

SURVEYING AND LAND ADMINISTRATION COMPLEXITIES IN HIGH RISE, MIXED-USE SECTIONAL TITLE SCHEMES: LESSONS FROM THE PEARLS OF UMHLANGA

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The growing popularity of high-density, mixed-use developments in urban coastal environments has brought renewed attention to the intricacies of Sectional Titles Schemes. In South Africa, where land tenure and cadastral systems must accommodate increasingly complex forms of property ownership, the surveyor's role in ensuring spatial clarity is critical. This paper examines *The Pearls of Umhlanga*, a flagship luxury sectional title scheme in KwaZulu-Natal, as a case study to explore the practical challenges and legal ambiguities that arise in the surveying and land administration of such developments.

Through detailed analysis of the scheme's sectional plans, exclusive use areas, and cadastral integration, the paper highlights systemic issues in interpreting and registering real property rights in vertical, mixed-use contexts. Key themes include the demarcation of common property versus private sections, the legal and spatial implications of exclusive use allocations, and the limits of current legislation—namely, the Sectional Titles Act (Act No. 95 of 1986) and the Sectional Titles Schemes Management Act (Act No. 8 of 2011)—in addressing evolving urban realities.

The authors, both practicing professionals in land administration and surveying, propose practical recommendations for improving spatial justice, administrative transparency, and the quality of sectional plan preparation. The case study reveals how surveyors are uniquely positioned to bridge technical precision and legal clarity, especially in urban environments where land value, tenure complexity, and governance tensions intersect.

By drawing on real-world data and spatial documentation, this paper contributes to ongoing discourse on modernizing land administration frameworks in support of inclusive, resilient, and efficiently governed cities—an objective that aligns closely with the core aims of FIG 2026.

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1. INTRODUCTION

Mixed-use sectional title schemes are increasingly gaining popularity in South Africa as urban centres evolve toward compact, multifunctional, and economically vibrant spaces. These developments embody the work, live and play concept offering diversity, convenience, and economic opportunity through the integration of residential, commercial, recreational, and hospitality functions. Beyond their architectural appeal, mixed-use schemes contribute to urban regeneration and gentrification, fostering new forms of social and economic interaction within limited urban land parcels.

Modern mixed-use sectional title schemes, however, present intricate challenges in land administration and cadastral management. Their design characterized by vertically and horizontally interlinked structures demands precise spatial representation to distinguish individual ownership from shared property. The visual and structural complexity that makes these developments architecturally impressive can simultaneously complicate the work of Sectional Title practitioners, particularly in ensuring accurate delineation of sections, exclusive use areas, and common property as required by law.

In South Africa, only Architects and Professional Land Surveyors are legally permitted to undertake sectional title surveys. Yet, the determination of boundaries a task fundamental to defining real property rights remains the exclusive preserve of Professional Land Surveyors. Consequently, Land Surveyors bear full responsibility for the preparation and certification of all sheets of sectional title plans, as prescribed under the Sectional Titles Act (Act No. 95 of 1986). This responsibility situates surveyors at the intersection of technical precision, legal interpretation and administrative accountability.

Despite this critical role, current legislation and administrative systems have not evolved in tandem with the increasing complexity of mixed-use developments. Ambiguities in defining spatial extents interpreting exclusive use rights and integrating sectional plans into the broader cadastre often result in inconsistencies and errors that threaten legal clarity, spatial justice and governance efficiency. The preparation of sectional title plans for multifaceted developments therefore requires both technical ingenuity and legal sensitivity to ensure compliance and spatial coherence.

This paper explores these complexities through a case study of *The Pearls of Umhlanga*, a flagship high-rise, mixed-use development in KwaZulu-Natal. Drawing on practical experiences from professional practice. The paper analyses the surveying and administrative

techniques applied in the preparation of Sectional Titles plans for such developments. It further interrogates the adequacy of existing legislation and regulatory frameworks in addressing the realities of modern urban land use.

The study ultimately seeks to highlight the central role of Professional Land Surveyors in safeguarding spatial integrity within complex sectional title schemes, and to propose actionable recommendations for enhancing technical standards, legislative clarity, and sustainable urban governance. This paper aligns with Sustainable Development Goals (SDGs) 8 and 9 being decent work and economic growth and industry, innovation and infrastructure respectively.

2. PROBLEM STATEMENT

The emergence of high-rise, mixed-use Sectional Titles Schemes in South Africa has introduced unprecedented complexities in surveying and land administration. Practitioners involved in mixed-use Sectional Titles schemes projects are compelled to navigate legislative and practical ambiguities that hinder the effective delineation of sections, exclusive use areas, and common property.

Existing statutory instruments namely the Sectional Titles Act (Act No. 95 of 1986) and the Sectional Titles Schemes Management Act (Act No. 8 of 2011) provide limited technical guidance on addressing the spatial and legal intricacies of vertical, mixed-use environments. This has led to inconsistencies in plan preparation, cadastral representation, and administrative interpretation. Consequently, errors and inefficiencies arise that threaten spatial justice, transparency, and the integrity of sustainable urban development.

Multifaceted developments are bound to take place in phases, depending on the developer's development strategy and possibly financial considerations. The phased developments are often carried over to several years, requiring the developer to reserve a right to develop for the stipulated number of years in terms of Section 25 of Act No. 95 of 1986. The project team tend to encounter project planning difficulties due to uncertainty when planning for projects that will be dealt with in phases considering market forces in prolonged periods.

3. RATIONALE

The authors of this paper have notably regarded the contribution of Land Surveyors towards covering a broad range of and the achievement thereof of sustainable developments. Using *The Pearls of Umhlanga* as a case study, this paper investigates how current surveying practices respond to these challenges and identifies the systemic gaps that impede accurate, equitable, and coherent land administration in complex Sectional Titles Schemes. The study aims to propose practical, experience-based approaches for strengthening professional practice, legislative alignment, and the broader governance framework underpinning South Africa's evolving urban landscape.

4. THEORETICAL FRAMEWORK

Prior to 1971 Sectional Titles Act was nonexistence which meant people could not own part of a building. The first Sectional Titles Act in South Africa was established in 1971 and it became effective in 1973. The first-generation of Sectional Titles Act, Act No. 66 of 1971 followed the model of the New South Wales Conveyancing (Strata Titles) Act No. 17 of 1961. This legislation introduced the notion of vertical ownership of land. It laid a foundation for separate ownership of portions of buildings through sections and their associated undivided share in common property. It was later repealed by the Sectional Titles Act No. 95 of 1986 which became effective in 1988. These legislations' main role encompasses addressing the legal complexities of owning a section of a building.

The Sectional Titles Act (Act No. 95 of 1986) and the Sectional Titles Schemes Management Act (Act No. 8 of 2011) provide the statutory foundation for dividing property into sections, common property, and exclusive use areas. However, as Van der Merwe (2015) and Mostert & Pope (2017) note these legislations to have been primarily conceived for horizontally oriented, residential schemes, and their provisions offer limited guidance for vertically stratified, multi-use developments.

The afore-mentioned legislative rigidity creates interpretive and administrative difficulties when delineating spatial boundaries in high-rise structures, especially where multiple ownership types intersect within a single cadastral parcel. The result is an increased risk of inconsistency in plan preparation, uncertainty in property rights, and administrative inefficiencies in registering complex schemes.

Mixed-use developments have become a defining feature of South Africa's evolving urban landscape, reflecting the global shift toward compact, integrated, and economically vibrant city forms. Despite their urban and economic appeal, mixed-use developments expose significant gaps in the legal and cadastral frameworks governing land ownership and administration. McDonald (2013) in his case study of Melrose Arch observes that mixed-use projects not only revitalize urban environments but also introduce multi-dimensional risk profiles linked to design, financing, and governance complexity. These developments embody the work, live and play philosophy, offering both functional and social diversity within limited urban space.

Similarly, Grobler and Marais (2017) argue that while such schemes present opportunities for urban regeneration and economic growth, they challenge conventional planning and property management systems that were not designed for spatially and functionally layered environments. Todes (2012) further situates this evolution within South Africa's strategic planning framework, noting that mixed-use nodes have become key instruments for curbing urban sprawl and promoting densification in metropolitan areas such as Johannesburg, Cape Town, and Durban.

Within this evolving landscape, the role of Professional Land Surveyors becomes increasingly critical. Enemark (2005) describes land surveyors as central actors in the broader land management paradigm—bridging the gap between technical precision, legal certainty, and governance integrity. In the South African context, Barry and Roux (2016) argue that effective land administration depends on the quality of cadastral data and the professional judgement applied in its creation and maintenance. Yet, as Williamson et al. (2010) emphasize, sustainable

land administration must evolve to accommodate the dynamic spatial realities of modern urban life, including vertical and mixed-use property forms.

The convergence of these perspectives underscores the need to modernize surveying methodologies and legislative instruments to ensure that Sectional Titles schemes, particularly those as complex as *The Pearls of Umhlanga* are spatially coherent, legally sound, and administratively transparent.

5. METHODOLOGY

This study is a qualitative triangulation method adopting a case study approach, focusing on *The Pearls of Umhlanga* as an exemplar of high-rise, mixed-use Sectional Titles development within South Africa's legal and cadastral framework. The case study method was chosen because it allows for an in-depth exploration of the interplay between surveying practice, legal interpretation, and administrative processes in a real-world setting. This approach aligns with FIG's emphasis on practice-based research that integrates professional experience and spatial documentation to address land administration challenges.

Data collection was done through observations, semi-structured interviews, and literature analysis. This triangulation research strategy was adopted to eliminate bias and to enhance credibility of the data. The observations were done on site by the authors with the team of professionals who were involved in the development process of the study areas and later the team of professionals were interviewed through semi-structured interview questions.

The sampling of the interviewees was a purposive sampling because the researchers had a deliberate intention of selecting participants who possess in-depth knowledge of the study area. Thus, the participants had to be practitioners who have been actively involved in the development of this mixed-use Sectional Scheme and *The Pearls of Umhlanga* real estate department.

5.1. Data Sources

The study relies on multiple data sources to ensure a comprehensive and triangulated understanding of *The Pearls of Umhlanga* development:

- **Sectional Title Plans and Diagrams** – Detailed examination of the registered sectional plans, building footprints, and layout sheets to identify how sections, exclusive use areas, and common property were spatially represented.
- **Legislative and Regulatory Documents** – Review of the *Sectional Titles Act (Act No. 95 of 1986)*, the *Sectional Titles Schemes Management Act (Act No. 8 of 2011)*, and related Surveyor-General directives to assess their adequacy in guiding sectional plan preparation for mixed-use developments.
- **Professional Practice Records** – Reflection on the authors' own experiences as registered Professional Land Surveyors involved in sectional title practice within

KwaZulu-Natal, including insights from peer interactions, field challenges, and plan approval processes at the Surveyor-General's office.

- **Secondary Literature** – Integration of scholarly and professional literature on mixed-use developments, cadastral systems, and land administration (e.g., McDonald, 2013; Van der Merwe, 2015; Enemark, 2005; Barry & Roux, 2016) to frame findings within established theoretical and policy contexts.

5.2. Analytical Framework

The data were analysed through a **thematic and comparative framework**.

- Thematic analysis identified recurring patterns of **technical, legal, and administrative complexity** in the sectional title process.
- Comparative analysis was used to relate these findings to existing frameworks and theoretical models of land administration (as proposed by Williamson et al., 2010 and Enemark, 2005).
- The study also drew on **reflective professional analysis**, which enabled the authors to contrast observed field practices with legislative expectations and best-practice surveying principles.

6. CASE STUDY: THE PEARLS OF UMHLANGA

The *Pearls of Umhlanga* development, situated along the Umhlanga coastline in KwaZulu-Natal, is one of South Africa's most prominent examples of a high-rise, mixed-use Sectional Titles Scheme. Conceived as a luxury coastal precinct, the Pearls integrates residential, commercial, hotel, and leisure components within a compact, vertically stratified environment. Its design reflects the contemporary urban model of work-live-play concept, combining high-density accommodation with retail arcades, restaurants, and public open spaces overlooking the Indian Ocean. From a cadastral and land administration perspective, the scheme represents a paradigm shift from traditional horizontal property ownership to a spatially layered system that demands precise survey control and legal coherence.

The scheme's sectional plan covers multiple phases and building components developed over several years, with varying ownership configurations and usage rights. The first phase was approved at the KwaZulu-Natal Surveyor-General's Office in 2004 as Sectional Plan S.G. No. D534/2004. It comprised of 22 sections all in building 1 and buildings 2-7 were common property. Building 1 is known as Pearl Reef and additional buildings namely Pearl Sky, Pearl Dawn, Pearl Breeze, Pearl Shore, Pearl Tides and the Capital Pearls Hotel were introduced in subsequent phases as amending sectional plans. The last phase was approved in 2025 under sectional plan S.G. No. D98/2025 finalizing the entire development over a span of 21 years. The *Pearls of Umhlanga* was developed in an overall of 49 phases.

Each building comprises of numerous sections distributed across vertical levels, interlinked by common property elements such as basement parking, podium levels, and shared amenities. The complex nature of the development required a careful delineation between residential sections, hotel suites, retail spaces, and associated exclusive use areas. This stratification, while architecturally innovative, introduced considerable complexity in the preparation of sectional plans and the accurate depiction of common property boundaries.

In carrying out the sectional title survey, Professional Land Surveyors were tasked with ensuring that all boundaries and spatial relationships were clearly defined in accordance with the Sectional Titles Act (Act No. 95 of 1986). The process required advanced technical methodologies to integrate architectural design data with cadastral survey principles, while maintaining compliance with statutory requirements. The delineation of exclusive use areas posed a challenge as these often spanned non-contiguous vertical or podium spaces that required precise referencing to the building's structure and site layout. Additionally, the need to coordinate with architects, conveyancers, and municipal authorities highlighted the inter-professional dependencies inherent in managing complex mixed-use schemes.

6.1. Property Boundaries

The scheme was developed over a piece of land that was consolidated vide diagram S.G. No. 2377/2004 now known as the remainder of Erf 3132 Umhlanga Rocks, following subdivisions that have taken place. One of the boundaries of this property, the seaward Eastern Boundary, was re-established because of the high-water mark (HWM). The necessity for the reestablishment of the boundary before the development could take place is for planning purposes and the possibility that the physical HWM boundary may have shifted.

The property is subject to several servitudes one of which being a pipeline servitude that had to be re-routed because it was causing obstructions to construction of some of the buildings. On the initial phase the pipeline servitude was still in existence as a result building 2 was encroaching on it. The encroachment was condoned by the eThekweni Municipality at that point in time because building 2 is a common property building which was not causing any conflict in usage with the servitude.

6.2. Caveat

In terms of section 25 of the Sectional Titles Act No. 95 of 1986, a developer may reserve the right to extend a sectional title scheme through the cession of real rights. Such extensions may occur either through the addition of buildings and exclusive use areas, or through the addition of exclusive use areas only. This statutory mechanism provides an essential safeguard for developers undertaking long-term, phased developments, as it preserves flexibility to respond to unforeseen planning, market, and design contingencies.

In the opening scheme of *The Pearls of Umhlanga* development, a right of extension was reserved for a period of 20 years. This strategic decision enabled the developer to adapt and

refine development proposals over time, considering changing market trends, evolving land-use demands, and practical development constraints encountered over the life of the project.

Given the mixed-use nature of the development—comprising residential, commercial, and recreational components—the developer elected to prioritise less complex land uses during the initial phases, focusing primarily on residential development. This approach facilitated construction efficiencies and aligned with a phased funding strategy; whereby subsequent phases were financed through returns generated from earlier developments. Commercial components were therefore introduced in the later phases of the scheme, reflecting both their greater construction complexity and the additional challenges associated with securing and managing commercial tenancies.

6.3.Sections

For the first phase and the opening of the register each floor of the existing building was created as one big section bearing in mind that those sections could be subdivided in future phases to create desirable units.

The buildings of the entire complex were erected on land that sloped considerably from West (inland) to East (Sea). As a result, multiple floors throughout the complex abutted on and gained entrance from a ground level at some point. This provided a challenge in the numbering of these relevant floors. Instead of labelling these floors in the conventional sequence as ground floor, lower ground floor, upper ground floor etc. it was elected to label the floors exactly as they were labelled on the building plans.

- e.g. Basement 3 – Storey 0, Basement 2 – Storey 1, Lower Ground Floor – Storey 2, Lower Ground Mezzanine Floor – Storey 2A, Ground Floor – Storey 3, Upper Ground Mezzanine Floor – Storey 3A, First floor – Storey 4 etc.

This method of floor numbering was decided upon so as not to cause confusion and in order to accord with building plans and the many sales agreements and sales plans which had been drawn up. These intermediary floor levels arise from the natural slope of the site, which required parking levels to be incrementally stepped rather than uniformly aligned.

While the Sectional Titles Act No. 95 of 1986 permits three-dimensional delineation of sections, it provides limited guidance on the treatment of mezzanine and split-level configurations. Consequently, professional judgement played a significant role in incorporating these spaces into sections or common property. By avoiding early subdivisions into multiple sections, the scheme preserves adaptability for investors and developers to introduce alternative layouts and proposals without requiring fundamental restructuring of the registered sectional plan.

6.4.Exclusive Use Areas and Common Property

A decision to either delineate a space as an Exclusive Use Area (EUA) or a Common Property (CP) was guided by the purpose of the usage as well as who may need to have access to that

area. For example, areas like pools were delineated as common property to allow access to everyone, whereas areas like restaurants/bar were opted to be EUA so that they would be tied to a unit.

The first phase of parking bays was done under the body corporate rules and the garages were reserved for those who were willing to buy them, through being part of the section. However, overtime the garages were changed from being part of the section to EUAs because the municipality wanted to value the garages at the same rate per square metre as the residential unit itself when charging rates for various sections and garages.

As the development progressed the developer noted an increase demand for garages within the scheme. Thus additional garages were constructed on different basement parking levels where space allowed, and those garages were sold as EUAs.

Other forms of EUAs were created to allow the developer rights to utilization, for example water tanks. The EUAs on some of the roofs were created to protect the antennas and radio aerials erected thereon, whereas the other space on some roofs was left as common property. Creating EUAs in favor of the developer was done to avoid leaving the areas the developer would need unhindered access to, as common property and hence negate the need for the developer having to exercise the right to access via the body corporate.

7. ETHICAL CONSIDERATIONS

Given the authors' dual roles as researchers and practitioners, professional integrity and confidentiality were maintained throughout. Only publicly accessible or non-confidential data such as approved sectional plans and legislative documents were utilized. The analysis was guided by the ethical standards of the South African Geomatics Council (SAGC) and the FIG Statement on Professional Ethics.

The practitioners that were involved as interviewees during data collection were informed that the information they provided was going to be used towards compilation of this paper. They were further informed that participation was voluntarily, and they could withdraw at any stage should they deem it necessary.

Through this methodology, the paper captures both the technical precision and practical realities of implementing sectional title legislation in complex, mixed-use developments, providing a grounded understanding of the surveyor's role in shaping equitable and sustainable land administration systems.

8. CONCLUSION

This paper examined the surveying and land administration complexities inherent in high-rise, mixed-use sectional title schemes through an in-depth case study of *The Pearls of Umhlanga*. The development provides a compelling illustration of how contemporary urban design characterised by vertical densification, phased implementation, and functional integration challenges the assumptions underpinning South Africa's existing sectional title legislative and cadastral frameworks.

The findings demonstrate that while the Sectional Titles Act No. 95 of 1986 and the Sectional Titles Schemes Management Act No. 8 of 2011 provide a functional foundation for sectional ownership, they offer limited guidance for addressing the spatial realities of vertically stratified, mixed-use developments. Issues relating to intermediary floor levels, incremental parking structures, exclusive use areas, and prolonged rights of extension require significant professional judgement, placing Professional Land Surveyors at the centre of balancing legal compliance, spatial clarity, and long-term scheme sustainability.

The Pearls of Umhlanga case study highlights the expanding role of the land surveyor beyond technical measurement to that of a spatial interpreter and governance enabler. Decisions taken during sectional plan preparation have enduring implications for participation quotas, maintenance responsibilities, levy allocation, and access rights, all of which directly affect spatial justice and administrative efficiency.

In alignment with the FIG 2026 theme, “*The Future We Want – SDGs and Beyond*,” this study underscores the need for adaptive land administration systems capable of supporting innovation, economic growth, and sustainable urban development. Strengthening legislative clarity, technical standards, and inter-professional collaboration will be critical to ensuring that complex mixed-use sectional title schemes remain legally robust, socially equitable, and fit for future urban demands.

9. ACKNOWLEDGEMENTS

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The authors further acknowledge the broader Professional Land Surveying community in South Africa, whose ongoing engagement with evolving urban forms continues to advance best practice in land administration and cadastral innovation.

10. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed to strengthen surveying practice, legislative coherence, and land administration in high-rise, mixed-use sectional title schemes:

10.1 Legislative and Regulatory Reform

There is a need for targeted amendments or supplementary regulations to the Sectional Titles Act and related directives to provide clearer guidance on the treatment of mezzanine levels, split floors, incremental parking structures, and complex exclusive use arrangements in vertically stratified developments.

10.2 Development of Technical Guidelines

The formulation of nationally recognised technical guidelines or best-practice manuals for mixed-use sectional title surveys would assist practitioners in achieving greater consistency, accuracy, and legal certainty in plan preparation.

10.3 Early Surveyor Involvement

Professional Land Surveyors should be formally integrated into project teams at the earliest planning and design stages to proactively identify cadastral and land administration risks, particularly in phased and mixed-use developments.

10.4 Capacity Building and Professional Training

Continuous professional development programmes should be strengthened to equip surveyors with advanced skills in three-dimensional cadastral representation, legal interpretation, and interdisciplinary coordination.

10.5 Strengthened Inter-Professional Collaboration

Improved coordination between surveyors, architects, conveyancers, municipal authorities, and managing agents is essential to ensure that sectional title schemes are not only technically compliant but also administratively sustainable over their full lifecycle.

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Suggested FIG Themes this paper aligns with are as listed below:

- Commission 1: Professional Standards and Practice
- Commission 7: Cadastre and Land Management
- Commission 10: Construction, Economics and Management