Rhino Construction

QUANTITY SURVEYING

COST MANAGEMENT

ANYTIME – ANYTHING – ANYWHERE

THE ROAD TO SUCCESS IS ALWAYS UNDER CONSTRUCTION

QUANTITY SURVEYING & COST MANAGEMENT

ANYTIME – ANYTHING – ANYWHERE

Our quality objectives are:

- Client satisfaction
- Operational consistency
- Staff retention
- Continuous improvement

We achieve our objectives by following our seven quality principles:

- Focus on our customer
- Collaborate and communicate with others
- Proactively manage risks and changes
- Check and continually improve
- Understand, plan and manage our work
- Follow established procedures
- Manage documentation

Rhino Construction

Albert Lintvelt

Possessing over a decade of experience in the construction industry, we have found to believe that clients are being overcharged on projects and awarded contractors fail to meet project completion dates

Rhino Construction offers you and/or your company professional services from experienced and qualified staff and suppliers, ensuring your investments worth being delivered on time

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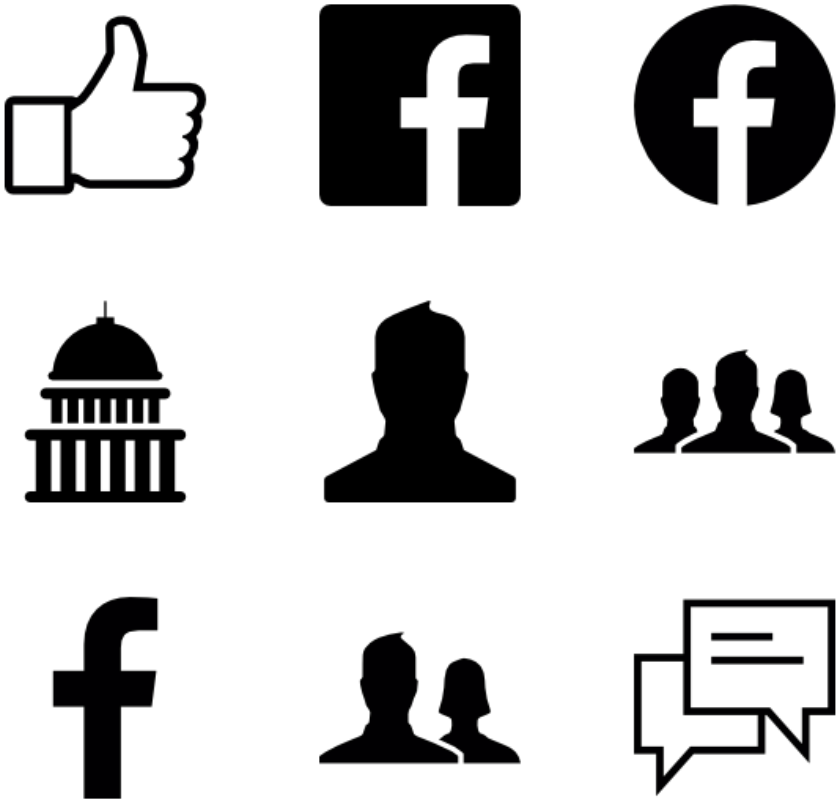

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OUR SERVICES

QUANTITY SURVEYING /

COST MANAGEMENT

Rhino Construction provides comprehensive cost-management services from project initiation to completion through all six stages of the project cycle as identified by The South African Council for the Quantity Surveying Profession, Tariff of Professional Fees, Quantity Surveying Profession Act 2000 (Act 49 of 2000), which is summarized as follows:

Stage 1

- Assisting in developing a clear project brief
- Advising on the procurement policy for the project
- Advising on other professional consultants and services required
- Advising on economic factors affecting the project
- Advising on appropriate financial design criteria
- Providing necessary information within the agreed scope of the project to the other professional consultants

Stage 2

• Agreeing on the documentation program with the principal consultant and other professional consultants

• Reviewing and evaluating design concepts and advising on viability in conjunction with the other professional consultants

• Preparing preliminary and elemental or equivalent estimates of construction cost

• Assisting the client in preparing a financial viability report

• Auditing space allocation against the initial brief

• Providing services for which the following deliverables are applicable:

• Preliminary estimates of construction cost

• Elemental or equivalent estimates of construction cost

• Space allocation audit for the project

Stage 3

• Reviewing the documentation program with the principal consultant and other professional consultants

• Reviewing and evaluating design and outline specifications, as well as exercising cost control in conjunction with the other professional consultants

• Preparing detailed estimates of construction cost

• Assisting the client in reviewing the financial viability report

• Commenting on space and accommodation allowances, and preparing an area schedule

• Providing services for which the following deliverables are applicable:

• Detailed estimates of construction cost

• Area schedule

Stage 4

• Assisting the principal consultant in the formulation of the procurement strategy for contractors, subcontractors and suppliers

• Reviewing working drawings for compliance with the approved budget of construction cost and/or financial viability

• Preparing documentation for both principal and subcontract procurement

• Assisting the principal consultant with calling of tenders and/or negotiation of prices

• Assisting with financial evaluation of tenders

• Assisting with preparation of contract documentation for signature

• Providing services for which the following deliverables are applicable:

• Budget of construction cost

• Tender documentation

• Financial evaluation of tenders

• Priced contract documentation

Stage 5

• Preparing schedules of predicted cash flow

• Preparing proactive estimates for proposed variations for client decision-making

• Adjudicating and resolving financial claims by contractors

• Assisting in the resolution of contractual claims by contractors

• Establishing and maintaining a financial control system

• Preparing valuations for payment certificates to be issued by the principal agent

• Preparing final accounts for the works on a progressive basis

• Providing services for which the following deliverables are applicable:

• Schedules of predicted cash flow

• Estimates for proposed variations

• Financial control reports

• Valuations for payment certificates

• Progressive and draft final accounts

Stage 6

• Preparing valuations for payment certificates to be issued by the principal agent

• Concluding final accounts

• Providing services for which the following deliverables are applicable:

• Valuations for payment certificates

• Final accounts

BUILDING SERVICES COST MANAGEMENT

Every client wants rigorous control of overall building costs and to ensure that every Rand spent is optimized. Building services such as electrical, air-conditioning, fire protection and the various electronic installations are part of every building project and usually comprise 25 to 40 per cent of the total construction cost. It therefore follows that effective cost management of the building services is just as essential as for any other part of the construction costs.

Our building services cost management team draws upon its unique expertise to provide financial management and contract administration of building services. These services include:

- Electrical installation
- Heating, ventilating and air-conditioning (HVAC) installations
- Fire protection systems
- Fire detection and evacuation systems
- Access control
- Closed circuit television (CCTV)
- Lifts, escalators and travellators
- Communication systems
- Building management systems
- Security systems
- Data systems

We have offered cost advice and quantity surveying services for all building services for many years, with a track record which includes many major projects. Meticulous procurement and cost management practices are part of our standard methodology. Independent cost management ensures transparency of costs and a dedicated service not linked to the specific design consultant.

Working in close conjunction with the appointed mechanical, electrical and fire protection consultants, our building services team provides a comprehensive service encompassing the following:

- Cost planning at an early stage prior to detailed design
- Cost studies to compare alternative materials and designs in terms of capital, operating, maintenance and depreciation costs
- Monitoring and evaluating design as it evolves to ensure compatibility with the approved cost plan
- Advising on contractual arrangements and preparing tender procurement documents
- Adjudicating tenders in conjunction with the consultant team
- Cash-flow predictions
- Cost management and reporting
- Valuation of work done during construction
- Determining final costs
- Settling final costs with the contractor and subcontractors

APPROXIMATE INCLUSIVE BUILDING COST RATES

Building cost rates

This section provides a list of approximate inclusive building cost rates for various building types in South Africa.

Rates are current to 1 July 2019, and therefore represent the average expected building cost rates for 2019. It must be emphasized that these rates are indicative only, and should be used circumspectly, as they are dependent upon a number of assumptions. See inclusive rate estimates herein.

The area of the building expressed in m² is equivalent to the construction area where appropriate, as defined in Method for Measuring Floor Areas in Buildings, First Edition (effective from 1 August 2005), published by the South African Property Owners' Association (SAPOA).

Regional Variations

Construction costs normally vary between the different provinces of South Africa. Costs in parts of the Western Cape and KwaZulu-Natal, specifically upper class residential, for example, are generally significantly higher than Gauteng due to the demand for this type of accommodation. Rates have therefore, been based on data received from Gauteng, where possible. Be mindful, however, that cost differences between provinces at a given point in time are not constant and may vary over time due to differences in supply and demand or other factors. Specific costs for any region can be provided upon request by Rhino Construction's office.

Building Rates

Rates include the cost of appropriate building services, e.g. air-conditioning, electrical, etc., but exclude costs of site infrastructure development, parking, any future escalation, loss of interest, professional fees and Value Added Tax (VAT).

Offices Rate per m² (excl. VAT)

Low-rise office park development with standard specification R 6,900 - R 8,500

Low-rise prestigious office park development R 9,000 - R 13,400

High-rise tower block with standard specification R 10,000 - R 13,400

High-rise prestigious tower block R 13,400 - R 16,800

Note: Office rates exclude parking and include appropriate tenant allowances incorporating carpets, wallpaper, louvre drapes, partitions, lighting, air-conditioning and electrical reticulation.

Parking Rate per m² (excl. VAT)

Parking on grade, including

integral landscaping R 500 - R 600

Structured parking R 3,400 - R 3,700

Parking in semi-basement R 3,700 - R 5,000

Parking in basement R 4,000 - R 6,200

Retail Rate per m² (excl. VAT)

Local convenience centers (Not exceeding 5,000m²) R 6,800 - R 9,000

Neighborhood centers (5,000 – 12,000m²) R 7,400 - R 9,500

Community centers (12,000 – 25,000m²) R 8,100 - R 10,400

Minor regional centers (25,000 – 50,000m²) R 9,000 - R 11,100

Regional centers (50,000 – 100,000m²) R 9,500 - R 11,600

Retail Rate per m² (excl. VAT)

Super regional centers (exceeding 100,000m²) R 10,000 - R 13,000

Note: Super regional centers and regional centers are generally inward trading with internal malls, whereas convenient, neighborhood and community centers are generally outward trading with no internal malls.

Retail rates include the cost of tenant requirements and specifications of national chain stores.

Retail costs vary considerably depending on the tenant mix and sizing of the various stores.

Industrial Rate per m² (excl. VAT)

Industrial warehouse, including office and change facilities within structure area

(architect/engineer designed):

- Steel frame, steel cladding and roof sheeting (light-duty) R 3,400 - R 5,000
- Steel frame, brickwork to ceiling, steel cladding above and roof sheeting (heavy-duty) R 4,000 - R 5,700
- Administration offices, ablution and change room block R 6,500 - R 8,200
- Cold storage facilities R 12,000 - R 17,100

Residential Rate per site (excl. VAT)

Site services to low-cost housing stand (250 - 350m²) R 29,800 - R 45,700

Rate per m² (excl. VAT)

RDP housing R 1,700 - R 2,000

Low-cost housing R 2,700 - R 4,400

Simple low-rise apartment block R 6,400 - R 8,800

Duplex townhouse

- Economic R 6,400 - R 9,100

Prestige apartment block R 12,100 - R18,800

Residential Rate per m² (excl. VAT)

Private dwelling houses:

- Economic R 4,350

- Standard R 5,700

- Middle-class R 6,800

- Luxury R 9,800

- Exclusive R 15,100

- Exceptional ('super luxury') R 24,100 - R 48,300

Outbuildings R 3,200 - R 4,600

Rate per no (excl. VAT)

Carport (shaded) - single R 3,900

- double R 7,500

Carport (covered) - single R 6,200

- double R 11,200

Rate per no (excl. VAT)

Swimming pool

- Not exceeding 50 kl R 81,200

- Exceeding 50 kl and not exceeding 100 kl R 75,900 - R 134,200

Tennis court

- Standard R 290,000

- Floodlit R 377,600

Rate per key (excl. VAT)

Hotels

Budget R 973,300 - R 1,378,300

Mid-scale (3 star) R 2,034,200 - R 2,515,900

Luxury (5 star) R 3,516,700 - R 4,479,900

Note: Hotel rates include allowances for furniture, fittings and equipment (FF&E).

Studios Rate per m² (excl. VAT)

Studios - dancing, art exhibitions, etc. R 12,000 - R 17,100

Conference centers Rate per m² (excl. VAT)

Conference center to International standards R 21,600 - R 27,900

Retirement centers Rate per m² (excl. VAT)

Dwelling houses

- Middle-class R 7,100
- Luxury R 10,000

Apartment block

- Middle-class R 7,300
- Luxury R 11,400

Community center

- Middle-class R 9,600
- Luxury R 14,100

Frail care R 11,400

Schools Rate per m² (excl. VAT)

Primary school R 5,700 - R 6,600

Secondary school R 6,700 - R 7,200

Hospitals Rate per m² (excl. VAT)

District hospital R 23,500

Note: Hospital rates exclude allowances for furniture, fittings and equipment (FF&E).

Stadiums Rate per seat (excl. VAT)

Stadium to PSL standards R29,200 - R 45,800

Stadium to FIFA standards R67,400 - R 90,300

Rate per pitch (excl. VAT)

Stadium pitch to FIFA Standards R 19,000,000 - R 23,000,000

Prisons Rate per inmate (excl. VAT)

1,000 Inmate prison R 508,100 - R 540,500

500 Inmate prison R 540,500 - R 604,000

High/maximum security

prison R 806,500 - R 1,079,800

Infrastructure

airport development costs

Rates exclude any future escalation, loss of interest,

professional fees, Value Added Tax (VAT) and

ACSA direct costs.

Apron stands (incl. associated

Infrastructure

Rate per m² (excl. VAT)

Code F Stand (85m long x 80m wide = 6,800m²)

R 4,400

Code E Stand (80m long x 65m wide = 5,200m²)

R 4,600

Code C Stand (56m long x 40m wide = 2,240m²)

R 5,800

Taxi lanes (incl. associated infrastructure)

Rate per m (excl. VAT)

Code F taxi lane (101m wide) R 143,800

Code E taxi lane (85m wide) R 121,300

Code C taxi lane (49m wide) R 70,000

Service Roads Rate per m (excl. VAT)

Service road (10m wide) R 14,900

Dual carriage service road (15m wide) R 19,000

Taxi ways (incl. associated infrastructure)

Rate per m (excl. VAT)

Code F taxi way (70m wide) R 102,500

Runways (incl. associated infrastructure)

Rate per m (excl. VAT)

Code F Runway (3,885m long x 60m wide = 233,100m²) R 238,800

Parking (excluding bulk earthworks)

Rate per bay (excl. VAT)

Structured parking R 157,500

Basement parking R 241,300

Shade net on grade parking R 24,100

Perimeter fencing / Security gates

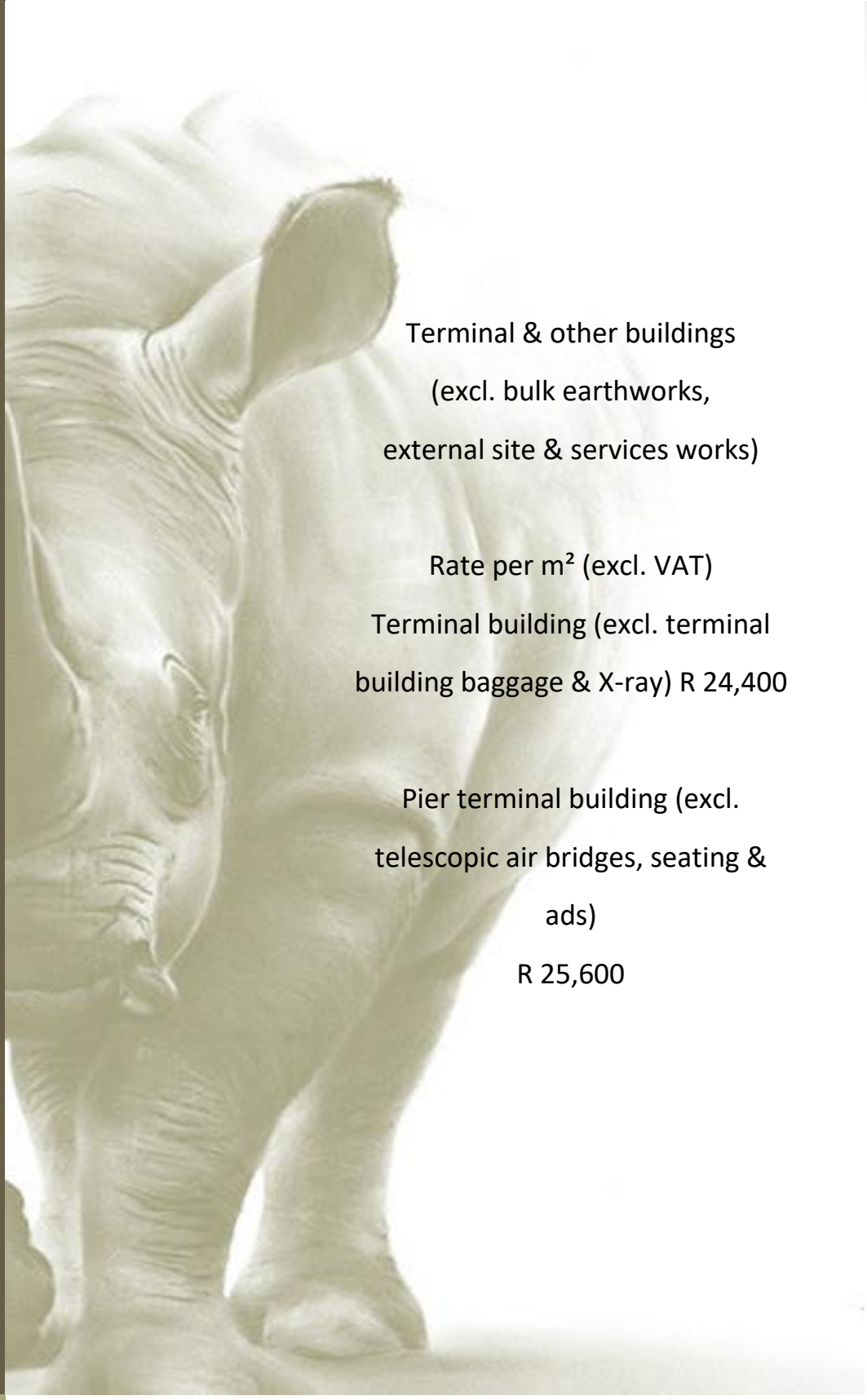
Rate per m (excl. VAT)

Perimeter walls with perimeter intrusion detection (PIDS), etc. R 7,300

Rate per no (excl. VAT)

Security gate R 13,800

Super security gate R 41,300



Terminal & other buildings

(excl. bulk earthworks,

external site & services works)

Rate per m² (excl. VAT)

Terminal building (excl. terminal building baggage & X-ray) R 24,400

Pier terminal building (excl. telescopic air bridges, seating & ads)

R 25,600

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Rate per unit (excl.VAT)

Telescopic air bridges (rate per unit. excl. VAT) R 9,375,000

Aircraft Docking System (ADS) (rate per unit) R 1,375,000

Building services

The following rates are for building services (mechanical and electrical) applicable to typical building types in the categories indicated. Rates are dependent on various factors related to the design of the building and the requirements of the system. In particular, the design, and therefore the cost of air-conditioning, can vary appreciably depending on the orientation, shading, extent and type of glazing, external wall and roof construction, etc.

Electrical installation Rate per m² (excl. VAT)

Offices

- Standard installation R 450 - R 725

- Sophisticated installation R 575 - R 1,000

- UPS, substations, standby

generators to office

buildings R 325 - R 525

Residential R 475 - R 800

Shopping centers R 675 - R 900

Hotels R 800 - R 1,250

Hospitals R 1,050 - R 1,450

Electronic installation Rate per m² (excl. VAT)

Offices

- Standard installation R 475 - R 625

- Sophisticated installation R 550 - R 850

Residential R 250 - R 400

Shopping centers R 550 - R 800

Hotels R 500 - R 675

Hospitals R 500 - R 750

Note: Electronic installation includes access control, CCTV, public address, fire detection, data installation, WIFI, CATV, PABX (Private Automatic Branch Exchange) and Building Management System (BMS).

Fire protection installation Rate per m² (excl. VAT)

(offices)

Sprinkler system, including

hydrants and hose reels

(excluding void sprinklers) R 200 - R 325

Air-conditioning installation Rate per m² (excl. VAT)

Ventilation to parking/service

areas R 275 - R 500

Offices

- Console units R 600 - R 925

- Console/split units R 600 - R 1,050

- Package units R 950 - R 1,600

- Central plant R 1,350 - R 2,500

- Variable refrigerant flow

(VRF) R 1,200 - R 2,500

Residential - split units R 950 - R 1,600

Shopping centers

- Split units R 950 - R 1,250

- Package units R 1,050 - R 1,700

- Evaporative cooling R 475 - R 950

Hotels - public areas R 1,400 - R 2,400

Hospitals Central plant R 2,000 - R 3,200

Rate per key (excl. VAT)

Hotels

- Console units R 17,000 - R 23,000

- Split units R 28,000 - R 40,000

- Central plant R 48,000 - R 74,000

Rate per theatre (excl. VAT)

Hospitals - operating

theatres R400,000 - R1,100,000

BUILDING COST ESCALATIONS

Building cost

The meaning of “building cost” depends on the application and context. A building contractor, for example, may refer to the cost of labor, material, plant, fuel and supervision. In contrast, a developer may refer to either the tender price from the contractor or the ultimate cost of the project, which could include professional fees, plan approval fees, escalation, loss of interest, etc.

For the purposes of this document, building cost shall be deemed to mean the tender price (or negotiated price) submitted by the building contractor.

Escalation rate

There seems to be two popular methods of calculating and expressing percentage annual increases, namely the average rate and the year-on-year rate. The average rate is of no real use in calculating escalation and is of general interest only. The year-on-year rate should be used in escalation calculations, taking cognizance of actual project program.

The average rate compares the indices for each month (or quarter) of the year with those of the corresponding months (or quarters) of the preceding year and calculates the average of these, which is then quoted as the average annual increase for that particular year.

The year-on-year rate compares the January (or December) index with the index for the corresponding month of the previous year and reflects the increase over that year.

There could be a significant difference in the two rates in question. For example, in 2013 the year-on-year rate (January 2013 to January 2014) of building cost inflation in South Africa was only 4.6% while the average annual rate (comparing monthly indices) was 7.3%.

Calculation of estimated escalation of construction Contracts

Pre-contract

Construction cost changes on an ongoing basis for various reasons. Provision should therefore be made for changes in tender prices during the period from the date of the estimate to the expected tender date. Adding the estimated current building cost to the total equals the anticipated tender amount. This is calculated by multiplying the estimated current building cost by the average estimated monthly percentage increase and by the number of months from date of estimate to tender date.

Contract price adjustment

Provision is made for escalation in building cost during the contract period. The Contract Price Adjustment Provisions (CPAP) formula provides for 85% of the contract amount to be subject to escalation adjustment with the remaining 15% fixed. Furthermore, a factor must be introduced to take account of the cash flow of payments during the construction period. 0.6 is usually acceptable if a short method of calculation is employed.

The total escalation during the contract period is therefore calculated by multiplying the anticipated tender amount by 0.85 and 0.6 and then by the estimated monthly percentage increase as indicated by the relevant indices in the CPAP formula and by the contract period expressed in months.

Tender price escalation

The annual year-on-year increase in building costs (i.e. tender prices) based on the indices published by the Bureau for Economic Research, University of Stellenbosch (BER) (January to-January of each year) and for CPAP formula (Work Group 181 Commercial/Industrial buildings) published by Statistics South Africa (P0151), are as follows:

Value added tax (VAT)

As the majority of developers are registered vendors in the property industry, any Value Added Tax (VAT) on commercial property development is fully recoverable. Therefore, to reflect the net development cost, VAT should be excluded. Should the gross cost (i.e. after VAT inclusion) be required, then VAT at the ruling rate (currently 15%) should be added.

Cognizance should be taken, however, of the effect of VAT on cash flow over a period of time. This will vary according to the payment period of the individual vendor. In all cases however, it will add to the capital cost of the project to the extent of interest on outstanding VAT for the VAT cycle of the particular vendor.

RETURN ON INVESTMENT

Criteria to be employed

There are two distinct criteria generally used for evaluating the financial viability of a property investment, namely:

- The initial return and
- The cash flow analysis

The initial return

The initial return is based on the net income during the first year of operation of the development. The return is expressed as a percentage per annum of the anticipated capital investment. Escalation in construction cost and cost of capital are both taken into account in an effort to incorporate the time value of money.

The major advantage of employing the initial return method is that expenses and income do not have to be escalated too far into the future. Therefore, these are relatively accurate and easily understood in today's money terms.

The fact that the first year of operation may have a higher vacancy factor than subsequent years should be ignored when the initial return is calculated in order to reflect long-term potential more accurately.

The initial return should be qualified as follows:

- All expenses and income have been escalated to the construction completion date
- Interim income received prior to the construction completion date has been deducted from the capital investment after adjusting for operating expenses and cost of capital

- The returns are expressed as percentages of the escalated capital investment and do not take into account loans, loan repayments or interest charges on loans

• The calculated returns are for the first complete year of operation only and do not cater for the following:

• When the project may not reach full maturity during the first year of operation

• Vacancies

• Recoupment of capital during the income-bearing period of the investment or realization value of the investment at the end of the investment period

• Income tax.

Cash flow analysis over a predetermined period

In the cash flow method, the income and expenditure cash flow over the economic lifespan of the investment is taken into account. Usually an Internal Rate of Return (IRR) and/or a Net Present Value (NPV) is employed to evaluate the financial viability.

The NPV (discounted cash flow) method works as follows: Determine the sum of all cash flows (inflows, outflows and initial investment) and discount to present values at the project's cost of capital. With a positive NPV the project can be accepted and it should be rejected if the NPV is negative.

The IRR is the rate of interest that equates the present value of the expected future net income with the present value of the cost of the investment. The NPV would therefore be exactly zero if the IRR is used as the discount rate. The IRR of an investment is generally used by institutional investors, as it is a comparative indication of the profitability of alternative investment options.

A weakness of the IRR calculation is the fact that an implicit assumption is made that cash flows are reinvested at the project's own IRR. The Modified Internal Rate of Return (MIRR) overcomes this by assuming that cash flows are reinvested at the cost of capital rate (or any other given rate), and may be calculated in addition. As the cost of capital rate is normally determined at a lower rate than the IRR, it can be assumed that the MIRR calculation will always render a lower result.
The assumptions on which the cash flow return is based must be listed.

These should include the assumed investment period (e.g. 20 years after the construction completion date), that income has been taken into account at the beginning of each month and expenditure at the end of each month, the terminal value, and escalation in rental and operating expenses over the investment period, etc.

It is suggested that, where applicable, a comprehensive financial viability analysis should incorporate both the initial return and the cash flow method of evaluation. It is significant to note that there is a close relationship between the initial return and the IRR. However, this is to be applied with care by an experienced analyst.

We would like to thank you

for viewing our company profile,

we hope it suits you well

and we are looking forward

to be working with you

and/or your company by

providing you with the most

excellent service by

Professionals and Quality products.

Rhino Construction

www.rhinoconstructionsa.co.za