Pedestrian mall in phase 3



Graham Wilson says New Urbanism is all about creating neighborhoods and active spaces where people want to spend time. At Melrose Arch, every single aspect of the development is designed and planned around the pedestrian, with a maximum of a five minute walking radius between any two points. Every aspect, from the

kerbs on sidewalks to the way different components integrate, as well as security, is planned around the pedestrian.

A major consideration in the design of Melrose Arch was food, which convinces people that this is a place to live, work and play. Restaurants create a welcoming atmosphere around sidewalks and open squares, while the design of individual perimeter buildings allows private spaces for office and residential tenants.

Figure 3: Private gardens of phase 1 residential units



International urban design consultant Paul Murrain, who collaborated on the design of Melrose Arch, says the development provides quality of life because it offers people a 'third place' to frequent. According to Murrain, the first place is where we live, the second place where we work and the 'third place' is on neutral ground, where we can have a real connection with other human beings.

In 2001, the developers completed phase one of Melrose Arch. This included a large office component with a public square, restaurants, boutique shops and apartments. Some apartments in this phase are situated above the restaurants and adjacent to office space.

In 2004, the Mines Pension Fund, now known as Sentinel, made a strategic decision to dispose of all direct property holdings. While Property Partners intended to acquire the existing bulk at the time and not the undeveloped land, Amdec Property Development recognized the value that could be created through further development of Melrose Arch. As a result, Amdec Property Development and Property Partners formed a partnership which acquired Melrose Arch in 2005. Amdec Property Development provided the development expertise in order to develop the remaining bulk in the development. Following the acquisition, the partnership received approval to increase its flexible bulk rights to 315,100 square metres. The total area has subsequently been increased to 359,300 square metres of mixed-use rights.

According to James Wilson, CEO of Amdec Property Development, the partnership's vision for the future of Melrose Arch includes leisure and entertainment properties such as hotels, restaurants, a theatre and cinema complex. Clearly, Melrose Arch is a unique urban environment and not a typical mall or office building.

In 2009, phase two of Melrose Arch was launched, which comprised a second public square with restaurants, “The Piazza”, as well as office space and shops. The retail component included two anchor tenants: Woolworths and Edgars. This component was launched during a recession and as a result it struggled, not only with the usual adjustments of a newly opened centre, but also reduced revenues.

However, according to James Wilson, trade picked up during November and December 2009. Considering that the largest part of the retail component was launched during a recession and vacancy rates are almost non-existent (according to Ulana van Biljon from Rennie Property Management), the retail component of Melrose Arch is positioned well for growth and better economic conditions. But, due to the size of the retail component it is not possible to attract certain large anchor tenants or dictate conditions such as extended shopping hours.

Office rentals in Melrose Arch are currently some of the highest in South Africa while vacancy rates before the recession were below 1%. Planning for the last phase in Melrose Arch started five years ago resulting in the phase being launched during a recession. According to James Wilson the development and its lenders were satisfied with rentals below R200 per square metre. Although there was a decline in demand for office space, targeted rental rates were exceeded despite the recession. Due to the recession, vacancy rates hovered at around 10% during January 2010 (Fife, 2010) but are still decreasing significantly faster than the market trend and is currently less than 2%.

At present, residential units in Melrose Arch only cater for the high end of the market. Units in Melrose Arch were originally priced above market levels and have continued to escalate ever since. In 2004, units sold ranging from 95 to 300 square metres were priced between R1.9 million and R7.5 million. These units are currently marketed to sell at an average rate of R30,000 per square metre and owners achieve superior rental returns due to the safety benefits, facilities and other services offered by the development.

Figure 4: Residential units Phase 1



According to the letting agents based on the Melrose Arch precinct, the premium in rentals achieved in Melrose Arch compared to similar units immediately outside of the development range anything from 25% to 50%.

Melrose Arch is especially well-known for its top restaurants and ambience. Restaurants were instrumental in creating a sense of place with a unique identity and continue to attract many people to the development. During the 2010 FIFA World Cup, restaurants at Melrose Arch achieved their highest ever turnovers.

The two hotels within the development are well situated to serve the large multinational office tenants and attract many local and foreign visitors due to the close proximity of quality restaurants, a state of the art health club and shops.

Figure 5: Melrose Arch Hotel private pool



While office rentals, residential sales and rentals achieve above market returns, much debate exists around the success of the retail component of Melrose Arch. According to James Wilson, the feasibility of Melrose Arch isn't based on return or

total costs, but the margin on the properties developed and sold because of the value that is created within the development.

Having observed a typical day at Melrose Arch, it is evident how people from both within and outside the development embrace the development as their 'third place' where they actively participate in a unique lifestyle and connect with other people.

A typical day starts with visitors arriving at the Virgin Active Health Club. During this time deliveries take place at shops and certain restaurants begin to open.

A little later, office workers start to arrive and fill up lower levels of parking and office buildings. Certain restaurants start to fill as they serve breakfast to office workers, residential tenants and shoppers and health club visitors meet for coffee at their favourite spots.

As shops open for business, more visitors slowly trickle into the precinct. From around noon, restaurants become packed and this lasts until around 2:30pm to 3pm. In the afternoon, retail activity increases, and as the work day draws to a close, offices empty and shops fill up for last minute shopping.

During this time, the second peak time commences at the health club. At night, restaurant activity keeps the precinct alive until hotel and precinct residents return to their accommodation and outside visitors leave.

The continuous activity within the precinct highlights the efficient land use achieved by balancing activity and keeping vitality for the largest part of a day. This all contributes to a safer environment and more efficient use of electricity and infrastructure over a 24 hour period. More importantly, this also illustrates the high demand created for various components of the development due to the nature of the live-work-play environment, as well as the synergistic value created for all participants in this integrated system.

Future plans for Melrose Arch include a third phase residential component. This residential phase is currently in its planning phase and approximately 90% of the units have already been reserved without the need for any marketing campaign. Phases four, five and six will incorporate another hotel, cinemas, shops, offices and apartments.

As a member of the Council for Green Buildings, Amdec Property Development is committed to environmentally-friendly building principles. In the development of Melrose Arch, the developer has contributed to the expansion of the James and Ethel Gray Park adjacent to Melrose Arch, as well as the rehabilitation of the river in the park. Melrose Arch has a district cooling facility that is used to achieve energy efficiency within all buildings. Furthermore, the developer uses sophisticated building management systems that result in further energy efficiencies and significant cost savings for tenants and the management company.

A lot of skepticism exists amongst traditional property developers around the success and profitability of Melrose Arch. Most of these critics' assumptions are based on a traditional approach which focuses purely on the short-term financial performance of one component, for instance retail. Critics are not concerned with the benefits of and need for New Urbanism principles and according to James Wilson they do not consider the fact that Melrose Arch is phased in over years and is only halfway.

Melrose Arch is a test case for New Urbanism. It is important for Melrose Arch not only to prove the success of its principles, but also to be a sustainable investment for its investors. Melrose Arch has the potential to be a true example to traditional South African property developers of how the perceived risks can be mitigated in order to create superior economic benefits while also contributing to building more socially and environmentally sustainable cities.

Findings from the Melrose Arch case study in terms of the perceived risks and risk mitigation are discussed in the structure of the proposed framework for risk mitigation, as constructed from literature. This discussion also includes additional elements of risk and risk mitigation identified in the case study:

5.1.1. Location

One of the risks associated with the location of mixed-use development include the demand for different property types in the area. This demand also includes retail

demand. It is important that the retail component of a mixed-use development can be sustained from the demand in the catchment area of the development. The location of Melrose Arch - adjacent to the M1 freeway between Johannesburg and Pretoria, close to the Johannesburg and Sandton CBDs, 30 minutes from the OR Tambo International Airport and in the middle of a retail consumer base of 100,000 affluent consumers - was a strategic decision. According to Guy Gordon, this location is still one of the development's biggest success factors.

Mark Uhlmann believes the location of a mixed-use development determines its predominant use - and in the case of Melrose Arch, this was the office component. Graham Wilson says each use in the development needs to be able to stand alone and sustain itself and for this reason the location is a key factor for mitigating risk in a mixed-use development.

Another risk associated with the location of mixed-use development is access to the development. The developer might be able to invest in infrastructure and bulk services for the development, but the development needs to have easy access in close proximity to key roads, public transport options and business districts. According to Gordon, due to South Africa's limited public transport, location is even more important here than in other countries.

It is important to also consider safety and security of the larger area when deciding on a location for mixed-use development, as this will directly impact on the success of the development.

5.1.2. Design

Several research participants highlighted design factors that impact on the overall risk of Melrose Arch.

Ratio composition

The ratio composition in a mixed-use development refers to the different individual uses included in a mixed-use development and the size of each individual use in relation to the total size of the development. The question remains whether there is an optimal ratio composition that will maximise value for all components and minimise risk in the development. According to Mark Uhlmann there definitely is an optimal ratio composition for a mixed-use development, although he's unsure whether it's possible to accurately determine what this ratio is.

By contrast, Ulana van Biljon and Vic de Stadler believe there is no best ratio for a mixed-use development, but they say there are optimal sizes for each individual component. For example, retail centres achieve critical mass at a size of approximately 80,000 square metres. In order for retail to achieve optimal returns on its own, it is important to eventually reach this size.

Graham Wilson says each phase has a different optimal ratio. Starting phases should have a limited residential component. By including a few large international corporations as tenants in the first phase, a nucleus may be created; securing big, long-term leases to minimise the risk in the expensive starting phase. Thereafter, residential units will also achieve higher sales values as a result of increased demand to settle in the live-work-play environment.

Some developers start mixed-use development with one large retail component in isolation. Graham Wilson believes that this approach eventually drains the life from the other components as retail is the glue that attracts visitors to the development. Retail at Melrose Arch has been integrated in pockets throughout the development.

Graham Wilson believes each mixed-use development should have a predominant use, which will differ between developments. The predominant use in Melrose Arch is offices, determined by the location as part of the initial strategy. The ratio composition of office to other uses depends on creating the necessary value for office tenants combined with the residential and retail demand in the area. Uhlmann believes the key is to balance activity within the Melrose Arch precinct ideally to have no, or as little as possible, quiet times and therefore reduced congestion during peak times

According to Guy Gordon, the ratio of uses in a mixed-use development is driven by the initial strategy for the development, which should have one predominant use

based on the location and market demand for that location. Furthermore, the ratio is driven by the broader context, the macro economic environment and market conditions. A key component of mitigating risk in terms of the ratio composition of Melrose Arch was to have a flexible basket of rights. (refer 5.1.13)

Synergy through design and integration of uses

Graham Wilson says there are a few important issues that can mitigate risk in a mixed-use environment by ensuring that the intended level of synergy is created between different uses.

Firstly, it is important that the development has a clear boundary around it, like a “room with all the components of the development within it”. However, it is also important not to have any walls or fences that create a feeling of exclusion or isolation. All public space within the development must be open and free to tenants and visitors. The way privacy for tenants was created in Melrose Arch, without any walls or boundaries on the outside of buildings, was through the design of perimeter buildings. All sections of the development are built in the form of a square, with private space on the inside (Figure 6) and aesthetically appealing facades towards the inside, as well as the outside public spaces (Figure 7).

Figure 6: Private square inside office building



Figure 7: Public square



Furthermore, Graham Wilson believes that public squares are magnets and should be used in the design to position a mix of retail and leisure around their perimeter. Regular retail principles of signage that directs foot traffic should get pedestrians to walk past shops between parking and other components of the development.

According to Uhlmann, the layout and design of the development definitely has an impact on office rentals. While large corporate tenants want exposure next to the freeway, due to the location, office space around the square and piazza are let at a premium to smaller office tenants.

Architectural expression

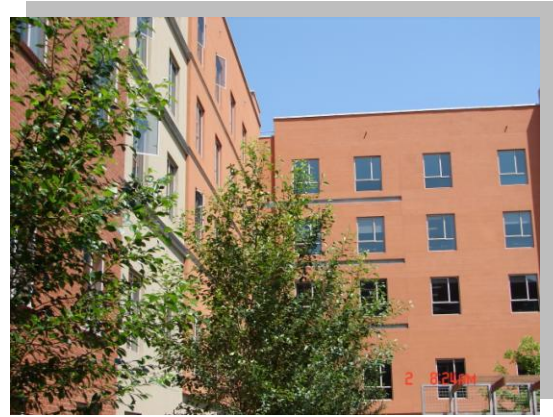
According to Ulana van Biljon, the architectural expression of Melrose Arch is a way to mitigate risk in the retail component of the development. Architectural expression is important to create a sense of place and destination that will attract visitors who will sustain the retail component until critical mass is achieved.

Gordon believes that lessons have been learned in terms of the importance of architectural expression. While the first phases of the development might have included too much architectural expression (Figure 9) at a cost, some buildings in the last phase of the new piazza lack architectural expression (Figure 10). Part of mitigating risk in the development going forward will be to find the appropriate balance.

Figure 8: Phase 1



Figure 9: Phase 3



In terms of property management, Vic de Stadler stresses the risk of too much architectural expression resulting in structures that are difficult and expensive to maintain.

Energy

Gordon says that building according to the standards of the Council for Green Buildings and incorporating efficient building management systems into the design of the buildings undoubtedly adds value to the development's performance.

However, this is fast becoming the norm and will not necessarily be a way of mitigating leasing and sales risk unique to mixed-use development in the future.

Property management

Vic de Stadler highlighted the importance of considering property management during each design phase. While architectural expression in an environment like Melrose Arch is vital, architects must consider issues like maintenance of complex structures. Property managers can provide critical insights during the design phase that will result in lower maintenance costs and more efficient running of the development.

Flexibility

Going forward, Uhlmann believes a way of mitigating risk in the office component of Melrose Arch is to have more flexibility in the design of office space. The average size per floor plate occupied by one office tenant at Melrose Arch is between 500 and 600 square metres, with some offices as large as 2000 square meters. The largest corporate tenant at Melrose Arch is Stanlib who currently occupies a total of 11,200 square metres of office space. Two big sections of office space sharing one lobby is an example of how the design makes it difficult to accommodate smaller tenants, or to accommodate current tenants with additional demand for space. If a tenant's additional demands for space cannot be accommodated towards the end of the lease, this poses a risk to the developer.

Van Biljon believes the design of Melrose Arch, based on new urban principles, makes it very difficult to manage retail space effectively. There is a lot more flexibility in conventional shopping centres as shops can be moved around easily and there is more opportunity to experiment with shop fronts. It is therefore very important to find an alternative way to mitigate risk in the retail component of Melrose Arch, possibly by finding an alternative design with more flexibility.

5.1.3. Financing structure

According to Gordon, the preferred financing structure for mixed-use development is to finance each phase separately and to attract various financial institutions in order to spread their risk.

To mitigate liquidity risk, the developer has initially decided to strategically sell two office buildings as a sectional title scheme. Although part of the decision was based on partnering with an experienced developer, this ensured a large cash injection into the development. This is an example of unique risk mitigation necessary within a mixed-use environment. Cash requirements of the developer are taken into account when planning new phases. By balancing sectional title schemes with annuity income from monthly rentals from offices and retail, as well as possible future life rights from a retirement component, liquidity risk is mitigated in the development.

Gordon says investing in large infrastructure development and bulk services before and during the first phase of the development poses an extraordinarily big risk to mixed-use development. Due to this major upfront investment, only large institutions that have a 30 to 40 year investment horizon, like pension funds, can afford to invest in mixed-use development. Graham Wilson believes that part of mitigating risk in mixed-use development is to have “patient money”; in other words, an investor who takes a long-term view.

The Mines Pension Fund made a strategic decision to dispose of all property investment holdings after significant infrastructure investment was made. This made it possible for the new owner to acquire the development with this large investment having already been made.

5.1.4. Public Sector involvement

Two issues emerged from the research in terms of public sector involvement.

Firstly, Guy Gordon stated the importance of a close relationship between the developer and local authorities in order to ensure future services and approvals. Local council and other authorities are strategic partners of a developer due to the fact that a mixed-use development, like Melrose Arch, is in fact a city in its own right.

With particular regard to parking requirements, it is critical to have a relationship with the local council in order to reduce the number of required parking bays per 100 square metres, as the development grows. It is also important to stay close to council officials as they understand the principles of new urban planning policies, although legislation does not yet address all the issues involved.

Melrose Arch's developer has not made use of any public-private-partnerships, but according to Gordon, they have worked with the Johannesburg City Council and local residents' association in redeveloping the James and Ethel Grey Park and considering future possibilities for its maintenance. This is important to ensure goodwill from the local authorities and surrounding residents.

In fact, all participants agreed that moving services to the control of the developer and away from the municipality is actually one of the primary ways to mitigate risk in mixed-use development. Gordon explained that municipal services are supplied up to the borders of the development but all services within the development are the responsibility of the development company. He says this is definitely a way of mitigating the risk of poor service delivery or disruption.

According to Uhlmann the success of Melrose Arch's office component is due to world class services provided by the developer, including security by design, refuse removal and electricity. Large multinational tenants would not pay the current

rentals should service levels not be of this standard. All these services within the precinct are managed and controlled by the development company.

Providing these services leaves the developer in control, but at a significant cost. Uhlmann says a mixed-use environment such as Melrose Arch creates the economies of scale that make it possible to provide these services privately.

5.1.5. In-house expertise of developer

The development team at Melrose Arch has combined the experience of lessons learned over 17 years, and according to Gordon, these lessons provided a framework for understanding the nuances involved in such a development.

Being a Cape based developer, it was decided to form a joint-venture with a local developer during the initial stages of taking over Melrose Arch from Sentinel, the original owners. It was a key risk mitigation factor for the developer to work with a Johannesburg based developer, because Amdec Property Development had not previously done any development in Gauteng.

Partnering with a top property management company, retail specialists and various architectural firms, as well as employing an experienced management team, are key factors for mitigating risk in Melrose Arch as the developer is assured of access to all the expertise required in a mixed-use environment.

5.1.6. Retail Mix

Due to the adherence to New Urbanism principles, the retail component of Melrose Arch is different from conventional retail centres in the sense that it is integrated with other components, growing with the development.

Melrose Arch competes with several regional shopping centres like Rosebank Mall, as well as mega shopping centres like Sandton City. According to Van Biljon, critical mass in retail is only achieved at a size of approximately 80,000 square metres. Melrose Arch has approximately 40,000 square metres of retail space, which is dispersed and integrated throughout the development. She says the big risk in mixed-use developments like Melrose Arch is bridging the gap between early phases and when critical mass is achieved, as the retail component is too large to be sustained only by other tenants in the development.

Furthermore, Van Biljon says although the integration of retail is an important factor in creating an environment according to new urban principles, this makes it very difficult for retail to be managed effectively. A key factor for mitigating risk is to create a unique destination and experience. The aim of retail at Melrose Arch should not be to compete with retail centres in the area, but rather to attract visitors with its unique live-work-play environment and retail mix. By creating a one-of-a-kind destination, it will be possible for the retail component to sustain itself until it reaches a size where critical mass is achieved.

According to Van Biljon and De Stadler, another critical factor for mitigating risk in the retail component of mixed-use development is to offer a variety of levels of retail. There are not enough wealthy people anywhere to sustain only high end retail. Besides, even wealthy shoppers seek value for money. During economic downturns, mega shopping centres, like Sandton City, always outperform others due to their variety. During a recession, high end shoppers spend less on luxury goods while during growth phases, the lower end of the market buys more expensive items. It is therefore important to have a wide variety and mix to mitigate the risk of economic cycles.

While the retail component of a mixed-use development must be sustainable on its own, it is important to realise that the retail component also plays a role in creating value for other components. The mere fact that the mixed-use environment creates synergy between different uses is a way of mitigating the overall risk of the development.

However, Uhlmann says it is important to consider office tenants in the retail mix as retail helps attract office tenants and allows the developer to achieve higher rentals. Melrose Arch was intended to be a place for the knowledge worker, so the retail mix needs to address the needs of this customer. Planning the retail mix to address the needs of tenants is definitely a way of mitigating risk. Gordon says part of risk mitigation going forward is to get a better understanding of the tenant mix required for Melrose Arch

5.1.7. Entertainment and recreation

According to Fife (2010), a property developer argues that the developers of Melrose Arch have ignored some of the basic rules of retailing by locating it in one of the most competitive retail areas in Johannesburg. In order to mitigate this risk, the developers should build on the uniqueness of the development which, according to the outside developer, is leisure and entertainment. Melrose Arch currently has no cinema, theatre or similar entertainment component. What critics don't realise is the fact that this was always part of the long-term master plan of Melrose Arch, but this plan unfolds through a phased approach.

According to Gordon, it is definitely part of the future strategic direction of Melrose Arch to make use of more events and entertainment to attract visitors. Entertainment, as well as conferencing, will be an excellent way to strategically mitigate the risk of not attracting enough visitors and foot traffic to Melrose Arch.

Ulana van Biljon says although the thousands of visitors during the 2010 FIFA World Cup did not necessarily translate into additional shoppers in the retail components, restaurants achieved much higher turnovers and the development received enormous exposure as a result of hosting the fan park.

It is believed that this will eventually translate into future visitors and help build the development's brand as a destination. According to Van Biljon, entertainment and

outdoor events are important for attracting foot traffic, but the events need to be well planned in order to attract the kind of visitors that translate into shoppers.

According to Vic de Stadler, entertainment in the form of cinemas or a theatre will attract many visitors, more specifically, the kind of visitor that Melrose Arch is after. It is important that the entertainment is not exclusive but rather unique.

5.1.8. Challenges unique to the South African environment

According to Gordon some of the unique challenges of the South African environment have a positive impact on mixed-use development. Issues like crime, a lack of public transport, poor service delivery as well as urban sprawl and limited infrastructure are all reasons why mixed-use development is so relevant in this context. Mixed-use development in fact provides solutions to these challenges.

As a result, mixed-use development in South Africa can demand premium rentals and above market-related sales prices. Uhlmann agrees that security is in fact the single biggest reason all office tenants mention for selecting Melrose Arch as a location. Security cameras are located throughout the precinct and are monitored closely for 24 hours a day, from a dedicated security control room (Figure 10).

Figure 10: Security control room



Apart from excellent security of employees while at work, Melrose Arch also creates a secure environment in which people can eat shop, relax and live. International visitors of multinational tenants do not have to be trapped inside five-star hotels; instead, they can move safely between the office, world-class hotels and quality restaurants.

On the negative side, Gordon regards the socio-political environment in South Africa as a limitation for possible foreign investment. As mentioned under the first risk element - location - he also highlighted the fact that due to a lack of public transport in South Africa, location of a mixed-use development is far more important than in other countries as it needs to be near the limited transport options, as well as business centres and strategic roads.

Another challenge facing South Africa is electricity shortages. Gordon believes this is a large risk to be mitigated as Melrose Arch tenants expect world-class service. The developer is currently investigating the possibility of investing in a gas turbine plant in order to become completely independent of the Eskom grid. However, the cost is estimated at around R100 million.

The risk of a disruption in water supply is mitigated by drawing water from three water feeder points from a “ring main” surrounding the precinct. However, the developer is also investigating the possibility of a back-up water storage facility that will ensure up to 48 hours of uninterrupted water supply to the whole development in the case of disruption.

These are all risks that are unique to mixed-use development in the South African context. The mitigation of these risks comes at a significant cost.

5.1.9. Environmental sustainability

According to Guy Gordon the essence of new urban principles is based on sustainability. Amdec Property Development is an accredited member of the Council of Green Buildings. However, he believes that true sustainability means a balance between social, commercial and environmental factors; not just the impact of the development on the environment.

Previously perceived as a fad, environmental sustainability is becoming the norm and is not necessarily unique to mitigating risk in mixed-use development. Mark Uhlmann states that it is definitely a competitive advantage to meet the requirements of the Council for Green Buildings, as large corporate tenants need to meet these requirements. However, this is applicable to any office development and not unique to mixed-use development.

It appeared from all interviews that the efficiencies related to environmentally sustainable building practices result in cost savings for tenants and the development and can therefore be regarded as a factor for mitigating risk. However, no evidence was found that this is unique to mixed-use development.

Graham Wilson believes that due to the principles of urban land economics of land scarcity and increase in demand in close proximity of centres of activity, mixed-use development can achieve higher rentals due to demand for location. As a result of these higher rentals, the developer of a mixed-use development like Melrose Arch is able to build better and more environmentally sustainable buildings.

5.1.10. Cooperation of Strategic Actors

Ongoing cooperation between strategic actors is a unique factor for mitigating risk in a mixed-use development, according to all participants. While traditional property development requires cooperation by strategic actors through certain stages until

completion, mixed-use development is an ongoing, long term project and all role players need to stay involved over the long term.

An example of how risk could have been mitigated better in Melrose Arch through greater involvement was the design of the latest phase with the new piazza. According to Graham Wilson the strategic architects and planners were not fully consulted in the design and, as a result, some buildings lack architectural expression; also, the pedestrian was not considered in the design of each element of the buildings. Certain elements now need to be changed, for instance, structures to protect pedestrians from rain along sidewalks. These are important factors that determine how visitors experience the development and will affect its overall performance.

According to Gordon mixed-use development is unique in the sense that it is like a city within its own right, repute with its own “mayor”. There needs to be a sophisticated management that is involved on an ongoing basis from a strategic as well as an operational perspective.

5.1.11. Strategy

According to Gordon it is critical for a developer to bear in mind the master plan of a mixed-use development. Mixed-use developments like Melrose Arch take up to 30 years to complete and a critical component of mitigating risk is to have the end

result in mind. This will allow for all components to be designed in an integrated way that will facilitate synergy between the different uses.

It is this master plan that allows a developer of a mixed-use environment to accept below market returns in certain components during times of growth and development. This plan will also indicate which phases will drive the highest returns during certain periods of the development. However, a flexible basket of rights will make it possible to adapt the components of the master plan according to changes in property cycles of different uses, although the final plan will stay as intended.

5.1.12. Parking

One of the biggest problems any commercial or retail development faces is parking. The Johannesburg City Council parking requirements differ for various uses. Providing the amount of parking required by the Johannesburg City Council is very expensive.

Traditional property development has to comply with these requirements and do so cost-effectively by creating wide open parking lots that add to urban sprawl. According to Gordon, new urban principles seek to find alternative solutions to parking, and in the case of Melrose Arch, this has been achieved through structured, underground parking.

A seamless super-basement was created with various vertical access points to a “false” ground level. However, structured parking is extremely expensive, at a current estimated cost of approximately R140,000 per parking bay.

Managing the use of parking is critical in mitigating risk in Melrose Arch. This is achieved through the integration of uses, which provides the opportunity to balance out parking needs between different uses. High parking requirements for commercial and retail use may be reduced by City Council based on the average **contra-cyclical parking patterns** of land uses. This is achieved by keeping lower levels of parking dedicated for office use during the day but opening it up during night.

The super-basement, which stretches underneath the whole development and provides access to anywhere within the development, also mitigates this risk.

According to Ulana van Biljon parking plays an important role in retail. Unfortunately, basement parking poses a problem for retail as it is perceived as unfriendly and visitors do not always know where exactly they should park in the development. This risk needs to be mitigated through the use of clear and friendly signage and sufficient vertical access points.

Figure 11: Clear signage at access point from basement parking



The intelligent use and navigation of parking has been highlighted by Gordon as one of the key areas for mitigating risk in the development going forward.

5.1.13. Flexible basket of rights

Land use rights are approved by the Johannesburg City Council. In order to successfully develop a mixed-use environment, a developer has to obtain a total amount of bulk rights which is broken down into a total approved bulk for each individual use within the development. A key component of mitigating risk in terms of the ratio composition of Melrose Arch was to employ a flexible basket of rights of which the total sum of rights per individual use exceeds the total approved bulk for the development (example – Table 3). This means that the developer could push and pull from different uses as market conditions changed while the predominant use always stayed in line with the master plan.

Table 3: Example of flexible basket of rights

Land use	Bulk (square metres)
Office	200,000
Residential	90,000
Retail	90,000
Public space	20,000
Total	400,000
Total approved bulk	360,000

According to Guy Gordon this is the key to gaining the benefits of diversification in a mixed-use development. He explains how obtaining these rights upfront when designing the development's master plan was critical in mitigating risk in Melrose Arch. A flexible basket of rights that exceed the total approved bulk, as explained above, allow the developer to adapt future plans based on changes in the economy, market demand and the different property cycles relating to different use. By aligning the planned development phases with the expected market conditions, the overall risk in the development can be reduced.

5.1.14. Single ownership

According to Gordon single ownership posed a major challenge to the developers of Melrose Arch in the sense that mixed-use development requires large amounts of finance. However, single ownership also plays a big role in mitigating risk in the development because the developer has full control over all operations.

5.1.15. *Sophisticated property management*

All participants agreed that mixed-use development is different from any traditional property development in terms of property management. Vic de Stadler and Ulana van Biljon agreed that due to the different uses in mixed-use development, property management requires specialist expertise to deal with each use. More importantly, mixed-use development also requires a generalist type of manager who can not only deal with problems in isolation but integrate the different uses. The manager also needs to see the impact of decisions on the development as a whole.

Mark Uhlmann firmly believes that mixed-use development requires a different kind of manager and massively unique property management expertise. He considers the right property management team to be a key factor of mitigating risk in a mixed-use environment.

De Stadler explains that although the developer has formed strategic partnerships with many external suppliers, many of these are the same suppliers who provide services to the Johannesburg City Council, for example, to enable the synchronisation of traffic lights. The only reason why services provided on the Melrose Arch precinct are more efficient than elsewhere is because these suppliers are managed and guided by a sophisticated property management team.

5.1.16. Residential issues

One of the lessons learnt during the first phase of Melrose Arch, according to Gordon, is never to mix residential units in the same building with any other use. Although it is important to integrate the different uses successfully, residential components need to be separated from other uses to avoid dealing with numerous complaints and issues from residential tenants, like noise from restaurants below apartments. Residential units are usually sold as sectional title units, which also complicates dealing with the different demands of retail and commercial tenants situated within the same building.

Most participants believe that a more affordable residential component is a way of mitigating risk in Melrose Arch. De Stadler and Van Biljon believe this will not only add foot traffic to the retail component, but will specifically create a demand for longer shopping hours and attract desired visitors to the development.

Graham Wilson and Guy Gordon believe that a more affordable residential component for younger professionals will bring vitality to the development. This is part of the strategy for Melrose Arch going forward.

However, Uhlmann believes that all people are aspirational and that future residential phases do not have to be more affordable. He maintains that the lower to middle income group currently working in the development are not necessarily future residential buyers. Uhlmann says there is little correlation between the

people who work in the development and those who live there as households inevitably contain other people who have to travel to work elsewhere.

Working in the development does not necessarily attract residential buyers as Melrose Arch is about attracting a person who wants a very specific lifestyle. According to Uhlmann the area in which a mixed-use development is situated determines the type of residential space that should be offered. Melrose Arch is located within a very affluent area that offers very expensive properties. He also believes that the residential component in the development is too small to make a significant impact in foot traffic for the retail component as it is the larger catchment area that makes the retail component sustainable.

5.2 Conclusion

Melrose Arch is a mixed-use development designed according to the principles of New Urbanism. Findings from the case study on Melrose Arch were derived from direct observation, participant observation, documentation and, most importantly, in-depth interviews with key decision makers in the development process of Melrose Arch.

These findings were consolidated according to the structure of the risk framework that was constructed from literature. The case study results highlighted the risks that are unique to Melrose Arch and also provided insight around the relevance of these risks to other mixed-use property development. The results further delved

into the reasons why these elements posed a risk to the development and how they were mitigated by the developer. At the same time, the findings highlight areas where the developer could have mitigated risk differently and how they are planning to do so in the future.

Figure 12: Office buildings in Phase 1

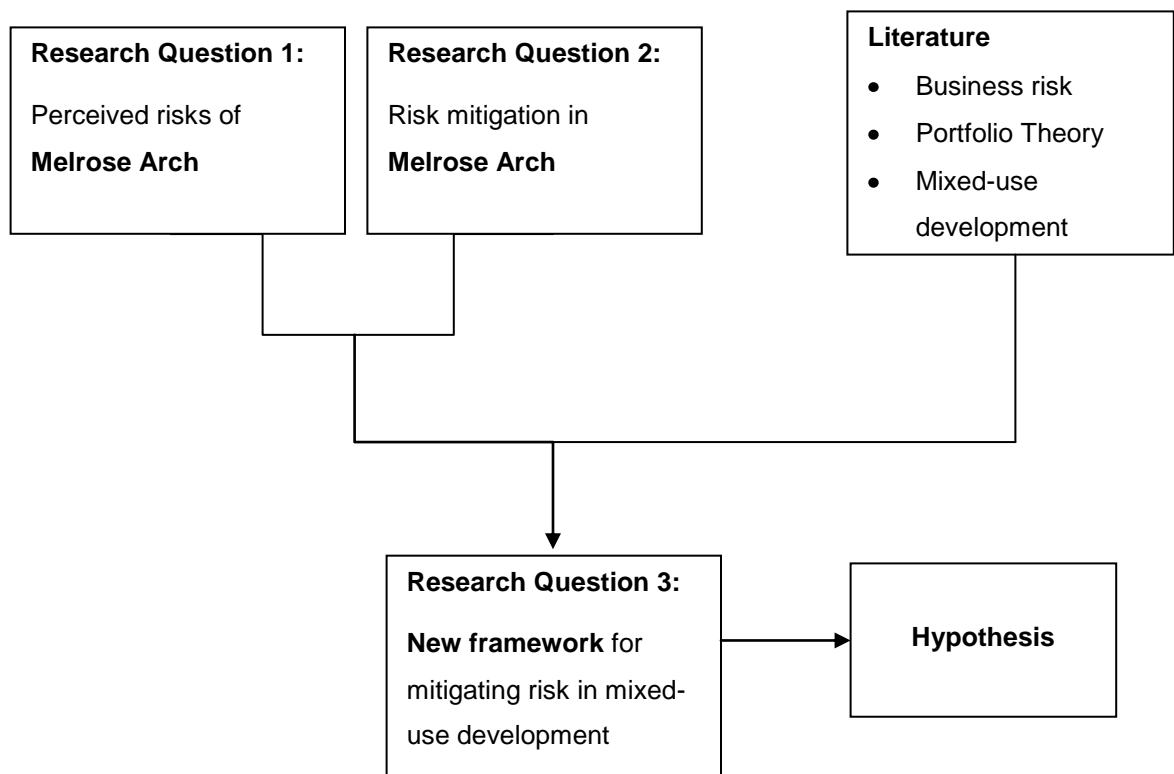


6. Discussion of results

6.1 Introduction

The discussion of the research results revolves around the three individual research questions in order to draw a conclusion based on the hypothesis.

Figure 13: Research methodology



Answers to research question one highlight the risks relating to Melrose Arch as perceived by the developers. A discussion of research question two examines in detail the process of risk mitigation that was followed by the developers of Melrose

Arch. This discussion serves to explain the deep insights that were gained as a result of exploratory and case study research methodology.

In answering research question three, the results from research question one and research question two were evaluated against the available literature on mixed-use development. Having interpreted the insights gained from studying Melrose Arch and the available literature, chapter four's proposed framework for risk mitigation in mixed-use development is revised in order to construct an expanded framework.

In conclusion, answers to all three research questions are interpreted in order to draw a final conclusion about the central hypothesis or research proposition: Melrose Arch's unique set of risk factors makes it riskier than traditional property development.

6.2 Research Question One: Risks unique to Melrose Arch

What are the risks perceived by the developers of Melrose Arch that are not experienced in traditional property development; and why are these perceived risks unique to Melrose Arch?

All participants in the case study on Melrose Arch believe that there is a set of risk factors that are unique to mixed-use development. From the case study, a set of risks were identified that have unique relevance to Melrose Arch:

Bulk services

Investing in large infrastructure and bulk services for the whole development before and during the first phase of the development posed a sizable risk to Melrose Arch.

Disruption in world class services

A large part of the success of Melrose Arch is due to the world-class levels of service, including security, refuse removal, electricity, water supply and general property management. Any disruption or compromise in service levels will have a large impact on the reputation and success of the development.

Parking requirements

Although Melrose Arch's super-basement mitigates many risks in the development and creates a precinct designed around the pedestrian, this type of parking has a major financial implication for the development. Managing and navigating parking efficiently in order to reduce the minimum number of bays required for the development may negatively impact the long term financial performance of the development.

Adherence to principles of New Urbanism

Many New Urbanism principles present in Melrose Arch provide challenges in terms of the financial performance of individual components. An example is the retail component integrated throughout the development, which makes it difficult to manage and achieve critical mass. Adhering to the principles of New Urbanism is

particularly challenging in a society and industry that is accustomed to urban sprawl and false perceptions about the role of mixed-use development in creating more sustainable cities.

Retail foot traffic

As a mixed-use development designed around the principles of New Urbanism, Melrose Arch's retail component is integrated throughout the development. As a result, the retail component grows over the long term as the development grows. As it's located close to other regional and super shopping centres and not having the scale that ensures critical mass, attracting insufficient retail foot traffic poses a real risk to Melrose Arch.

Changes in market conditions and property cycles

Due to the size and scale of Melrose Arch, changes in market conditions pose a substantial risk to the development. Planning and design of the latest phase in the development took place before the global financial crisis and, as a result, the phase was launched during an economic recession. A large part of the phase included retail space.

Changes in property cycles pose a risk to any property developer and Melrose Arch is no exception. The Melrose Arch case study illustrates how this risk is even greater in mixed-use development because the developer has to consider various property types with different cycles as well as how to create the maximum value for

the whole development by aligning future phases with predicted changes in property cycles.

Lack of expertise in development and management

Due to the complexity of Melrose Arch, integration between so many different components and the ongoing operational requirements of different property types in a controlled urban environment, it is of utmost importance that the developer has access to expertise in all property types as well as sophisticated general management expertise.

Non-renewal of long term leases (due to inability to accommodate changing needs of large office tenants)

As the strategy behind the development was to create a place for the knowledge worker, the predominant use at Melrose Arch is office space. As a result, many large corporations are based at Melrose Arch due to the benefits of the live-work-play environment. However, should the development not be able to cater for the evolving needs of one of these large tenants, termination in leases could have a significant impact on its cash flows. In particular, the design of office space occupied by individual tenants limits their flexibility within the development.

Synergy among different uses

According to Rosta (2007), developers, business tenants and residents of mixed-use developments all enjoy the value and potential created through synergy among

the different property types - and Melrose Arch is no exception. The way the developer designs and manages this synergy will impact on the performance of the individual components and determine the development's overall success.

Due to its size and scale, Melrose Arch has a long-term master plan. As a result, components like retail may not be able to achieve optimal returns in the initial phases. Value created through synergy is what makes the development sustainable through the period of growth.

Crime (safety)

One of the unique challenges of the South African environment is dealing with high levels of crime. Due to the nature of Melrose Arch as a public, urban environment, crime is a real threat to the development. Safety and security form a large part of the reason why tenants and visitors choose to be at Melrose Arch. Should this safety be compromised, the reputation and future success of the development will be placed at risk.

Summary

Although some of the aspects discussed above are also included in the list of top risk factors that apply to property development in general, as identified by Newell *et al* (2003), these specific risks are discussed here because they have a unique relevance to mixed-use development.

A consolidation of the risks that apply to any type of property development (Newell *et al*, 2003) as well as the findings in terms of risks unique to Melrose Arch was used to construct a comprehensive list of risks that may apply to mixed-use property development.

Table 4: Risk factors in Melrose Arch

Risk factor	Applicable to all property development	Unique relevance to mixed use development
Environmental	X	
Time delay	X	
Land cost	X	X
Acquisition terms	X	
Approval	X	
Cost increase	X	
Political	X	
Experience and expertise	X	X
Engineering	X	
Market	X	X
Delivery timing	X	
Bulk services and infrastructure		X
Disruption of services		X
Parking requirements		X
Adherence to principles of New Urbanism		X
Retail foot traffic		X
Property cycles		X
Inconsistent brand identity		X
Non renewal of lease	X	X
Synergy between different uses		X
Crime (safety)		X

A key finding in this research is that the above risks can be divided into two categories: firstly, those risks that apply in principle to the planning and development of a specific phase in a mixed-use development and, secondly, the risks that apply to the operational and strategic management of the overall

development over the long-term. This is similar to the categorisation of risks in property development according to Newell *et al* (2003).

Table 5: Categorisation of risk factors in Melrose Arch

Planning and development	Operational- and strategic management
Environmental	Experience and expertise
Time delay	Market
Land cost	Disruption of services
Acquisition terms	Parking requirements
Approval	Adherence to principles of New Urbanism
Cost increase	Retail foot traffic
Political	Property cycles
Experience and expertise	Inconsistent brand identity
Engineering	Non renewal of lease
Market	Synergy between different uses
Delivery timing	Crime (safety)
Bulk services and infrastructure	
Parking requirements	
Adherence to principles of New Urbanism	
Property cycles	

6.3 Research Question Two: Mitigation of risks - Melrose Arch

How did the developers of Melrose Arch mitigate the perceived risks of this mixed-use property development and how do they plan to handle them in the future?

The case study provided insights on how the developers of Melrose Arch mitigated the perceived risks in the development and how they plan to diminish the potential effect of these risks going forward. In order to present a sequential process for mitigating risk in Melrose Arch, a framework was constructed that covers the various stages of the development, from planning to completion.

Table 6: Sequential process of mitigating risks unique to Melrose Arch

Risk mitigation in Melrose Arch
Stage 1 – Strategy formulation and planning (Pre-construction)
Development strategy and lifestyle positioning
Finance: Long-term investment horizon
Design of Master Plan
Single ownership
Stage 2 - Land acquisition, bulk services and infrastructure
Value Engineering
Public Sector involvement
Stage 3 – Phased approach
<i>Pre-construction</i>
Design of individual phases
<i>Ratio composition of different uses</i>
<i>Architectural expression</i>
<i>Property management</i>
<i>Flexibility</i>
Finance: Consider development liquidity requirements and various financial institutions' exposure
<i>Contract negotiation</i>
Contract to building contractors during downturns
<i>Post-construction</i>
Ongoing strategic alignment and lifestyle positioning
In-house expertise of developer
Services under control of developer
Market conditions and property cycles
Parking
Sophisticated property management
Retail mix
Entertainment, conferencing and recreation
Ongoing involvement of strategic actors

6.3.1 Stage 1 – Strategy formulation and planning

6.3.1.1 Strategy, location and lifestyle positioning

A key finding from this research is that mixed-use development such as Melrose Arch is different from traditional property development in the sense that it requires

a long term **strategy**. Business strategy is about aligning an organisation's competencies with the trends and opportunities in the environment and positioning the product or organisation appropriately to take advantage of these opportunities (Porter, 1996). Mixed-use development is in fact a business that requires a vision, strategy, management team and various ongoing strategic partners.

Part of formalising this strategy and master plan is the **location** of the particular mixed-use development. In the case of Melrose Arch, the location determined the predominant use of the development to be office space. As a result of the location close to the primary business districts and strategic roads, the vision for Melrose Arch was to create a place for the knowledge worker. This vision drives all components of the development. However, the retail component of Melrose Arch also depends on the larger catchment area for retail foot traffic.

A sustainable strategic position requires trade-offs and is about preserving what is distinctive about the organization (Porter, 1996). In the same way that any other business requires a brand positioning, Melrose Arch requires a very specific lifestyle positioning. Melrose Arch is not an isolated property development but is in fact an urban area or town in its own right. The way that people will live, work and play within the development is what attracts tenants and visitors to the development.

The design, layout, tenant mix, facilities as well as services within the development all need to be closely aligned with the lifestyle positioning of the development in order to attract the right tenants and visitors. This lifestyle positioning and alignment is an ongoing process due to the long-term development nature of mixed-use developments such as Melrose Arch. Even after completion of the master plan, Melrose Arch will still remain a business with financial goals and various stakeholders. Ongoing alignment will ensure the sustainability of the development post completion.

6.3.1.2 Finance: Long term investment horizon

Critical to Melrose Arch's existence was an initial investor who could afford to take a long-term view on returns, namely the Mines Pension Fund. So-called 'patient money' mitigates risk in a development as it allows for enough time to build the right components and foster the necessary synergy to create long-term value. The current developer also mitigates risk by considering the long-term performance of the development.

According to Daniel (2000), the most effective risk mitigation strategies address both positive and negative aspects of a project with a *long-term* view in mind.

6.3.1.3 Flexible basket of rights

Mixed-use development such as Melrose Arch is a long term process. Over many years, many changes will occur in the market, whether in terms of property cycles, macroeconomic conditions or changes in trends. A critical part of the success of Melrose Arch is being able to absorb changes in market conditions while still keeping to the master plan for the development.

The only way to mitigate this risk is to have an approved flexible basket of rights at the start of the development. This approach allows the developer to ‘push and pull’, adjusting different uses as market conditions and property cycles change. Different phases may be planned in line with property cycles to ensure optimal value creation for the whole development. According to the principles of modern portfolio theory, a developer can achieve an even lower overall risk as a result of diversification if a flexible basket of rights is available from the very beginning.

6.3.1.4 Design of Master Plan

One of the most significant ways of mitigating risk in Melrose Arch has been to keep in mind the master plan of the development, using it to guide all decisions. Mixed-use development like Melrose Arch can take up to 30 years to complete and the master plan allows for all components to be designed in an integrated way that facilitates synergy between the different uses.

The urban and architectural design of Melrose Arch has proved itself to be pivotal to the mitigation of several risks in this mixed-use development. The urban design around the pedestrian is at the core of Melrose Arch's identity and is what makes the development so attractive.

The composition of the various elements of Melrose Arch needs to consider the synergy that will be created between the different uses. Although there is no evidence regarding an optimal ratio composition, the vision, strategy and location determine the predominant use with which other uses should be aligned. However, there are certain risk mitigation factors that can be applied to the design of each phase of the development.

The first phase of a mixed-use development may be compared to the launch phase of a new business or product. In Melrose Arch a certain identity and sense of place had to be established before certain components of the development could become successful.

While this sense of place was being created, a way of mitigating risk in the development was to limit the residential component in the first phase of the development and to capitalise on long-term leases of large office tenants. Quality restaurants and a unique, safe urban environment, combined with the activity from large office tenants and a small retail component, all helped create a sense of

place and lifestyle identity while limiting the variability that could increase risk in the development.

After the first phase had been successfully completed and a nucleus established, the demand for residential units in the development increased and, as a result, residential units achieved higher sales values and rentals.

In the case of a development like Melrose Arch, based on true New Urbanism principles, the retail component needs to be integrated in pockets throughout the different phases of the development. Although the integration mitigates risk as it creates synergy between the different uses, this integration increases the risk in the retail component due to the fact that critical mass will only be achieved in the later phases of the development. This risk is mitigated by focusing on the creation of a *unique destination* that will attract foot traffic to the development.

Another way of creating a unique destination in order to mitigate risk in a mixed-use development is to include *entertainment, events and recreation* in the composition of the development. In the case of Melrose Arch, the Virgin Active health club, outdoor events such as the 2010 FIFA World Cup Fan Park and conferences and functions held in the development attract many daily as well as once-off visitors to the development. Not only do these facilities create value for office and residential tenants, they also give other people a reason to visit.

Table 7: Example of master plan - bulk rights (square metres)

Mixed use strategy and master plan	Public spaces	Office	Retail	Entertainment and recreation	Residential	Total
Phase 1 strategy	10,000	100,000	20,000			130,000
Phase 2 strategy	20,000			15,000	60,000	95,000
Phase 3 strategy		100,000	30,000	15,000		145,000
Phase 4 strategy	20,000	80,000	30,000		60,000	190,000
Mixed-use master plan	50,000	280,000	80,000	30,000	120,000	560,000

6.3.1.5 Single ownership

One of the challenges facing Melrose Arch is single ownership. However, this has also turned out to be one of the key risk mitigation factors as it allows the developer to stay in control of the whole development and ensure consistency and alignment between the development strategy and aspects like design, services, tenant mix and marketing.

6.3.2 Stage 2 - Bulk services and infrastructure

6.3.2.1 Value Engineering

Due to the large amount of capital required for initial bulk services and infrastructure, risk at the start of Melrose Arch was extraordinarily large. This risk in mixed-use development may be mitigated through proper value engineering and making sure that the developer does not overcapitalise in the initial phases, while still allowing for future phases to link seamlessly into bulk services.

6.3.2.2 Public Sector involvement

Adams *et al* (2005) argue that private sector investment depends on the facilitating role of public sector and, therefore, public sector involvement is a key risk reduction issue. Although the current developers were not part of the initial infrastructure development of Melrose Arch and therefore did not make use of public-private-partnerships, such partnerships can be a way to mitigate risk in the initial development phase.

The developer maintains close relationships with public sector because of its impact on future approvals. In a political economy the control of information as a result of public and private sector cooperation may enable a firm to obtain disproportionate bargaining strength in the marketplace (Adams *et al*, 2005).

6.3.3 Stage 3 – Phased approach

Risk mitigation in Melrose Arch is aided by following a phased approach and planning phases in manageable sizes. For each phase, the normal categories of property development risk apply (Newell *et al*, 2003):

- Pre-construction risk
- Contract negotiation risk
- Formal commitment risk
- Construction risk
- Post-construction risk

However, within these categories there are certain risk mitigation factors that are unique to a mixed-use development such as Melrose Arch, over and above all the normal property development risks that need to be mitigated within these categories.

Pre-construction

6.3.3.1 Design of individual phases

Architectural expression in Melrose Arch is central to creating value for all components in the development. While the architectural design of the development creates the sense of uniqueness and identity that's in line with the lifestyle positioning of the development, the sense of place created through the design also determines the experience of shoppers and restaurant patrons.

Although architectural expression is a key risk mitigation factor, it needs to be balanced in terms of building and maintenance costs. Highly complex design often increase building costs and make it very difficult for property managers to maintain these structures, which also result in additional costs that will eventually lower the overall return of the development. The key is to find the optimal balance of architectural expression vs. functionality. An important lesson learned in Melrose Arch is that the initial phases need to have a higher level of architectural expression because of the importance of creating a unique identity.

Another lesson learned from Melrose Arch that was not part of the initial risk framework is the fact that the design of office space needs to be more *flexible* in order to mitigate the risk of large tenants not renewing their leases due to the inability to accommodate their changing needs towards the end of their lease period.

Due to the challenges associated with integrated and unconventional retail in a development like Melrose Arch, more flexibility in the design can also mitigate risk in the retail component. Property managers of the retail component should be able to move stores around more easily and accommodate tenants' needs.

It is critical that the design of a mixed-use development should consider *property management* issues. The operational efficiency and cost effectiveness of property management can be maximised if property managers are included in the design of each phase. According to Richter (2006), the success achieved by property managers in accommodating different tenants and communities 'under one roof' depends largely on how the development was designed and built.

According to Richter (2006), developers must ensure that a mixed-use development contains common areas and features that allow diverse tenants to engage without encroaching on one another's private space. In Melrose Arch this risk was mitigated through the design of perimeter buildings with internal private spaces and wide open public spaces on the outside.

6.3.3.2 Finance

Due to the size and scale of a development like Melrose Arch, financing requirements create high levels of risk. There are various ways to mitigate financial risk in mixed-use development.

According to Rosta (2007), lenders assess each component of a mixed-use development separately. The research findings also highlighted the fact that financing each phase separately limits the financial risk to one component of the development and makes it easy for different banks to assess the risk of individual phases. Financiers struggle to assess the risk pertaining to mixed-use development and therefore follow a traditional approach when financing the different uses.

A way of mitigating risk for both the developer and financial institutions is to finance the various phases or components through different financial institutions. Exposure to several financial institutions lowers the overall risk profile of the developer as viewed by possible future financiers.

In order to mitigate liquidity risk, mixed-use development allows the opportunity to develop certain buildings or phases as separate legal entities. By selling an office building as sectional title, the developer received a significant cash injection. Likewise, residential units are sold, making cash available. The potential of developing retirement units on a life rights basis can be used to create additional

annuity income in Melrose Arch. By capitalising on these opportunities in mixed-use development, in line with the funding requirements of the developer, liquidity risk can be mitigated.

Apart from the benefits of environmental sustainability, energy efficiency and sophisticated building management systems provide additional ways to control costs for tenants as well as the developer.

Contract negotiation

A unique opportunity for Melrose Arch to mitigate risk lies in the fact that agreements can be negotiated with contractors during economic downturns that result in lower building costs and much higher feasibility of the overall development. What makes this possible is the fact that land, bulk services and a flexible basket of rights are in place, allowing the developer to plan phases according to changes in market conditions and different property cycles and, therefore, capitalise on low building costs during downturns.

Post-construction

Upon completion of the first phase, a number of risk mitigation factors apply to the long-term operational and strategic management of the development. The risks mentioned above are tabled as follows:

Table 8: Post construction risks

Operational- and strategic management
Experience and expertise
Market
Disruption of services
Parking
Adherence to principles of New Urbanism
Retail foot traffic
Property cycles
Inconsistent brand identity
Non renewal of lease
Synergy between different uses
Crime (safety)

These risks are mitigated in the following ways.

6.3.3.3 Ongoing strategic alignment and lifestyle positioning

The success of Melrose Arch is largely due to continuous alignment with the initial master plan. Once the developer has formulated a clear vision, strategy and lifestyle positioning for the development, it is critical to align the architectural design, level of services, tenant and retail mix, rental rates, sales values as well as marketing of the development with the original strategy and lifestyle positioning. This is an ongoing process that requires regular review by a sophisticated daily management team.

6.3.3.4 *In-house expertise of developer*

In-house expertise in all property types is critical to the success of mixed-use development. Where a developer lacks expertise it is better to partner with another firm in order to access expertise. Unique to mixed-use developments such as Melrose Arch is the fact the business requires generalists who can manage and integrate across different property types and consider the impact of decisions on the development as a whole.

Amdec Property Development did not have any experience in the Johannesburg market when they initially took over the development with Property Partners, but formed a strategic partnership with a local developer in the initial stages of their involvement. The current developer still forms strategic partnerships in each area where expertise is needed. Risk is mitigated by maintaining long-term strategic relationships with a sophisticated property management company, architectural firm and other consultants, and employing competent managerial skills in all components of the development.

6.3.3.5 *Services under control of developer*

Melrose Arch is positioned as a premium development that attracts some of the highest rentals in South Africa and whose tenants demand uninterrupted, world-class services. These include water and electricity supply, security services, refuse removal, traffic flow and property maintenance. Tenants' expectations are met because Melrose Arch is a private property and the developer has always been

responsible for these services. Municipal services are only provided up to the borders of Melrose Arch.

6.3.3.6 Parking

Richter (2006) highlights the complexity of *parking* in a mixed-use development. The cost attached to parking space has a significant impact on the overall cost and financial performance of Melrose Arch. City Council has different minimum parking requirements for different uses.

According to Richter (2006), the value of parking spaces in the industry is measured by the amount of times they turn. Long-term parking users should be pushed to the least desirable areas, while convenient stores should have parking available that's close by.

At Melrose Arch, the seamless super-basement enables the developer to manage the use of parking bays intelligently and navigate parking efficiently in order to justify a lower average minimum number of required parking bays. Although this super-basement or structured parking comes at a substantial cost, it not only facilitates better access and adherence to New Urbanism principles, but also results in a lower total minimum number of parking bays required by City Council. The integration of uses within the development provides the opportunity to balance out the parking requirements of the different uses.

6.3.3.7 *Sophisticated property management*

Due to the levels of integration between different property types, the long-term nature and ongoing operational management of Melrose Arch, the development requires a property management team that is more sophisticated than those operating in traditional property developments.

Property management at Melrose Arch requires general business management skills as well as specialised expertise in all property types. This risk is mitigated through a contract with a sophisticated property management company and a strategic management team for the development. Service levels of suppliers with which the developer formed strategic partnerships largely depend on the management and intervention of the expert property management team.

6.3.3.8 *Retail Mix*

The retail component of Melrose Arch started off with very exclusive shops. In the latest phase, a wider variety of retail was included across different levels. However, a challenge Melrose Arch faces is the fact that the retail component is not big enough to achieve critical mass, as well as its position close to other regional and super shopping malls. The way the retail specialists and developer are currently mitigating the risk of insufficient foot traffic is by focusing on the positioning of the development as a lifestyle destination. The developer also keeps very close relationships with tenants through the retail specialists in order to ensure they are

accommodated through difficult times and retained in good times. This is discussed further under research question three.

The inclusion of lifestyle tenants in Melrose Arch is an example of how the developer mitigates risk and creates synergy in the development. The Virgin Active health club attracts many visitors from outside the development on a daily basis. As a result, these visitors use other facilities in the development, from restaurants and shops to other convenience facilities.

In this way, the development provides a sense of community, both for tenants and visitors. By designing the tenant mix around the lifestyle needs of residents they are encouraged to stay within the live-work-play environment rather than visiting other retail or lifestyle centres. The retail mix helps differentiate the mixed-use development as a live-work-play environment.

Unlike more conventional mixed-use developments, the retail component of Melrose Arch grows systematically as the development grows. In order to stay true to the principles of New Urbanism, Melrose Arch includes retail in small pockets within each phase of the development. This integrated retail model brings life to the rest of the development, but at the same time poses a large risk to the developer. The developers of Melrose Arch mitigate this risk by creating and promoting a unique lifestyle destination in order to attract foot traffic that will make the retail component sustainable.

6.3.3.9 Entertainment, conferencing and recreation

Entertainment and recreation is a strategic aspect of mitigating risk in Melrose Arch. The development's retail specialists support the relevance of events and entertainment in mitigating risk, but evidence from the 2010 FIFA World Cup events highlight the fact that the events need to be planned in order to attract the kind of visitors that will translate into additional retail foot traffic.

Due to the predominant use of office space in Melrose Arch and the strategic location of the development, conferencing has been identified, together with events, as good ways of attracting consumers and creating additional revenue streams. This is discussed further under research question three.

6.3.3.10 Ongoing involvement of strategic actors

As discussed in chapter five, valuable lessons are to be learned in Melrose Arch in terms of how the ongoing involvement of strategic actors can impact on the overall success of the development. Due to the long-term nature of the development, all typical role players in the property development process need to stay involved throughout the realisation of the master plan.

A very important difference between Melrose Arch and traditional property development is the fact that it has become a town in its own right, which requires ongoing strategic and operational management. This is discussed further under research question three.

6.4. Research Question Three: A new framework for mitigating risks unique to mixed-use development

What is the relationship between the perceived risk and risk mitigation of Melrose Arch and current theory and literature on risk in mixed-use property development?

An understanding of how the perceived risks are mitigated in Melrose Arch contributed to an expanded risk mitigation framework. The following discussion is an evaluation of whether or not a particular element should be included in the expanded framework for risk mitigation in mixed-use development.

According to Nersesian (2004), risk in projects takes the form of negative cash flows. The question is whether that particular element of risk mitigation will result in a positive cash flow for the whole development in the long-term, or at least prevent any possible negative cash flows caused by the associated risk variable, as well as whether or not it is unique to mixed-use development.

This framework includes the additional factors for risk mitigation that were highlighted in the case study. It excludes those factors that were originally included, but which research proved were not unique to mixed-use development.

Table 9: A new framework for mitigation risks unique to mixed-use development

Risk mitigation unique to mixed use development	Business Risk	Legislative Risk	Financial Risk	Liquidity Risk	Inflation Risk	Management Risk	Interest rate Risk
Development strategy and lifestyle positioning	X		X			X	
Flexible basket of rights	X	X	X	X			X
Single ownership	X	X				X	
Location	X	X					
Design							
Ratio composition	X			X			X
Synergy through design; integration of uses	X						
Architectural expression	X						
Property management						X	
Flexibility	X		X				
Retail mix	X				X		X
Entertainment and recreation	X						
Challenges unique to the South African business environment	X	X				X	
In-house expertise	X					X	
Municipal and government involvement	X	X				X	
Cooperation of strategic actors	X					X	
Sophisticated property management	X					X	
Financing structure		X	X				X
Commit contractors during downturn			X		X		X

6.4.1. Location

According to Hunt (2009), a large part of the success of mixed-use development is consumer traffic. Therefore, a factor for mitigating risk is to position the development within a thriving community. Similar to risk mitigation in other kinds of

property development, the developer needs to mitigate market risk through proper market research and determining a suitable location based on the research.

However, for mixed-use development, this research does not only apply to a single type of use, for instance market research on the retail demand of the area, or the demand for residential units in the area. Instead, this market research should consider all trends and opportunities in the area with regard to all property types. Based on this research the location of the mixed-use development should be identified.

The required strategy for the development might determine the location of a mixed-use development, but due to the availability of land and the limitations of urban planning requirements, location actually drives the strategy.

Considering the manner in which location contributes to risk mitigation in Melrose Arch, this element forms an integral part of the expanded risk mitigation framework. As with any other retail centre, the location was a key risk mitigation factor for the retail component of Melrose Arch. Retail within a mixed-use development cannot be sustained only by other tenants as critical mass is only achieved at approximately 80,000 square metres of retail space.

Melrose Arch's particular types of residential components are based on the typical household structures of the area in which it is located, which also highlights the importance of location in the overall success of the development.

Of specific relevance to the South African context is the role of limited public transport in providing access to a mixed-use development. Mixed-use developments should be located in close proximity to as many transport options as possible in order to ensure easy accessibility.

6.4.2. Design

Hunt (2009) argues that the performance of any mixed-use development is a reflection of how it was designed and built. A key finding from the Melrose Arch case study is the importance of the role played by the architect and planner.

The role of the architect and planner is not only important for ensuring architectural expression and adherence to New Urbanism principles, but it is also critical in creating synergy between different uses, which will ultimately result in higher positive cash flows in the future.

Ratio composition of different property types

A different ratio composition for each phase is important to help mitigate risk in each phase. The results of the case study provide deep insights into how ratio composition in each phase helps mitigate risk.

Market risk can be mitigated by adjusting the balance between the commercial and residential elements (Murrin and Chapman 2009). By adjusting the mix in line with market conditions and demand, profitability can be maximised. In Melrose Arch this was achieved by having a flexible basket of rights.

Common areas create synergy

Evidence from the case study supports the view of Richter (2006) that mixed-use development should contain common areas and features that allow diverse tenants to engage without encroaching on one another's private space. The case study provided insights into how to create private space by way of perimeter buildings that allow for common areas that do not encroach on private space.

Architectural Expression

Architectural expression mitigates risk by creating a sense of place and identity and attracting retail foot traffic to the development. Various participants in the research supported the importance of architectural expression in the success of creating a lifestyle destination. Architectural expression connects the physical buildings with the intangible lifestyle positioning of the development.

However, evidence from the case study indicated that while architectural expression is important in mixed-use development, there needs to be a balance between architectural expression and building and maintenance costs as a result of complexity. Rybczynski (2008) also highlights that too whimsical, quirky

buildings are difficult and expensive to build. The importance of architectural expression is higher in initial phases in order to create a sense of place and identity, but it can be scaled down in later phases.

Energy

The cost and type of energy used in a development impacts not only on the development's long-term financial return, but also on those of tenants. However, although the developers of Melrose Arch constantly improve the energy efficiency in the way building management systems are incorporated into the design of the development, strong evidence exists that the issue of energy is not unique to mixed-use development. This element has therefore been excluded from the expanded framework for risk mitigation.

Property Management

According to Richter (2006), a large part of the success of a mixed-use development depends on how well the property is managed after completion. However, the success achieved by property managers in accommodating different tenants and communities under one roof depends largely on how the development was designed and built. Evidence from the case study supports this fact and highlights how property managers can provide critical insights during the design phase of a development that will result in lower maintenance costs and more efficient running of the development. This will impact positively on the development's overall risk.

6.4.3. Financing Structure

Melrose Arch's development manager emphasised that a major investment in infrastructure and bulk services before and during the first phase poses an extraordinarily large risk to mixed-use development. According to Rosta (2007), large, landscape-altering developments demand a specialised finance strategy. Timothy Fraser, a principal for Spaulding and Slye in the USA, notes that large and complex mixed-use developments involve significant upfront investment in infrastructure such as roads, green space, water treatment facilities and bus or railway stations (Rosta, 2007).

Evidence from the case study highlights that only large institutional investors with a 30 to 40 year investment horizon, like pension funds, can afford to invest in mixed-use development. Due to the long-term nature of mixed-use development, elements like retail might not achieve optimal performance in the early stages of development when critical mass cannot yet be achieved. In order to mitigate the risk of making short-term decisions that are not in line with the master plan, it is important to have an investor with a long term investment perspective.

Evidence from the research supports the argument by Rosta (2007) that if individual components of the project are big enough, the favoured approach is to finance each component separately. Melrose Arch's various components have been financed separately. A key risk mitigating factor is also to finance the individual components through different financial institutions.

6.4.4. Public Sector involvement

According to Adams *et al* (2005), risk theory forms the basis of pricing risk in property investment and private sector investment largely depends on the facilitating role of public sector. Public sector involvement is a key risk reduction issue in property development.

Participants in the case study stated that keeping a close relationship with local authorities is a way of mitigating risk in mixed-use development in order to speed up future approvals, for instance, of reduced minimum parking requirements as the development grows. Local Council also understands the new urban planning policies and a close relationship will ensure the public sector plays a facilitating role in the private developer's investment.

According to Egan (2007), nearly 60% of developers and property professionals who are in mixed-use development believe that involvement from the public sector is instrumental in the financial success of a mixed-use project.

Public-private partnerships (PPPs) can provide major benefits where significant infrastructure is needed. Although the initial developers of Melrose Arch did not make use of PPPs in the initial infrastructure investment, the current developer partnered with local authorities in the expansion and rehabilitation of the James and Ethel Grey Park. Beyard, an expert from the Urban Land Institute, highlights

the importance of public-private partnerships where a mixed-use development includes civic, cultural, sports or affordable housing components (Egan, 2007).

A key risk mitigating factor in the South African context is in fact to limit public sector involvement when it comes to services in mixed-use development. A large part of the success of Melrose Arch can be attributed to the fact that its services are under the control of the developer.

6.4.5. In-house expertise of developer

According to Rosta (2007), experience in more than one property type is essential when tackling a mixed-use development. A developer can mitigate risk and increase chances of success by partnering with someone who is specialised in a different property type. From the case study it is evident that the developer mitigates risk through access to the right expertise, from design and planning, to specialist property management and general management expertise.

The case study revealed that partnerships were formed in order to gain access to expertise. Egan (2007) argues that very few developers have all the expertise in-house, causing them to delay mixed-use projects if these necessary skills are not obtainable through joint ventures or partnerships.

A high level of in-house expertise in all property types and general business management, or partnering where lack of expertise exists, results in better loan-to-

equity ratios and more favourable lending terms offered by financial institutions. Rosta (2007) also states that lenders are mostly interested in the level of expertise a developer holds.

6.4.6. Retail mix

The mix of retail tenants in a mixed-use development must reflect the people who use the property (Hunt, 2009). The retail mix must address the needs of residents and commercial tenants in order to create a live-work-play environment and capitalise on the synergy created between different components. Deep insights were gained from Melrose Arch in terms of risk mitigation through the optimum retail mix, as discussed under research question two (refer 6.3.3.8).

First and foremost, the retail mix should include amenities that facilitate an environment where the needs of other tenants are met. However, there is strong evidence from the case study that the retail component cannot be sustained only by the development's tenants. Therefore, the retail mix needs to be of such a nature that it attracts foot traffic from outside the development. The retail mix determines consumer traffic from outside the development (Hunt, 2009).

Including lifestyle tenants, like a health club, in a mixed-use development is an example of creating value through a very specific mix of tenants.

A key finding from the research is the importance of a mixed-use development offering a unique experience or lifestyle destination in order to attract foot traffic that will sustain the retail component until critical mass can be achieved.

Including retail across different income levels is a key factor for mitigating risk in the retail component of a development like Melrose Arch. Pure high-end retail cannot be sustained during economic downturns, while during economic booms lower level retail will still be successful as long as the tenants are in line with the lifestyle positioning of the development.

Property managers of mixed-use developments must be able to adjust their tenant mix and be creative when it comes to attracting and keeping the right tenants. This will protect them from economic downturns in the future (Hunt, 2009). Evidence from the case study supports this view.

6.4.7. Entertainment, recreation and conferencing

According to Schmiedicker (Hunt, 2009), real estate that has a sense of place where people feel comfortable as a result of an experience of community through meaningful events, drives consumer traffic. Evidence from the case study supports this view.

Together with the use entertainment and recreation, conferencing is another way of mitigating the risk of economic downturns that will be included in the framework.

Conferencing facilities can add an additional revenue stream during downturns and also attract new visitors to the development.

6.4.8. Challenges unique to the South African environment

Challenges unique to the South African environment include crime rates, poor municipal service delivery resulting in interruptions in water and electricity supply, strikes due to the country's socio-economic structure as well as a lack of public transport.

While the above issues were included in the initial framework for risk mitigation, these issues proved to be the key reasons for the success of Melrose Arch. Daniel (2000) argues that risk can also be expressed in positive terms, where the outcome of net risk assessment is net opportunity assessment. The four variables for net opportunity assessment include the *value of the opportunity* adjusted by the *likelihood* of the opportunity occurring net of the *ability to capture* the opportunity and the ability of the opportunity being *deployed*.

Developers of Melrose Arch capitalise on the opportunities created by the country's unique challenges. A large part of the success of the development can be contributed to the fact that it provides a safe live-work-play environment thanks to its security by design approach. At the same time, the success of the office component is thanks to world-class services, including uninterrupted power supply,

energy efficiency and other services like refuse removal that are all under the control of the developer.

Capitalising on these opportunities, or rather mitigating these risks, comes at a significant cost to the developer. It is due to the economies of scale created in a mixed-use environment like Melrose Arch that these costs can be incurred in order to create a more sustainable urban environment.

6.4.9 Environmental sustainability

Although the ever-increasing sustainability and environmental requirements for new buildings will continue to add to the overall costs of a development and affect its viability, this risk applies to all kinds of property development. Key findings from the research indicated that although developers must consider environmental issues during all stages of the development, these practices are becoming the norm and are not unique to Melrose Arch or mixed-use developments.

However, Ramabodu *et al* (2007) argues that Southern Africa needs to show investors that an understanding of sustainability exists on all environmental levels. While issues of environmental sustainability do not form part of a framework for mitigating risks unique to Melrose Arch, the demands of environmental sustainability in fact create the opportunity for mixed-use development to provide lessons for building sustainable cities in Southern Africa.

Based on the literature and evidence from the case study, this element needs to be excluded from a framework for risk mitigation factors that are unique to mixed-use development.

6.4.10. Cooperation of Strategic Actors

By continuously involving all strategic actors in a risk mitigation strategy, uncertainty in property projects can be converted into risk and mitigated by having clear role descriptions for each actor in the strategic process. The developer should facilitate this cooperation of all actors in the process. Due to its complexity, this is a critical part of a risk framework for mixed-use development.

All the major role players in a mixed-use property development process, as highlighted by Miles et al (2000), also exist in traditional property development. The difference, however, is that the role players in mixed-use development need to stay involved throughout the development, which in the case of Melrose Arch can extend to 30 years or more.

Table 10: Ongoing strategic role players

Property development role players
Property developer
Architect
Engineer
Land planner
Landscape architect
Contractors
Environmental consultant
Transportation consultant
Appraiser

Attorneys and accountants
Real estate agents
Financial institutions
Property manager
Market researcher
Marketing and public relations consultant
Regulators and local authorities
Final users

Although the expanded framework includes the additional risk mitigating factors as identified in the case study, these factors were discussed under research question two and will not be repeated under research question three. These elements were not part of the initial risk framework constructed from the available literature, but have been included in the expanded framework for risk mitigation in mixed-use development as a result of the findings from the case study.

6.5. Conclusion

The researcher proposes that Melrose Arch has a unique set of risk factors that makes it riskier than traditional property development. Through answering the three research questions, a set of risk factors was identified that is unique to Melrose Arch. These unique risk factors create higher variability than in traditional property development and require a different way of mitigation.

The case study also provided insights into the high variability contributed by, for instance, property types with highly variable returns, like retail, leisure and hotels. According to Day (2001), project risk is the variability in the project return. The more variability included in an opportunity, the higher the risk. High levels of

complexity due to integration and synergy between different components of the development also add to its risk.

The research findings support the proposition (hypothesis) that Melrose Arch's unique set of risk factors make it a riskier venture than traditional property development.

7. Conclusion

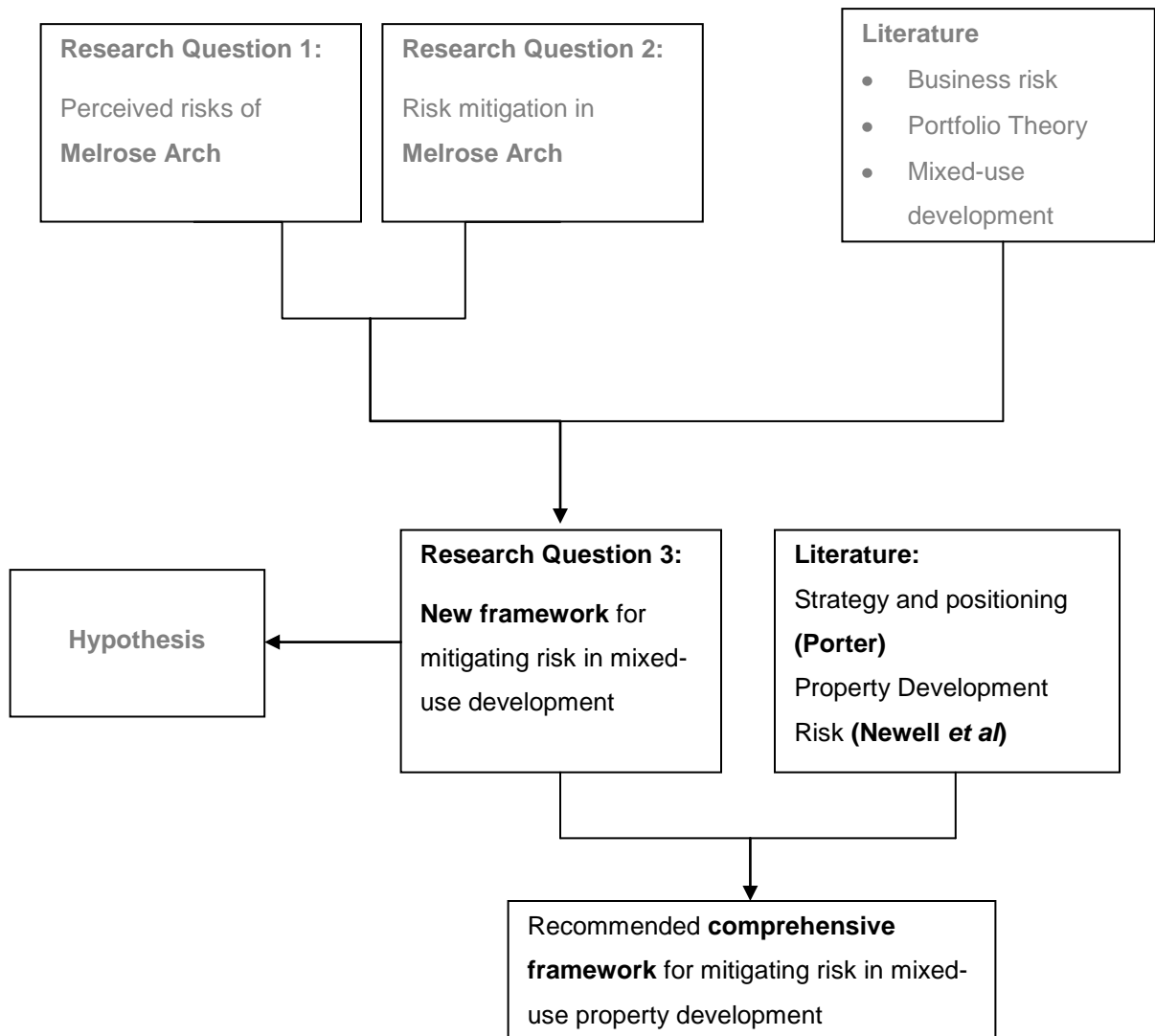
7.1 Introduction

In the previous chapter it was concluded that Melrose Arch's unique set of risk factors make it a riskier venture than traditional property development. By answering the individual research questions in chapter six, an expanded framework was constructed of possible ways to mitigate risks unique to mixed-use development. In this chapter, an overview of the case study and the key insights from the research are discussed in order to derive useful recommendations for property developers.

Using the key insights gained from the research, the expanded framework presented in chapter six was consolidated with literature on business strategy, positioning and general property development risk factors in order to arrive at a comprehensive and chronological framework for risk mitigation in mixed-use property development.

Having presented a framework for risk mitigation for mixed-use development to property developers, this chapter concludes with possible areas for future research on the topic of mixed-use property development.

Figure 14: Business recommendations



7.2 Overview of Case Study

With sustainability at the core of New Urbanism principles upon which mixed-use developments like Melrose Arch are based, this research may provide a way to place environmental, social and economic sustainability at the centre of planning and decision-making around land reform in South Africa. Melrose Arch is a test of the New Urbanism approach. Proving the sustainability of a mixed-use

development like Melrose Arch is vital to the New Urbanist movement in South Africa.

Property developers and investors make business decisions based on risk and return. This case study provides insights into the risks that are unique to mixed-use developments such as Melrose Arch and how these risks can be mitigated in order to achieve the benefits of diversification.

A theoretical framework for mitigating risk in mixed-use development was constructed from the existing literature and used as a basis for the case study on Melrose Arch. From the research conducted it is evident that Melrose Arch has a much higher level of variability than any traditional kind of property development. According to Day (2001), the more variability included in an opportunity, the higher the risk. The case study demonstrates the fact that Melrose Arch's unique set of risk factors make it riskier than traditional property development.

Based on the results of the case study, the initial framework constructed from literature was revised. The findings of the case study, analysed according to each proposed element of this risk framework, highlight a certain level of variability and resulting risk in Melrose Arch. They also show how the developers mitigated these risks in the past and how they plan to handle them going forward.

However, the research also highlighted certain areas where the principles of New Urbanism that are present in Melrose Arch make the development riskier than both traditional property development and other mixed-use developments that do not place New Urbanism principles at the heart of their designs. Elements such as the integration of retail throughout the development proved to add complexity to mitigating risk in the retail component of Melrose Arch. Structured parking in the form of a super-basement facilitates a design around the principles of walkability, but also adds significantly to the capital costs of the development. Furthermore, outside pedestrian malls create a sense of place which attracts visitors to the development but at the same time create challenges during cold and wet weather conditions.

7.3 Key Insights from the Case Study

The case study on Melrose Arch specifically highlighted five factors as the most prominent ways of mitigating risk because they all serve to individually mitigate various risks across the length of the development process:

- A flexible basket of rights that exceeds the total approved bulk
- Finance: long-term investment horizon
- Services under control of the developer
- Sophisticated property management
- Ongoing involvement of strategic actors

The above factors for mitigation risk in mixed-use development emphasise the importance of a long-term strategy as well as ongoing, post-construction risk mitigation, which includes long-term strategic and operational management of the development. This highlights the fact that feasibility studies, performance measurement and risk mitigation in mixed-use development should differentiate between two different categories:

1. Planning and development (per phase)
2. Ongoing strategic and operational management.

The total revenue of a mixed-use development can be broken down into development income and operating income. Operating income includes rental income, cost recoveries and income from sources such as advertising. Likewise, total expenses can be broken down into capital costs of new development and total operating expenses. As a result the profit of the development consists of the same two elements, development profit and operating profit. On a consolidated level, performance of the development is measured as one integrated entity.

The development, therefore, requires a sophisticated management team that understands not only property development, but also business strategy, brand positioning and integrated systems thinking.

According to Porter (1996), business strategy is about aligning an organisation's competencies with the trends and opportunities in the environment and positioning the product or organisation appropriately to take advantage of these opportunities. Mixed-use development is a long-term project with many complexities. A key conclusion from the research is that **mixed-use development** is different from traditional property development in the sense that it **is an ongoing concern to which various business theories apply**. Mixed-use developments such as Melrose Arch demand a master plan, consistent positioning and a lengthy investment horizon. In comparison, the time horizon for traditional property developments range between 18 and 24 months.

In order to mitigate the increased risk as a result of the high level of variability in mixed-use development, the development requires an ongoing alignment of competencies and lifestyle positioning with the master plan. These competencies vary from the architectural design and ratio composition to the tenant mix and ongoing property- and financial management of the development.

Furthermore, the success of a mixed-use development rests in part on its ability to consistently deliver on its brand promise to customers. According to Porter (1996), a sustainable strategic positioning requires trade-offs and is about preserving what is distinctive about the organisation. The lifestyle positioning of a mixed-use development should be based on its economic, social and environmental objectives. In order to achieve these objectives, the lifestyle positioning should also

consider what competencies will be needed to take advantage of future changes in the market.

Management's responsibility in terms of implementing the strategic plan includes appropriate staffing, marketing programmes, operating budgets, a long-term capital budget programme, ongoing planning processes and a well-negotiated property management contract. Little ongoing management expertise is required in traditional property development once the development is complete.

Although mixed-use development may be seen as a portfolio of pockets of traditional property development, as a single entity it needs to be approached using integrated business principles. While each phase in the development should be feasible on its own, the strategy for a mixed-use development should consider the required returns over the long-term and how elements of the development will be integrated to achieve these returns.

Modern Portfolio Theory (MPT) aims to reduce the collective risk of a portfolio of assets by combining different assets whose returns are not correlated. Key insights from this case study focus on the importance of integration and synergy between various components of mixed-use development and measuring performance of the development as one integrated entity. This raises the question as to whether the integration and synergy between different components would result in a correlation in the return of various assets, which would place in doubt the application of MPT.

As a result, it remains unclear whether MPT may be applied in determining the optimal ratio composition of uses that result in the lowest collective risk for a mixed-use development. This highlights the need for further research into the application of MPT to mixed-use development.

This synergy and integration in mixed-use development highlights the importance of the role of the architect and planner. A mixed-use development is in fact a portfolio of properties. The performance of this portfolio of properties is largely determined through the synergy and integration created in the design of the development. The design of the master plan and ongoing alignment of different phases in the development with this plan highlights the integral role played by the architect and planner in the financial performance of the development.

7.4 Recommended comprehensive framework for mitigating risk in mixed-use property development

Having consolidating the key insights from this research with the expanded framework for risk mitigation, as presented in chapter six, together with the top 10 general property development risk mitigating factors according to Newell *et al* (2003), (refer to section 2.2.5), a comprehensive framework was constructed for mitigating all major risks in mixed-use developments such as Melrose Ach.

In this framework all risk mitigation factors have been categorised according to the five chronological phases in the property development process (Newell *et al*,

2003). However, these five phases are repeated at different stages in the mixed-use property development process. In order to present a sequential process for risk mitigation in mixed-use development, the framework was divided into the main stages that occur in mixed-use development, from planning to completion.

Table 11: Comprehensive framework for risk mitigation in mixed-use development

Risk mitigation	Applicable to traditional and mixed-use development	Unique to mixed-use development
PLANNING AND DEVELOPMENT		
Stage 1 – Strategy formulation and planning (Pre-construction)		
Market risk: research, location, portfolio diversification	X	X
Development strategy and lifestyle positioning		X
Finance: Long term investment horizon		X
Design of Master Plan		X
Single ownership		X
Stage 2 - Land acquisition, bulk services and infrastructure		
Pre-construction		
Environmental risk assessment and resolve issues	X	
Political: support from local community, council and government	X	
Public Private Partnerships		X
Contract negotiation		
Approval of flexible basket of rights		X
Land Cost (Negotiate price which provides for adequate contingencies)	X	
Acquisition terms (Negotiate adjustment mechanisms for price and conditions)	X	
Construction		
Engineering (unexpected, poor design)	X	
Stage 3 – Phased approach		
Pre-construction		
Approvals	X	
Design of individual phases		
<i>Ratio composition of different uses</i>		X
<i>Architectural expression</i>		X
<i>Property management</i>		X

<i>Flexibility</i>		X
In-house expertise of developer (in all property types included in phase) or partnering	X	X
Finance: Consider development liquidity requirements and various banks' exposure		X
Contract negotiation		
Cost increase: fixed price building contract	X	
Contract to building contractors during downturns		X
Construction		
Time delays (adequate insurance cover and penalties to builder)	X	
Engineering (unexpected, poor design)	X	
Post-construction		
Timing of delivering development (cycle risk)	X	X
ONGOING STRATEGIC AND OPERATIONAL MANAGEMENT (Post-construction)		
Ongoing strategic alignment and lifestyle positioning		X
In-house expertise of developer		X
Services under control of developer		X
Parking		X
Sophisticated property management		X
Retail mix		X
Entertainment, conferencing and recreation		X
Ongoing involvement of strategic actors		X

7.5 Conclusion

The principles of New Urbanism are about building truly sustainable cities. Melrose Arch is an example of a mixed-use development designed around the true principles of New Urbanism. Melrose Arch is a riskier venture than traditional property development and other forms of mixed-use development due to the complexity and high variability of returns involved as a result of the integration of various land uses. However, the risks in Melrose Arch and similar mixed-use developments can be mitigated. This research provides a framework for mitigating

these risks. The case study on Melrose Arch highlights the importance of taking a long-term view on the sustainability of property development. By doing so and constantly aligning the development's offerings and operational management with its long-term goals, mixed-use development can create significant value for all its stakeholders.

Lessons learned in terms of risk mitigation in Melrose Arch may be applied in developing mixed-use schemes for lower to middle income areas, in pursuit of more appropriate and sustainable solutions for the South African built environment. South Africa has limited public transport and infrastructure. While schemes like Melrose Arch are focused on the high end of the market, mixed-use development can provide many opportunities to lower and middle income groups to live in healthy communities in close proximity of various economic and social amenities. Mixed-use development could also be a solution to facilitating social integration in South Africa in order to address the segregation that was caused by urban design policies during the *apartheid* era.

Lessons learned should encourage public and private developers to contribute to the creation of sustainable cities through the application of the principles of New Urbanism in mixed-use development.

7.6 Future areas of research

Due to the lack of literature on risk in mixed-use development, this research was exploratory and qualitative in order to establish a body of knowledge on the topic.

- A possible future area of research would be to construct a model based on quantitative research in order to accurately measure the impact of the risk variables on the overall performance of mixed-use developments. Such a model could build on the theoretical risk framework that was constructed from this case study.
- It is still unclear how Modern Portfolio Theory (MPT) may be applied in mixed-use development to determine the optimal portfolio of assets in the master plan of the development. By considering the impact of various property cycles and the variability in returns of different property types, future research can assist in constructing a model for applying MPT to the design of mixed-use developments.
- Most mixed-use developments in South Africa are located in middle to high income areas. There is also a need for further exploratory research on the feasibility of mixed-use developments in low to middle income areas.
- Most mixed-use developments in South Africa, including Melrose Arch, do not consider a family-orientated lifestyle. In order to have a real impact on limiting urban sprawl, cities need more mixed-use developments that cater

for family lifestyles. Further research is needed into the feasibility of such developments.

- Successful ongoing management requires an integrated strategic and operational approach. It would be useful to develop a general management framework that would support a successful mixed-use development.

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9. Appendices

9.1 Interview questions

1. General

- 1.1. What are the five biggest obstacles you experienced or still experience in the development of Melrose Arch?
- 1.2. Were these obstacles listed as possible areas of risk in the initial risk assessment of the development?
- 1.3. How were these obstacles managed in order to mitigate the overall risk of the development?
- 1.4. Property cycle risk is applicable to any property development and there are many arguments that the different property cycles in a mixed-use development lower the overall risk of the development. Did you plan the development in such a way that each component of the development is completed during an up-cycle for that specific component? Or, how did you capitalise on the benefit of different property cycles?

2. Location

- 2.1. How did you incorporate the different market demand for residential, office, retail, recreation and hotel facilities into one location? Were there any trade-offs that had to be made in the process?
- 2.2. What risk did such trade-offs pose to Melrose Arch and how did you mitigate these risks?

2.3. What are the criteria for a potential location for mixed-use development that would limit the risk in the development?

2.4. Do you believe that the residential component of mixed-use development should be based on the existing household structure of the area or will the development attract a different type of resident to the area?

2.5. Were roads and traffic a major consideration in choosing a location for Melrose Arch and do you believe this is a key risk factor for mixed-use developments?

3. Design

3.1. How was maximising synergy between the different components of the development considered in the initial design of Melrose Arch?

3.2. To what extent do you believe that the physical design of Melrose Arch accounted for retail traffic in the development?

3.3. In what way was the initial design of Melrose Arch adapted as a means of mitigating risk in the development?

3.4. Do you believe there is an optimal ratio for the different components in a mixed-use development and how is this managed in the current and future development phases of Melrose Arch?

3.5. Is the current and future management of Melrose Arch affected by the original design of the development and how could value in the development been maximised by considering property management issues in the design phase?

4. Project Finance

- 4.1. Is your preferred financing strategy for mixed-use development to obtain a single loan or to finance each component separately?
- 4.2. Financial institutions generally assess the financing of each property type differently and individually. Were the different property types in the different phases of Melrose Arch financed separately or by way of a single loan per phase?
- 4.3. What challenges did you experience with financial institutions in terms of financing the mixed-use development?
- 4.4. Do you believe that the size and scale of a mixed-use development determines its financing structure?
- 4.5. Would you agree that including affordable housing in a mixed-use development reduces the financial risk as a result of government subsidies, although it might pose other challenges?
- 4.6. The development of Melrose Arch required large upfront infrastructure investment including roads and public spaces. How was this infrastructure financed and did this add to the overall risk of the development?

5. Municipal and government involvement

- 5.1. Most developers of mixed-use developments take over the provision and management of municipal infrastructure and services like roads, electricity, refuse removal and security. Do you believe that moving these public

services to the control of the developer is a way of mitigating risk in mixed-use development?

5.2. How do you believe that a partnership with the municipality or government departments have or could have reduced the risk of the development in terms of upfront infrastructure investment?

5.3. Did you make use of any Public Private Partnerships in the development of Melrose Arch and do you believe that these kinds of partnerships will mitigate risk in mixed-use development where the development includes public facilities or significant infrastructure investment?

5.4. Did you experience any lack of support from the local community, council or government and how did this impact on the overall risk of the development?

6. In-house expertise of developer

6.1. To what extent does the success of a mixed-use development depend on whether the developer has specialised, in-house expertise relating to all property types included in the development?

6.2. Did you have specialised expertise in-house with respect to all property types included in Melrose Arch?

6.2.1. No – Did you or would you partner with another developer in future if you do not have specialised, in-house expertise in all property types included in a mixed-use development?

6.3. To what extent do financial institutions assess the risk of mixed-use property development based on the in-house expertise of the developer and do they require partnerships where expertise is not available in-house?

7. Retail

7.1. Do you believe that the operating hours of retail tenants have a significant impact on the success of Melrose Arch as a mixed-use development? In other words, would longer shopping hours attract more residential tenants and retail traffic as a result of convenience and therefore enhance the work-live-play environment?

7.2. How did you align the type of retail tenants in Melrose Arch with the demand of the catchment area as well as the specific demands of the other tenants in the development (residential, commercial, leisure)?

7.3. What is the role of retail anchor tenants in a mixed-use development?

7.4. What flexibility do you have to adjust your retail mix and to make sure you attract and keep the right tenants in Melrose Arch? E.g. Staggering lease expiration dates and managing tenant relationships.

7.5. Do you perceive long-term relationships with tenants to be a key component of mitigating risk in a mixed-use development?

8. Entertainment and recreation

8.1. Melrose Arch includes a state of the art Virgin Active Classic health club and open squares that can be used for events and entertainment such as

the 2010 FIFA World Cup fan park, which attracted thousands of patrons to the development. To what extent do these recreational facilities reduce risk by, for instance, attracting visitors during economic downturns?

8.2. Were recreational facilities intentionally included as part of a risk mitigation strategy for Melrose Arch?

8.3. Do you believe that the success of Melrose Arch is largely due to a sense of community experienced by tenants and patrons?

8.4. How do you manage a sense of community in Melrose Arch?

9. South African challenges

9.1. What do you believe are the unique factors that impact on mixed-use development in South Africa that don't apply to other countries?

9.2. Do you believe that mixing income groups in one development would increase the risk in a mixed-use development?

9.3. Mixed-use development in South Africa has mostly been targeted at high income groups. Do you believe that mixed-use development is achievable in lower and middle income groups in South Africa and would that increase the risk associated with the development?

9.4. Do you experience any cultural and lifestyle priorities from the diverse cultural groups in South Africa to impact on Melrose Arch and how are these managed to benefit the development?

9.5. Time delays generally pose a significant risk to any property development.

Did you experience any time delays as a result of strikes, skills shortages or other issues unique to the South African context?

10. Environmental factors

10.1. Do you believe that building according to the specifications of the Council for Green Buildings in South Africa mitigates the risk in a mixed-use development or is it purely something that is a requirement?

10.2. To what extent do you regard power shortages in South Africa to be a risk for Melrose Arch and how did you go about mitigating this risk?

10.3. Do you believe that as developer you are responsible to limit the carbon footprint of tenants of Melrose Arch and do you believe that by doing this you can reduce any future risk in the development?

10.4. To what extent do you believe that future water supply poses a threat to Melrose Arch and do you mitigate this risk?

11. Cooperation of strategic actors

11.1. Which stakeholders or parties do you regard to be the key strategic actors in the development of a mixed-use development, specifically Melrose Arch?

11.2. Do you believe that any level of non-cooperation between these actors can be a serious risk to the development?

11.2.1. Yes – How did you mitigate this risk?

12. Future plans

12.1. Looking at the expansion plans for Melrose Arch, how would you approach these differently than in the past, bearing in mind the factors discussed above? E.g. design, ratio composition, target markets, financing etc.