

ADVANCED PROPERTY SYSTEM

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The development feasibility template acts as an internal confirmation that your project is heading in the right direction and is a useful tool to brief a quantity surveyor. In this part of the program, we take a closer look at some of the inputs that influence the results of the feasibility and how they can impact on overall profitability. You can find a link to the form-based questions [here](#).

9.1 EXAMPLES OF FEASIBILITY STUDIES

Feasibility studies can be carried out in different ways and can vary depending on the person that prepared them. For accuracy, many developers rely on the services of a qualified Quantity Surveyor who is costing the development from project information supplied by the team. You can find the examples of feasibility studies and cost estimates that have been provided in the program material.

9.2 COST MANAGEMENT

Development expenses must be managed regularly to ensure accuracy is maintained throughout the project. It is therefore prudent to engage with a quantity surveyor as early in the project as possible, and proactively establish a cost plan. Effective financial management will help keep a handle on costs and avoid escalations and budget issues.

By scheduling tasks with the use of resource-loaded project management programs, the development budget can be managed to remain within norms or even generate a saving. Planning should be carried out according to project stages to ensure that resources are handled according to availability in a way that minimizes and conflicts.

Development costs can be managed well by maintaining the following factors that impact a feasibility.

- Involvement and Changes
Limiting variations to the project scope and reduce any significant changes in project size, use and project type.
- Material Efficiency
Managing resources and reducing waste throughout the project. The use of materials and finishes in order of magnitude can generate potential savings.
- Budget Control
This involves constant management of the project feasibility, which is made up of costings, and the project budget.
- Value Engineering

Refinement of the development to unlock value and improve the overall performance. Compare actual pricing from

9.3 THE USE OF TECHNOLOGY

Recent advances in building information systems (BIM) have improved the ability to make accurate project measurements. Project management software has introduced a way to accurately plan and track the progress of developments, and new inventions in photogrammetry and mapping have improved site reporting and feedback. Implementing these tools can provide powerful project controls, enabling the delivery of increasingly complex projects.

9.4 COST INPUTS

The following inputs make up the cost contributions of the development feasibility. Managing the expense of each can help balance the overall feasibility. Any savings on these inputs will generate a greater profitability for the development.

Land cost

Determined by the landowner, or the selling price of the land, or as a factor of opportunity costs. As mentioned in the zoning guide, opportunity costs depend on the location, availability of services and cost of development upgrades to infrastructure.

Services

These are land improvements in the form of services that are added to the property by the developer. These are calculated by services engineers prior to rezoning and are estimated by the municipal council in their *legal administration* department.

Construction cost

This refers to the pure building costs in a project and will be accurately measured by the QS when preparing the bill of quantities (BOQ). These costs are highly dependent on the level of finishes, and the type (classification) of building being developed.

Professional Fees

Depending on the number of professionals required to complete the project, the consultant fees can make up between 9,5% and 20% of the total construction cost. Although this is a sizable expense, professional fees can be seen as an investment that can be offset against the contingency allowance.

Technical Studies

Engineering studies need to be completed during the preliminary stages of the project. These need to be negotiated with professionals and specialists to avoid dispensing unnecessary capex prior to the project commencement. Examples of these studies include geotechnical reports, traffic impact assessments, environmental reports and market research studies.

VAT

Commercial projects that are charging the end-users VAT either on purchase or on rentals, can claim the VAT back from the receiver based on development expenses. With residential projects, however, the selling price does not attract VAT, and so developers aren't able to claim VAT back from SARS. This unfortunately loads the project with an additional percentage of tax that may significantly impact your return.

NHBRC

Residential developments are required to contribute to the National Home Builders Registration Council (NHBRC). This is typically calculated as a fixed amount per unit.

9.5 BUILDING SERVICES

The services that feed into a building generate costs in addition to the base-building expenses of a development. In terms of costs, these can make up between 25%-40% of the total construction cost. Coordination of these expenses is critical to maintaining the budget, and therefore a quantity surveyor should be consulted. Depending on the type of development, some considerations of additional costs are as follows.

- Electricity supply

This includes the costs of installation of the primary electrical supply as well as the base electrical infrastructure that feeds through the development. Considerations include whether the building requires security features such as CCTV, electronic access control, independent electrical meters, or pre-paid devices to individual units.

- Water supply systems

It is important to know what water supply available, and how hot water will be generated in the development. This can be done using conventional heating, or more sustainable means such as using heat pumps, solar geysers, or geothermal systems. Rainwater harvesting systems and water recycling processes can contribute towards the building's environmental rating, and even though they increase the initial investment cost, these systems can be used as a selling point to attract customers.

- Air-conditioning

What type of system will manage the ventilation of the building? In SA, typically we deal more with building air cooling systems and experience relatively mild winters so heating can be designed independently. Do you require structured parking basements? In the case of partially submerged parking areas, it is good practice to ventilate the facades naturally to avoid expensive mechanical ventilation.

Fire protection

Is it a legal requirement for the building to be sprinkler-protected? Is it necessary for a smoke detection system to be installed? Can the fire escape routes be economized to limit the number of staircases, and reduce the number of expensive fire doors?

- Lifts

How many floors are in the development, and do they require mobility-impaired access by means of a lift? In a retail context, do you require escalators for convenience?

9.6 WORKING WITH CONSTRUCTION COST RATES

Allowances for cost rates can be used in the early stages of the development feasibility and will help you to calculate an estimated total development cost. This is commonly referred to as the *order of magnitude* calculation. To find accurate rates, it is recommended to consult an estimator, quantity surveyor or even a building professional such as an experienced contractor in the field you wish to develop in. Bear in mind that these rates could vary from project to project, so they are to be used indicatively and not assigned to the final cost for your development.

The below building cost rates have been determined in consultation with registered quantity surveyors. They are a summary of construction costs only, and exclude land value, professional fees, loss of interest, escalations, and VAT.

Commercial Offices

Type	Height	Rate per m ² (Excl. VAT)
Office Park	3-4 storeys	R 8,500 – R 10,500
Upmarket Office Park	3-4 storeys	R 10,500 – R 16,500
Office Tower	4-10 storeys	R 12,500 – R 18,000
Upmarket Office Tower	4-10 storeys	R 16,500 – R 20,500

Parking Structures

Type	Rate per m ² (Excl. VAT)
Surface parking	R 500 – R 750
Parkade structure	R 4,000 – R 4,800
Basement parking	R 5,000 – R 8,500

Retail Centres

Type	Size	Rate per m ² (Excl. VAT)
Small shopping centre	< 6,000 m ²	R 8,500 – R 10,500
Mid-sized shopping centre	6,000 m ² - 12,000 m ²	R 9,500 – R 12,500
Large shopping centre	12,000 m ² - 50,000 m ²	R 11,500 – R 14,500

Industrial Buildings

Type	Specification	Rate per m ² (Excl. VAT)
Light duty warehouse	Steel frame and cladding	R 4,500 – R 6,500
Heavy duty warehouse	Steel frame, brickwork	R 5,000 – R 7,000
Industrial offices	4-10 storeys	R 7,800 – R 10,500
Cold storage	4-10 storeys	R 14,500 – R 21,800

Residential Developments

The costs to service raw land for a low-cost housing development on individual stands can range between R55,000 to R85,000 per opportunity. High-density residential blocks can attract an opportunity cost for services of between R18,000 to R35,000.

Residential building construction rates are estimated as follows.

Type	Rate per m ² (Excl. VAT)
RDP housing	R 2,500 – R 2,800
Low-cost housing (social)	R 3,200 – R 5,800
Affordable housing block	R 8,000 – R 11,500
Upmarket apartment block	R 15,000 – R 24,500

9.7 ELEMENTS THAT IMPACT COST RATES

The following factors influence the variability of construction rates in a development from a costing point of view.

- Specification

The building specifications can vary, depending on the target market associated to the development. The expense of the building finishes results in a different outcome of development standard and can even determine a building's grade (SAPOA).

- Façade ratio
The overall form or shape of the floorplate in relationship to the length of the building elevation is known as the façade ratio.
- Floor height
The higher the floor-to-floor height of a building, the greater the relative façade area becomes, and so the façade ratio will increase resulting in a higher total building cost.
- Services
The density of plumbing, electrical and mechanical equipment that services the building may have a considerable influence on costs. Compare, for example, a residential building with two-bedroom, two-bathroom apartments to a similar building that has two-bedroom, one-bathroom apartments. In the former, the concentration of plumbing relative to overall square meters is much higher.
- Building efficiency
The ratio of income-producing area relative to total construction area decides the building efficiency. The addition of passages, balconies and atrium spaces increase the construction area without improving potential income.
- Tenant installation allowance (T.I.)
In commercial developments, a distinction may be made between base building specification (typically known as *grey-box*) and the finally completed product (*white box*). A developer may elect to complete up to the grey-box stage, allowing additional flexibility for the purchaser to install their own finishes. This can result in savings for both parties.
- Parking Strategy
The way you decide to accommodate parking has a significant impact on overall cost. Underground basement parking structures (beneath buildings) are expensive relative to open (surface) parking or parkades built above ground. Smaller sites requiring basement excavation will need to utilise lateral support piles, which can pointedly increase construction costs.

9.8 IDEAL RATES OF RETURN

The management of capital in a project has been discussed in the finance secrets portion of the program, but it is worthwhile mentioning that property investors associate feasibility yields with the location, quality, and potential income of a development. The rate of return shown by your feasibility demonstrates the development's risk vs reward relationship, and ultimately determines the cap rate. This is the investor's benchmark and needs to match the level of caution or aggression with which they are prepared to invest.

9.9 CAP-RATE, CAP-RATE, CAP-RATE

The cap rate is an indicator of the overall desirability of your development and is a direct result of the location. Therefore, we have rephrased the saying from *location, location, to cap-rate, cap-rate, cap-rate*. When completing the feasibility template, it is important to consider that the location of your development is the deciding factor for most property investors and here's why. If you have purchased an expensive piece of land (high value), the additional cost in your feasibility will affect your ability to generate a higher return. A desirable location bumps up the development cost and lowers the expected rate of return. In other words, you can get away with a lower yield and still satisfy your investors.