

An Investigation into the Benefits of EDGE Residential Estates in terms of Real-World Savings

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Research Question:

What is the impact of EDGE certification on residential electricity savings, and how can this impact be translated into tangible real-world savings?

Research Aim:

To determine the impact of EDGE certification on residential electricity savings and how this can be converted into real-world savings.

Research Hypothesis:

EDGE-certified residential developments in Gauteng create increased electricity savings and these benefits can be converted into real-world savings.

The null hypothesis therefore states there are no monetary savings associated with EDGE certification.





Green Buildings

Constantly evolving concept/definition:

The planning, design and property operations with key objectives in energy use, water consumption, materials and overall building impact

Excellence in Design and Greater Efficiencies (EDGE)



Created by the International Finance Corporation (IFC) in 2014



Green Building Platform



Global certification criteria: 20% reduction in energy consumption, water use, and embodied energy



Designed for Efficiency

EDGE Certified Residential Estate

The case study analysed is
in Gauteng, South Africa,
and has a total of 503 units.

Comprised of:

219 one-bed units

232 two-bed units

52 three-bed units.



Results and Findings

Average Electricity Consumption per Non-EDGE Certified Unit per month (kWh)

One Bed	Two Bed	Three Bed
246.86	349.06	499.12

Average Electricity Consumption per EDGE Certified unit per month (kWh)

One Bed	Two Bed	Three Bed
184.81	222.76	229.23

Total Average Electricity Savings of EDGE Certified Units pers month (kWh)

One Bed	Two Bed	Three Bed
62.05	126.29	269.96

Financial Benefits

Monthly savings were calculated using the 2023 electricity prices gathered from the Gauteng Region. The cost per kWh was R2.5

Monthly Monetary Savings generated from EDGE Certified Units in Gauteng

Unit Type	Monthly Savings	Annual Savings
One Bed	R 157	R 1887
Two Bed	R 320	R 3842
Three Bed	R 684	R 8213

Real World Savings



To determine the real-world savings that can be created by investing in EDGE and green-certified buildings.



Mortgages



EDGE Alternative Investment (EAI) balanced fund

Original Mortgage

Prime Interest Rate (September 2023):

11.75%

Mortgage Details (N=20)

Unit Type	One Bed	Two Bed	Three Bed
Purchase Price	R 700 000	R 950 000	R 1 000 000
Deposit (20%)	R 140 000	R 190 000	R 200 000
Loan Amount (LTV 80%)	R 560 000	R 760 000	R 800 000
Monthly Repayments	R 6 068	R 8 236	R 8 669

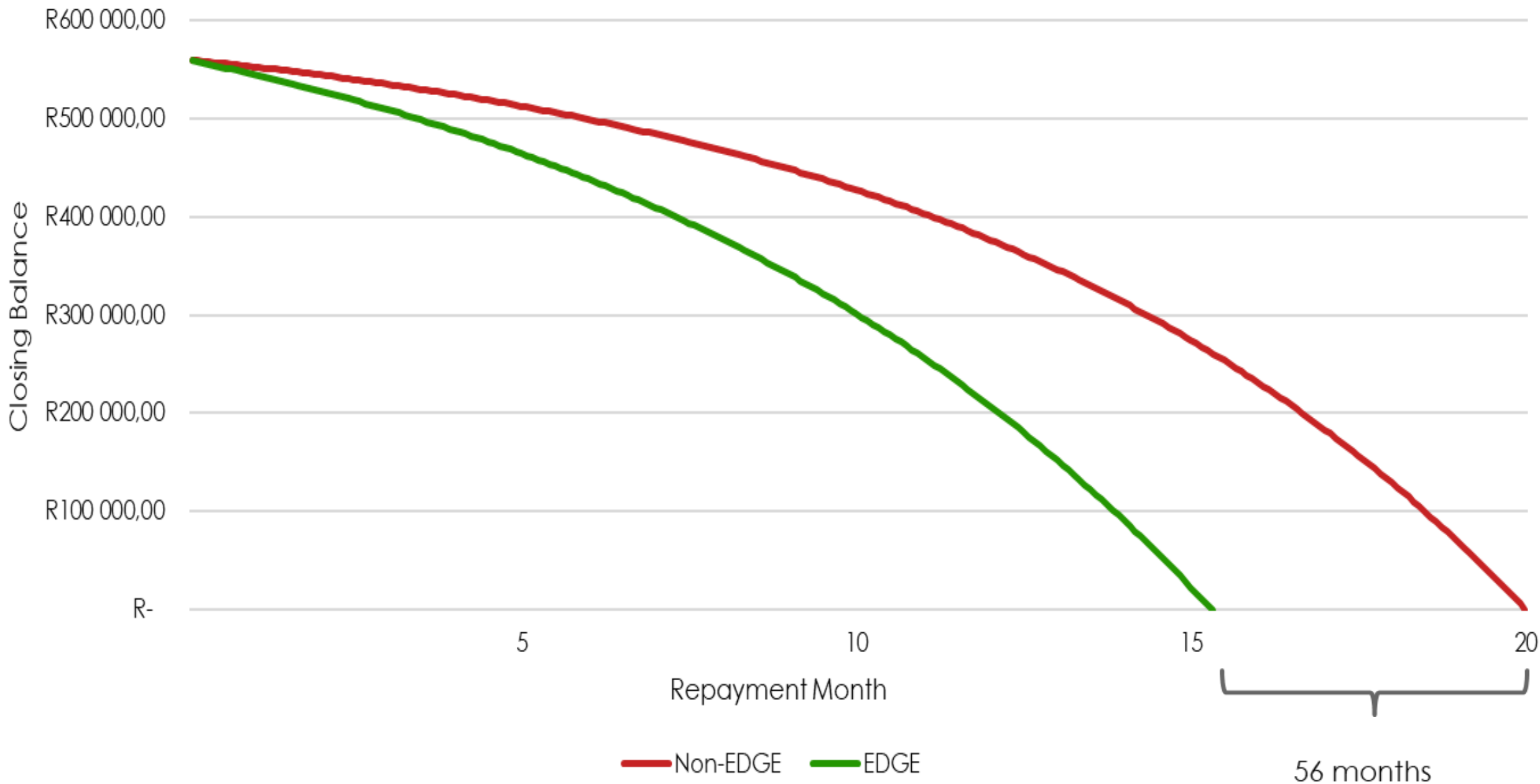
Green Mortgage

Prime Interest rate less one:
10.75%

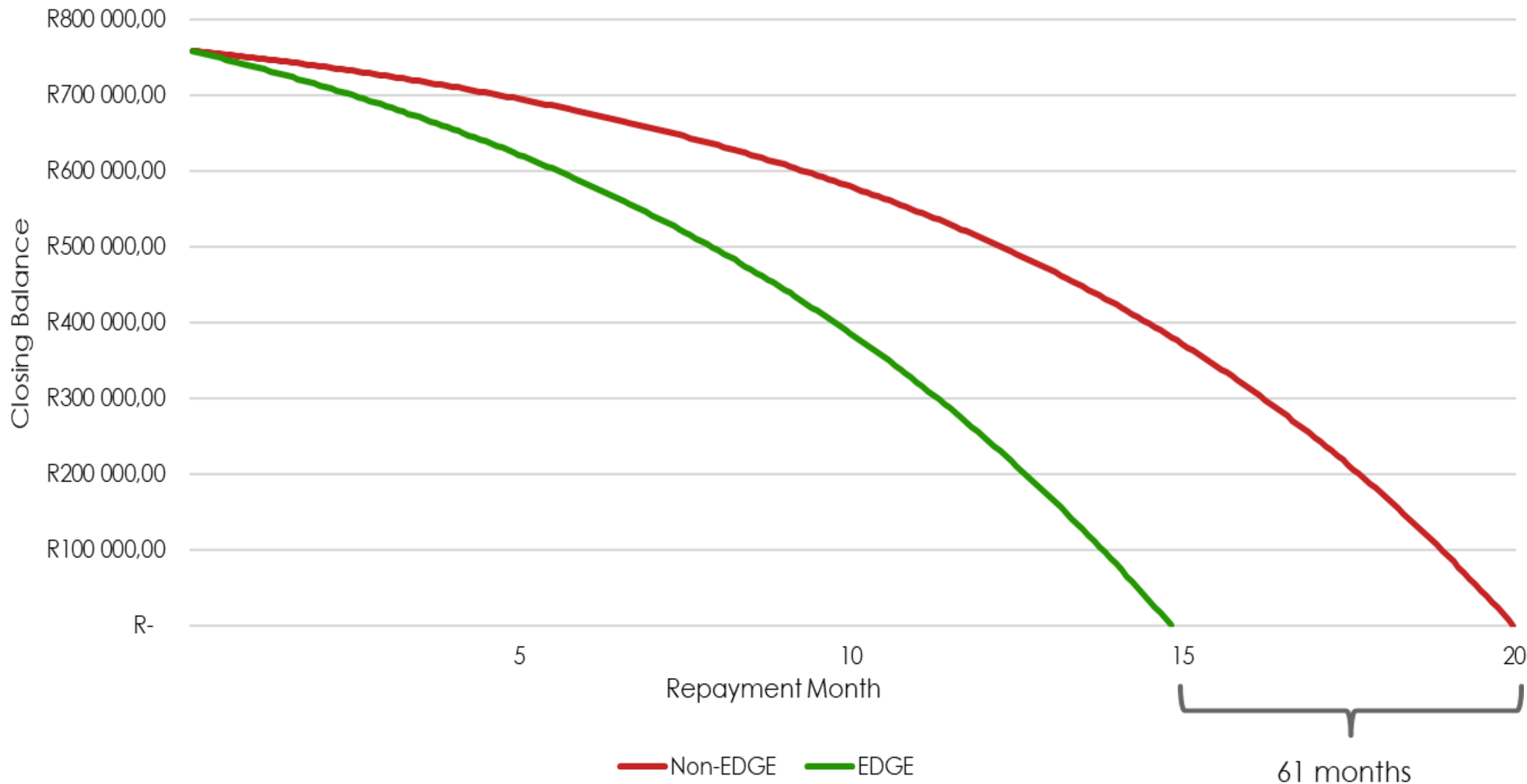
Green Mortgage Details

Unit Type	One bed	Two Bed	Three Bed
Non-EDGE PMT	R 6 068	R 8 236	R 8 669
EDGE Savings p/m	R 157	R 320	R 684
Increased PMT	R 6 226	R 8 556	R 9 354

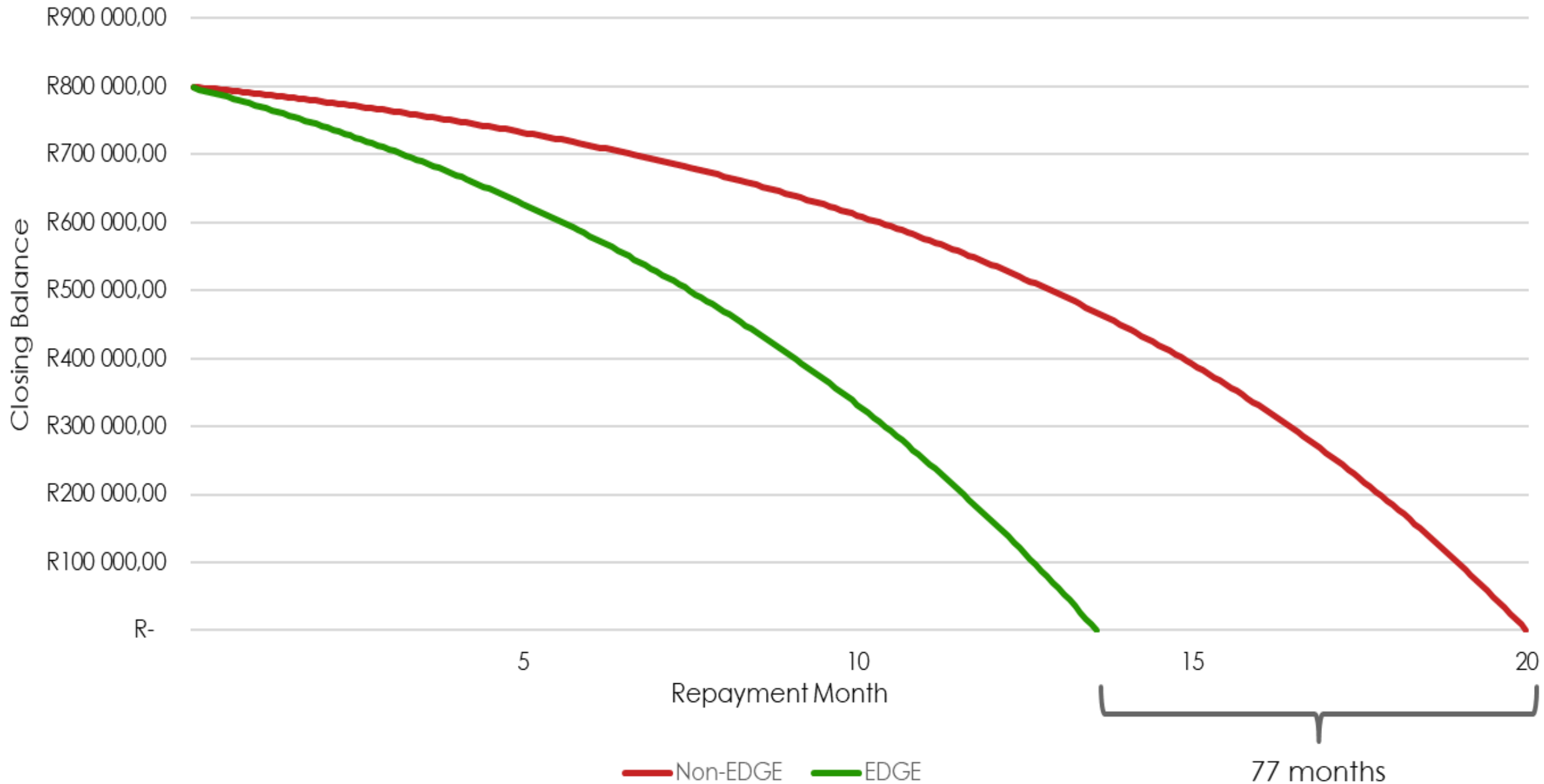
1 Bed EDGE VS Non-EDGE Amortisation Schedule



2 Bed EDGE VS Non-EDGE Amortisation Schedule



3 Bed EDGE VS Non-EDGE Amortisation Schedule



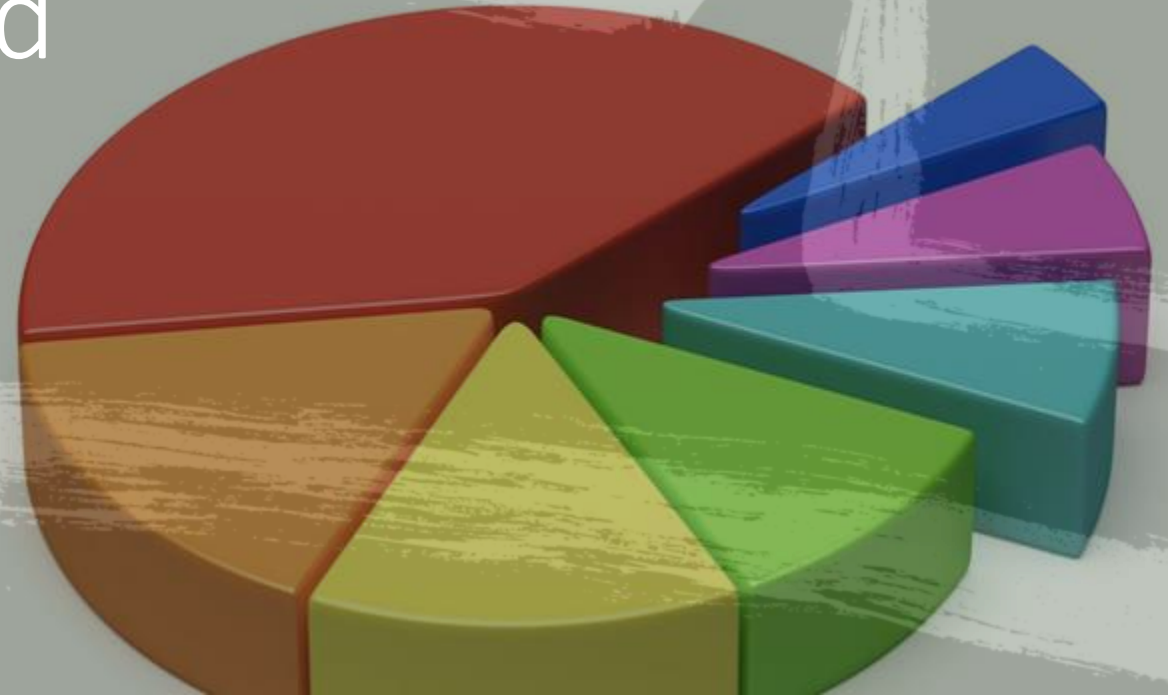
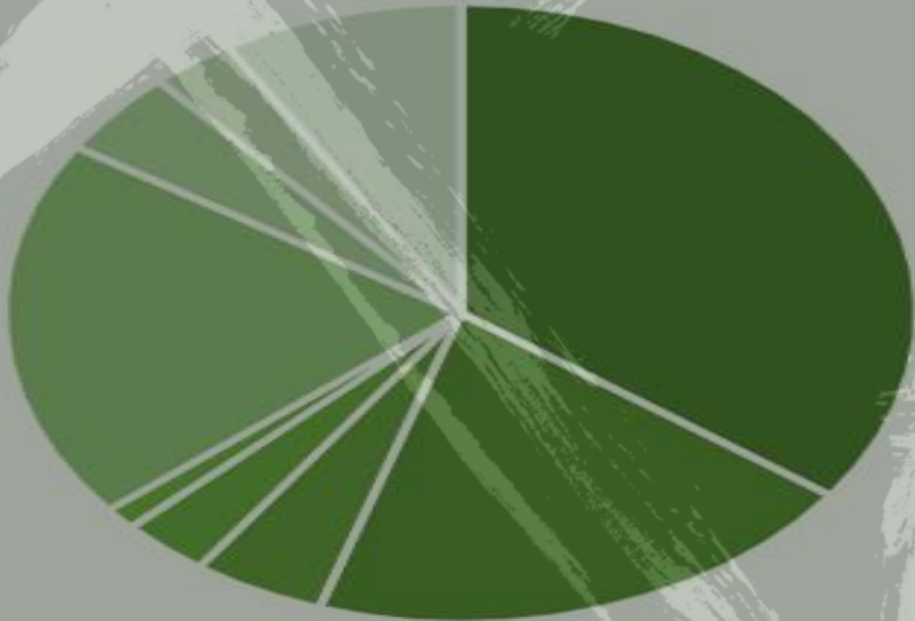
Results

Results of Increasing Monthly Payments Using EDGE Monetary Savings

Unit Type	One Bed	Two Bed	Three Bed
Term Reduction (months)	56	61	77
Payment Savings	R 348 661	R 521 939	R 720 267
Interest Saved	R 68 884	R 109 268	R 174 992
Total Savings	R 417 545	R 631 207	R 895 259



EDGE Alternative Investment (EAI) Fund



EDGE Alternative Investment (EAI) Fund

Average Return of Balanced Funds	
Balanced Fund	Returns Since Inception
Fund A	8.78%
Fund B	15%
Fund C	11.80%
Fund D	8,24%
Average Top Performers	10.96%
Average Benchmark	7.71%
Final Value	9.50%

Real World Savings (RWS) Loan Ratio

Present Values:

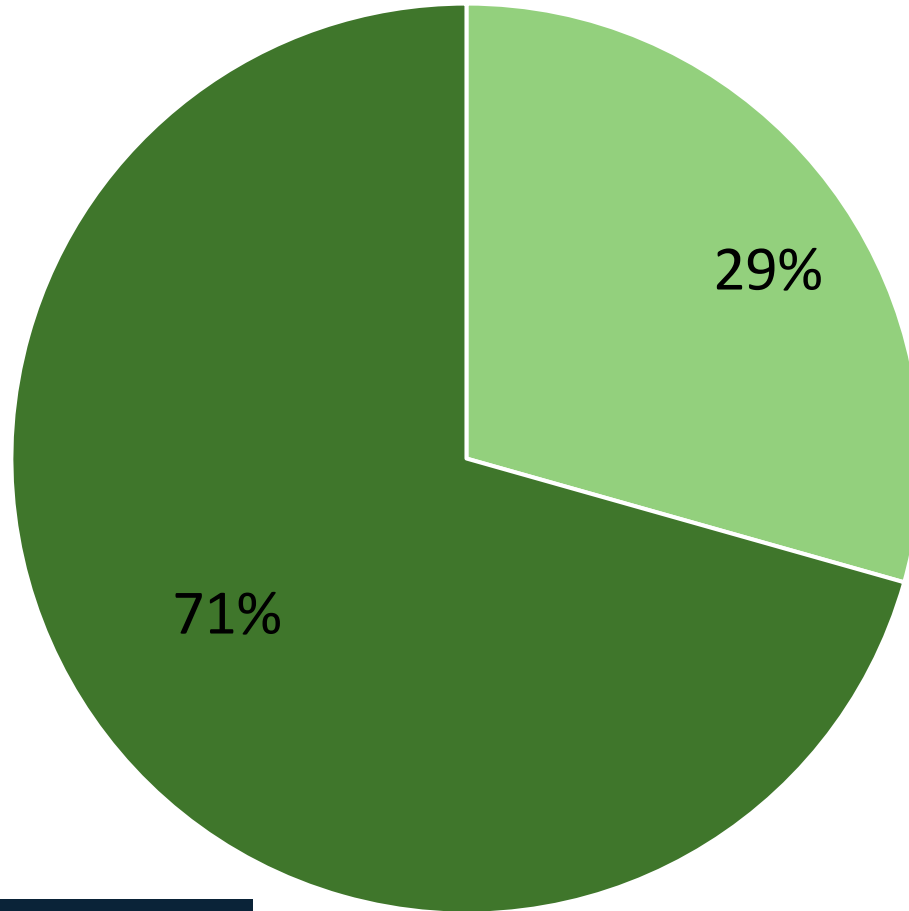
1 bed: R 164 557

2 bed: R 251 662

3 bed: R 371 957



Real World Savings (RWS) Loan Ratio (1 Bed):

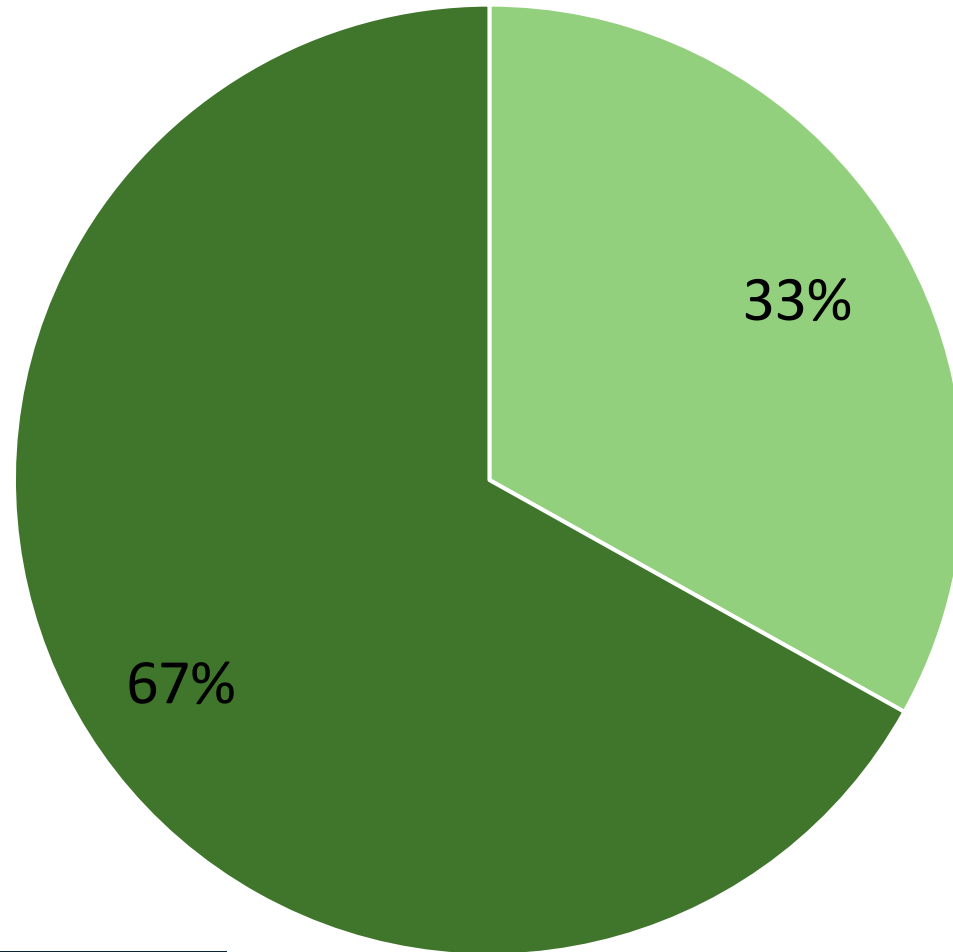


■ Present Value: R164 557

■ Loan: R560 000



Real World Savings (RWS) Loan Ratio (2 Bed):

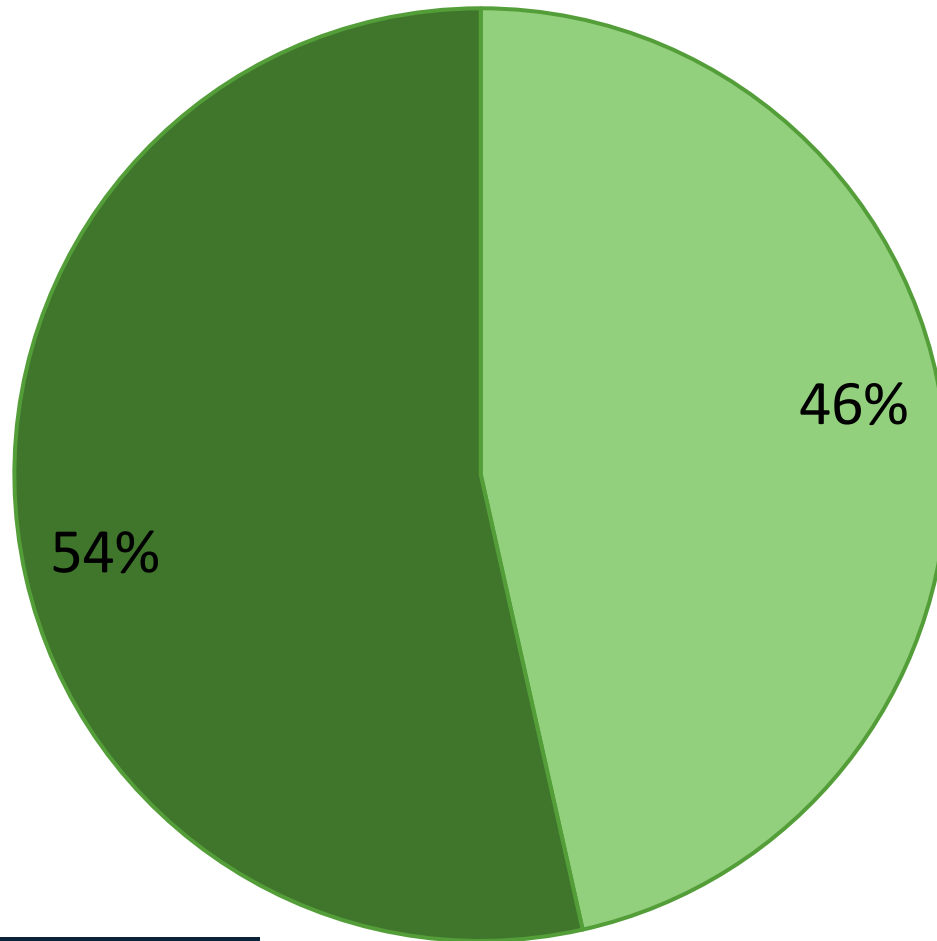


■ Present Value: R251 662

■ Loan: R760 000



Real World Savings (RWS) Loan Ratio (3 Bed):



■ Present Value: R371 957

■ Loan: R800 000





Conclusion:

Empowering Tomorrow, Building Today: EDGE Certified Homes Pave the Way for Generational Wealth, Sustainability, and Inclusive Prosperity!