UCT Benchmark Energy Report
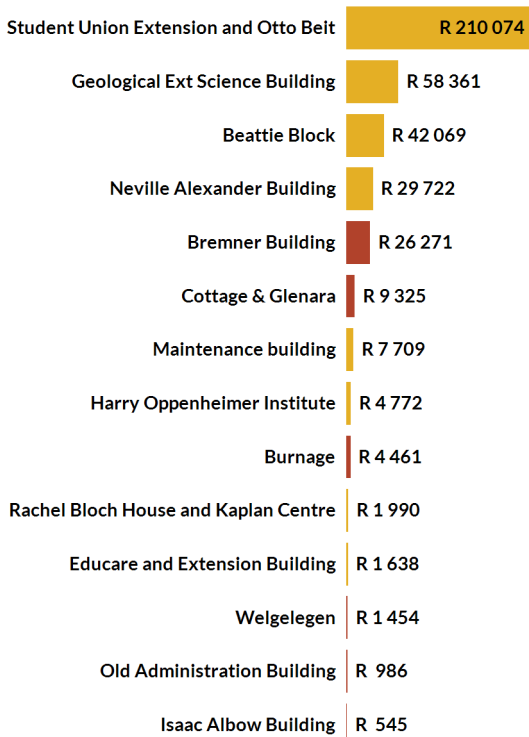
Year on year Total kWh comparison for UCT
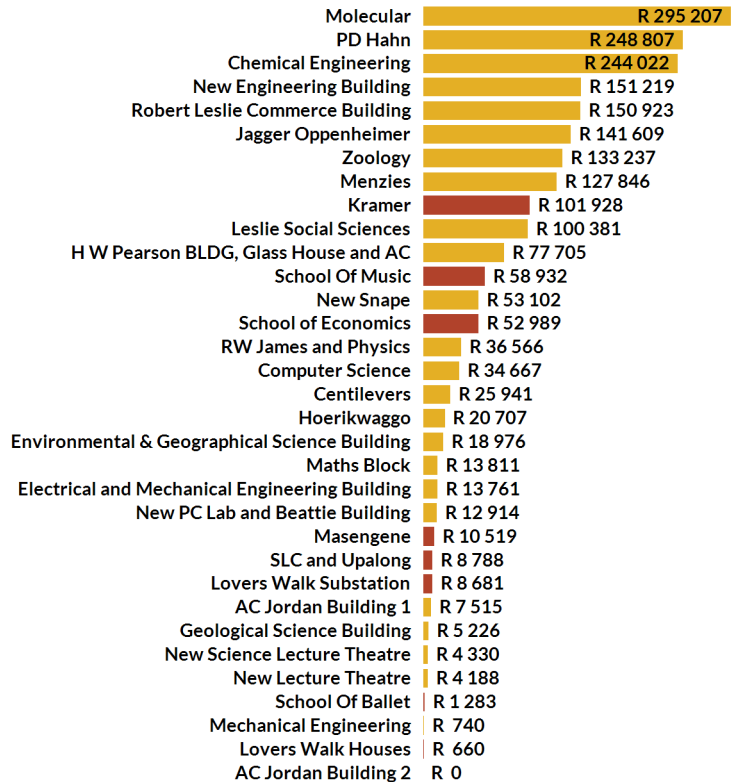

	January 2020	January 2021
	2 755 934	2 132 294
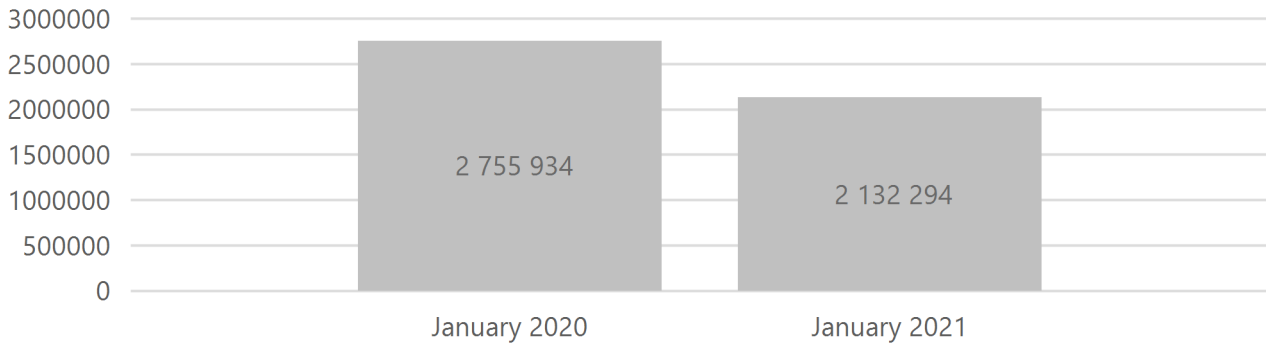
Total Monthly Electricity Cost

The figure below summarize monthly energy costs .

OFFICE

Student Union Extension and Otto Beit	R 210 074
Geological Ext Science Building	R 58 361
Beattie Block	R 42 069
Neville Alexander Building	R 29 722
Bremner Building	R 26 271
Cottage & Glenara	R 9 325
Maintenance building	R 7 709
Harry Oppenheimer Institute	R 4 772
Burnage	R 4 461
Rachel Bloch House and Kaplan Centre	R 1 990
Educare and Extension Building	R 1 638
Welgelegen	R 1 454
Old Administration Building	R 986
Isaac Albow Building	R 545

LECTURE VENUE

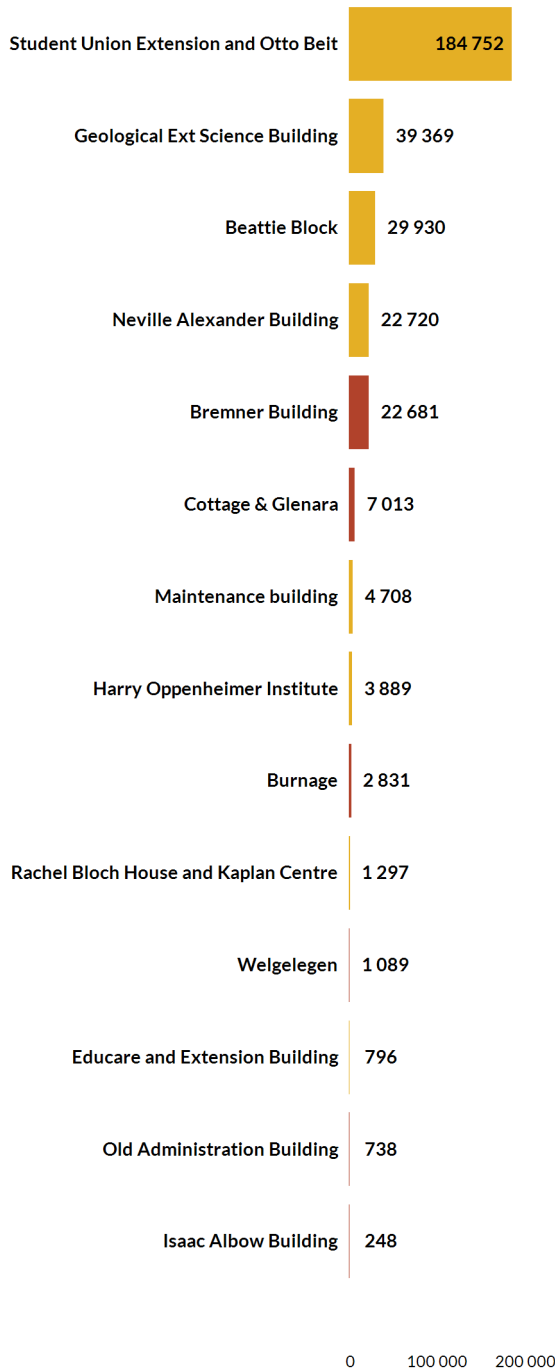|	
Molecular	R 295 207
PD Hahn	R 248 807
Chemical Engineering	R 244 022
New Engineering Building	R 151 219
Robert Leslie Commerce Building	R 150 923
Jagger Oppenheimer	R 141 609
Zoology	R 133 237
Menzies	R 127 846
Kramer	R 101 928
Leslie Social Sciences	R 100 381
H W Pearson BLDG, Glass House and AC	R 77 705
School Of Music	R 58 932
New Snape	R 53 102
School of Economics	R 52 989
RW James and Physics	R 36 566
Computer Science	R 34 667
Centilevers	R 25 941
Hoerikwaggo	R 20 707
Environmental & Geographical Science Building	R 18 976
Maths Block	R 13 811
Electrical and Mechanical Engineering Building	R 13 761
New PC Lab and Beattie Building	R 12 914
Masengene	R 10 519
SLC and Upalong	R 8 788
Lovers Walk Substation	R 8 681
AC Jordan Building 1	R 7 515
Geological Science Building	R 5 226
New Science Lecture Theatre	R 4 330
New Lecture Theatre	R 4 188
School Of Ballet	R 1 283
Mechanical Engineering	R 740
Lovers Walk Houses	R 660
AC Jordan Building 2	R 0

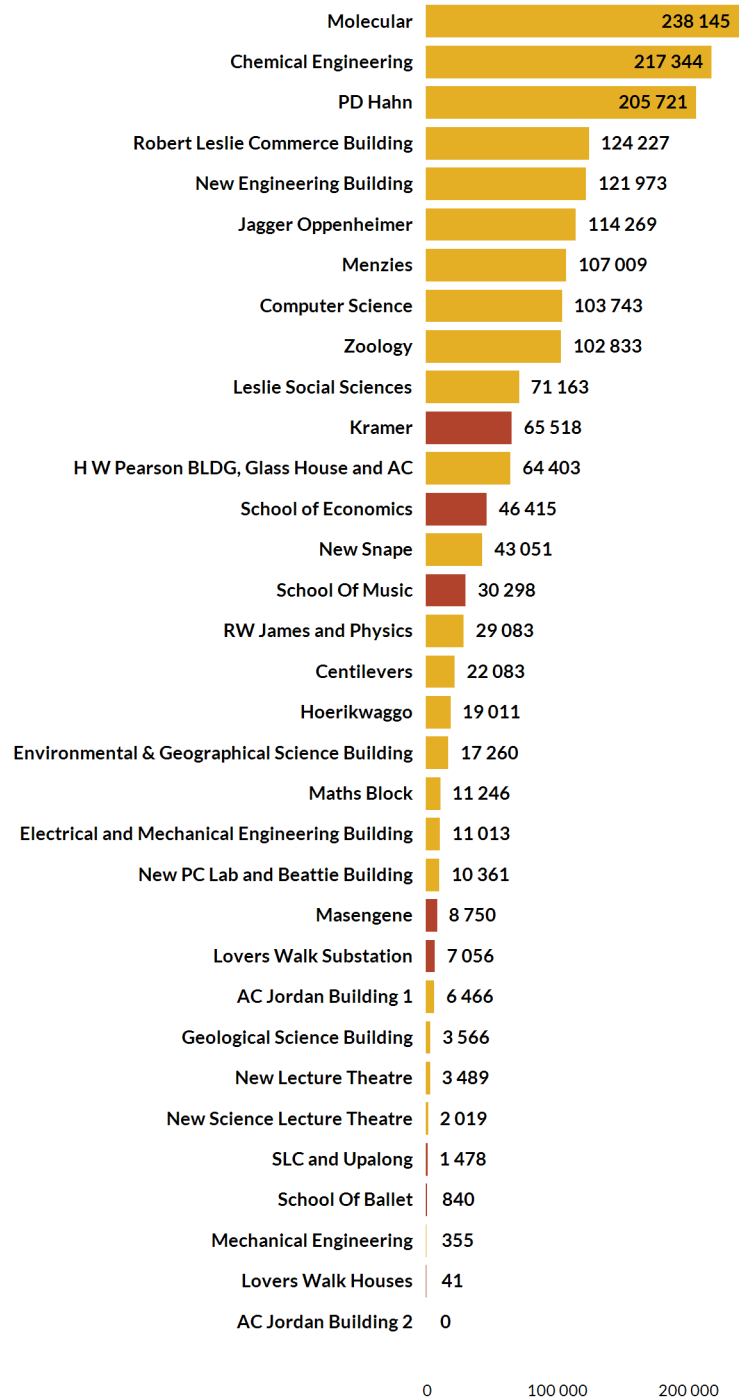| Region Key: |
|---|
| Lower Campus |
| Upper Campus |

Monthly Energy Usage (kWh)

The figures in the graphs above represent the total energy consumption measured in kWh's over the reporting period. The less kWh's consumed within a particular month directly equates to alower electricity bill.

OFFICE

Building	kWh
Student Union Extension and Otto Beit	184 752
Geological Ext Science Building	39 369
Beattie Block	29 930
Neville Alexander Building	22 720
Bremner Building	22 681
Cottage & Glenara	7 013
Maintenance building	4 708
Harry Oppenheimer Institute	3 889
Burnage	2 831
Rachel Bloch House and Kaplan Centre	1 297
Welgelegen	1 089
Educare and Extension Building	796
Old Administration Building	738
Isaac Albow Building	248

LECTURE VENUE

Building	kWh
Molecular	238 145
Chemical Engineering	217 344
PD Hahn	205 721
Robert Leslie Commerce Building	124 227
New Engineering Building	121 973
Jagger Oppenheimer	114 269
Menzies	107 009
Computer Science	103 743
Zoology	102 833
Leslie Social Sciences	71 163
Kramer	65 518
H W Pearson BLDG, Glass House and AC	64 403
School of Economics	46 415
New Snape	43 051
School Of Music	30 298
RW James and Physics	29 083
Centilevers	22 083
Hoerikwaggo	19 011
Environmental & Geographical Science Building	17 260
Maths Block	11 246
Electrical and Mechanical Engineering Building	11 013
New PC Lab and Beattie Building	10 361
Masengene	8 750
Lovers Walk Substation	7 056
AC Jordan Building 1	6 466
Geological Science Building	3 566
New Lecture Theatre	3 489
New Science Lecture Theatre	2 019
SLC and Upalong	1 478
School Of Ballet	840
Mechanical Engineering	355
Lovers Walk Houses	41
AC Jordan Building 2	0

Region Key:
Lower Campus
Upper Campus

Report Period: January 2021

TERRA FIRMA SOFTWARE
ENERGY MANAGEMENT SOLUTIONS
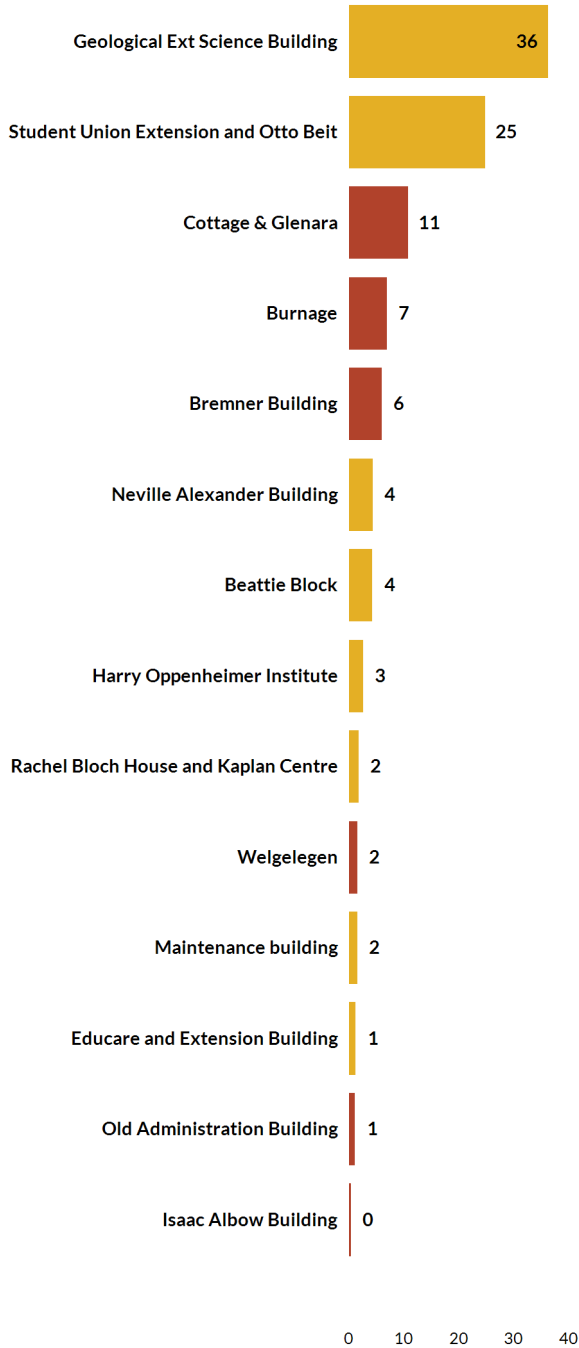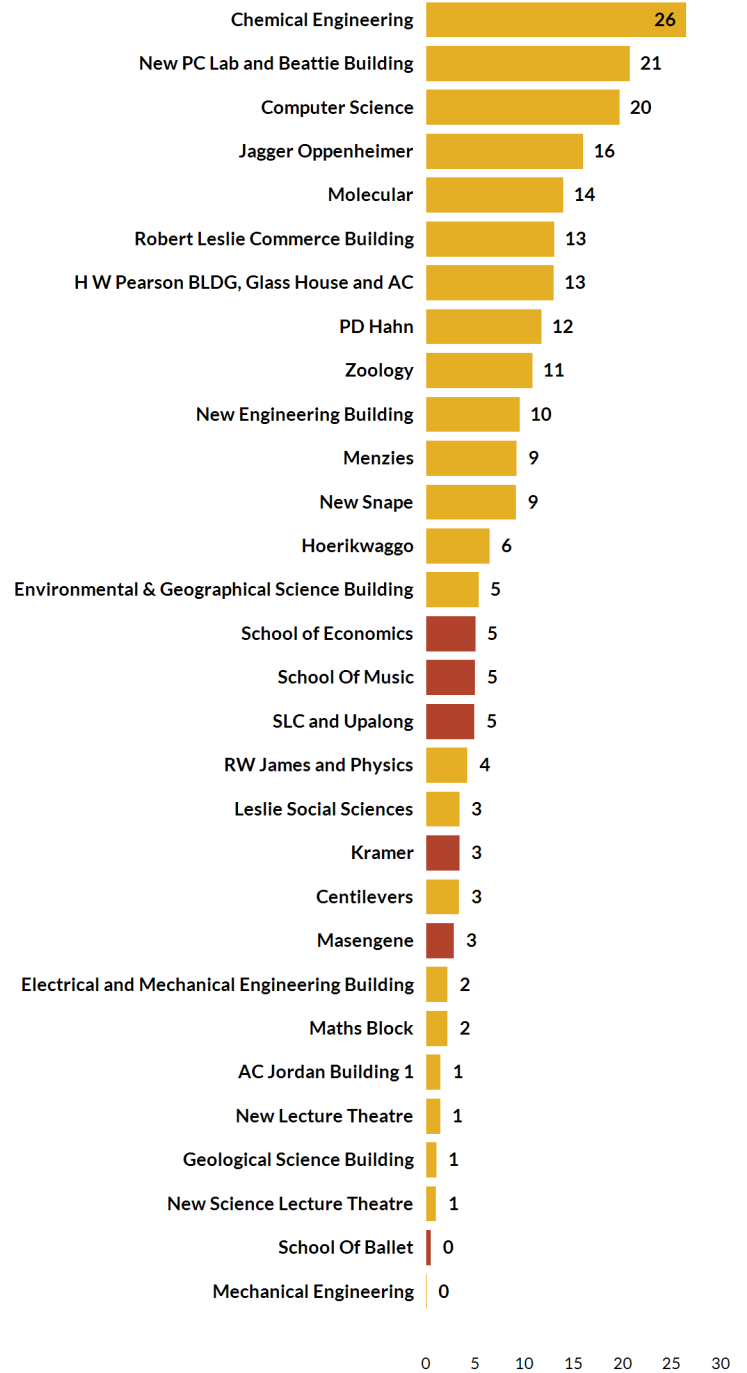
Monthly Energy Usage per Square Meter(kWh/m2)

The monthly energy usage per square meter is a benchmarking metric to determine energy usage intensities. The benchmarking metric compares energy intensity figures of similar operations.

OFFICE

Building	kWh/m2
Geological Ext Science Building	36
Student Union Extension and Otto Beit	25
Cottage & Glenara	11
Burnage	7
Bremner Building	6
Neville Alexander Building	4
Beattie Block	4
Harry Oppenheimer Institute	3
Rachel Bloch House and Kaplan Centre	2
Welgelegen	2
Maintenance building	2
Educare and Extension Building	1
Old Administration Building	1
Isaac Albow Building	0

LECTURE VENUE

Building	kWh/m2
Chemical Engineering	26
New PC Lab and Beattie Building	21
Computer Science	20
Jagger Oppenheimer	16
Molecular	14
Robert Leslie Commerce Building	13
H W Pearson BLDG, Glass House and AC	13
PD Hahn	12
Zoology	11
New Engineering Building	10
Menzies	9
New Snape	9
Hoerikwaggo	6
Environmental & Geographical Science Building	5
School of Economics	5
School Of Music	5
SLC and Upalong	5
RW James and Physics	4
Leslie Social Sciences	3
Kramer	3
Centilevers	3
Masengene	3
Electrical and Mechanical Engineering Building	2
Maths Block	2
AC Jordan Building 1	1
New Lecture Theatre	1
Geological Science Building	1
New Science Lecture Theatre	1
School Of Ballet	0
Mechanical Engineering	0

Region Key:
Lower Campus
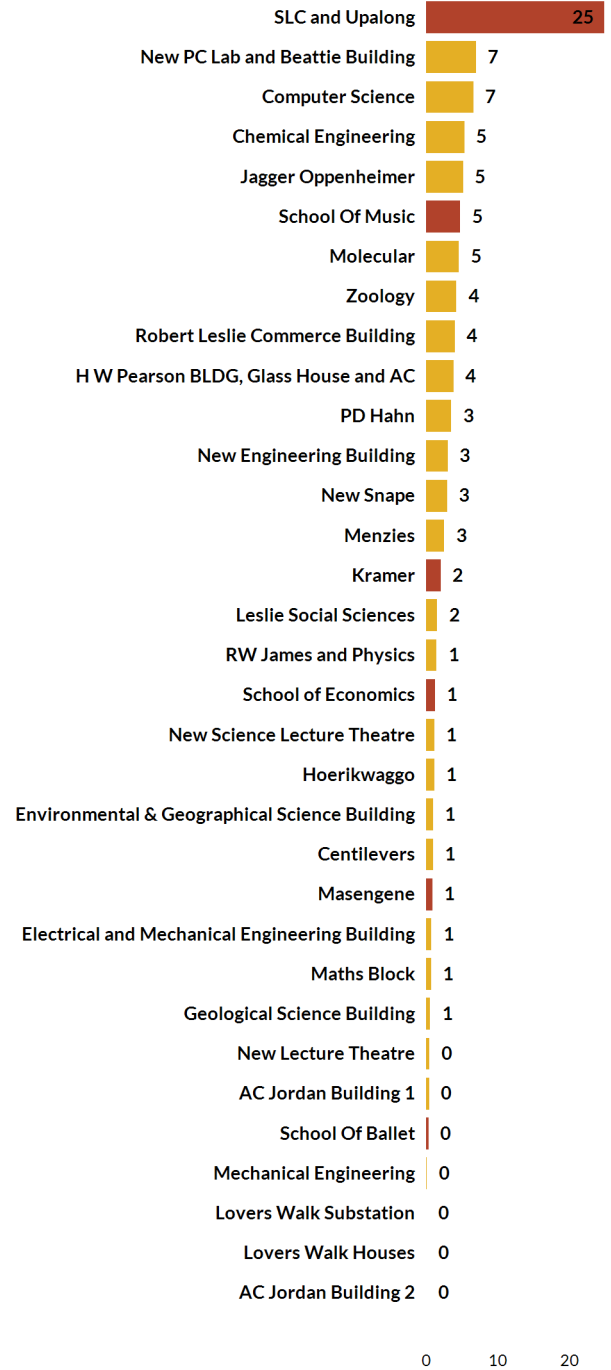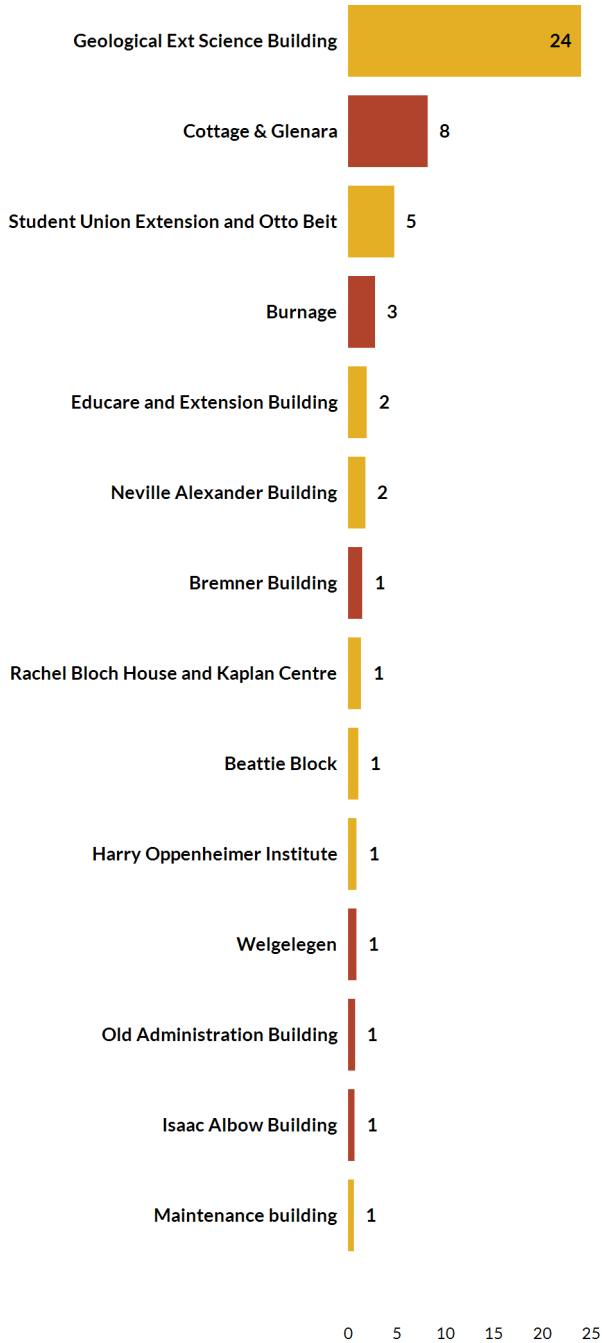Upper Campus

Report Period: January 2021

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ENERGY MANAGEMENT SOLUTIONS

Monthly Energy Cost per Square Meter(R/m2)

The monthly cost (R) per square meter (m2) is a benchmarking metric to determine energy cost intensities . The benchmarking metric is useful in order to compare intensity figures to other similar operations.

OFFICE

Building	Value
Geological Ext Science Building	24
Cottage & Glenara	8
Student Union Extension and Otto Beit	5
Burnage	3
Educare and Extension Building	2
Neville Alexander Building	2
Bremner Building	1
Rachel Bloch House and Kaplan Centre	1
Beattie Block	1
Harry Oppenheimer Institute	1
Welgelegen	1
Old Administration Building	1
Isaac Albow Building	1
Maintenance building	1

LECTURE VENUE

Building	Value
SLC and Upalong	25
New PC Lab and Beattie Building	7
Computer Science	7
Chemical Engineering	5
Jagger Oppenheimer	5
School Of Music	5
Molecular	5
Zoology	4
Robert Leslie Commerce Building	4
H W Pearson BLDG, Glass House and AC	4
PD Hahn	3
New Engineering Building	3
New Snape	3
Menzies	3
Kramer	2
Leslie Social Sciences	2
RW James and Physics	1
School of Economics	1
New Science Lecture Theatre	1
Hoerikwaggo	1
Environmental & Geographical Science Building	1
Centilevers	1
Masengene	1
Electrical and Mechanical Engineering Building	1
Maths Block	1
Geological Science Building	1
New Lecture Theatre	0
AC Jordan Building 1	0
School Of Ballet	0
Mechanical Engineering	0
Lovers Walk Substation	0
Lovers Walk Houses	0
AC Jordan Building 2	0

Region Key:
Lower Campus
Upper Campus

Report Period: January 2021

TERRA FIRMA SOFTWARE
ENERGY MANAGEMENT SOLUTIONS
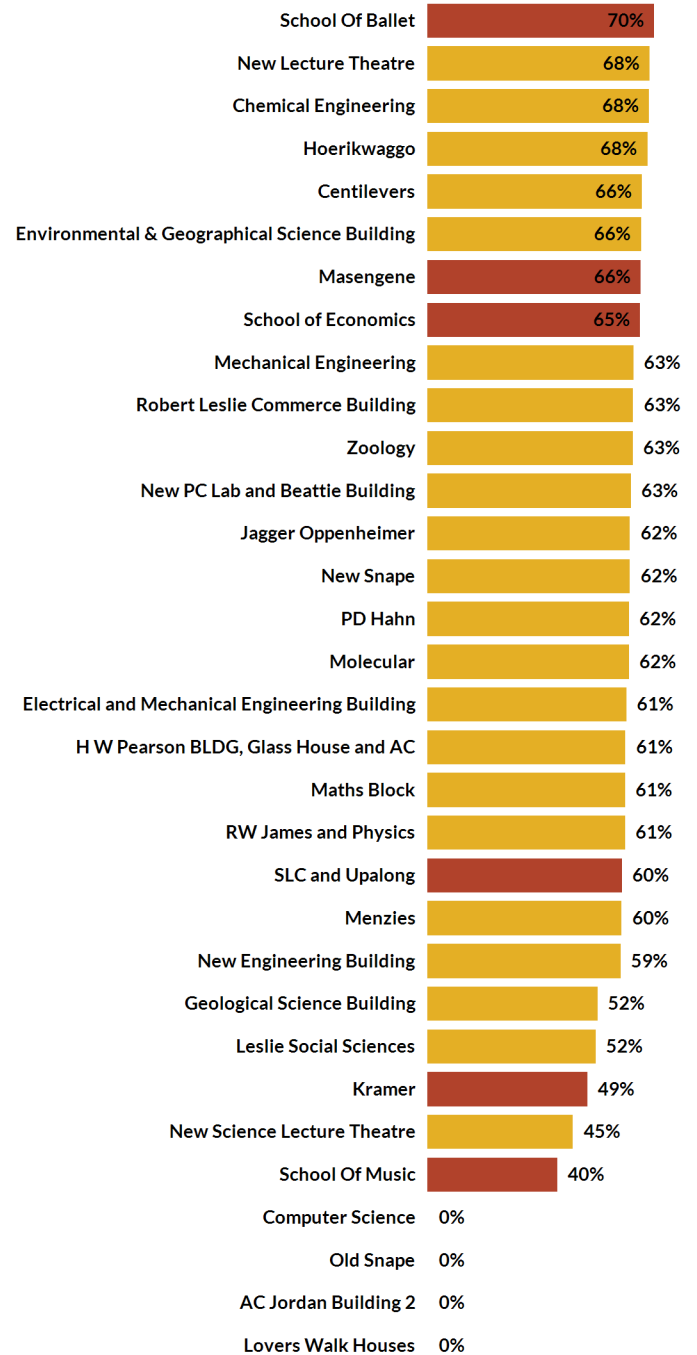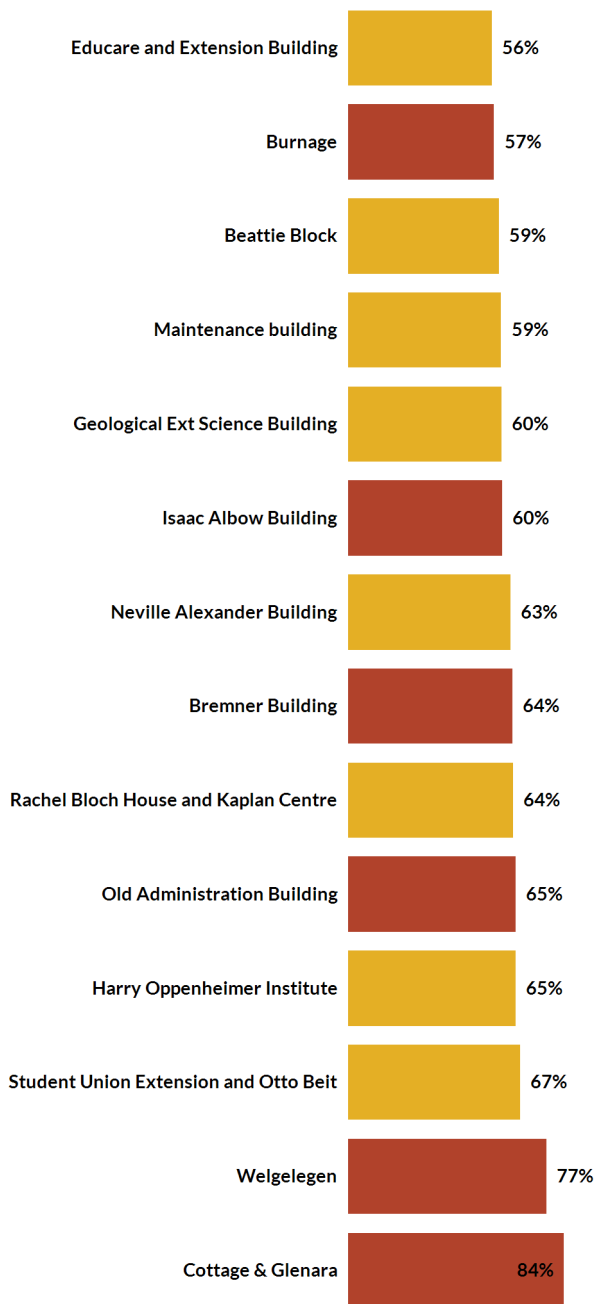
Monthly "Night" Time Energy Usage (kWh)

The figures below compares your energy usage during open hours to energy usage during closed hours. The aim is to minimise your closed time energy usage (lowest % possible). Open hours used : (Weekday: 08:00 - 17:30, Saturday : 08:00 - 13:00 , Sunday: 08:00 - 13:00)

OFFICE

Building	%
Educare and Extension Building	56%
Burnage	57%
Beattie Block	59%
Maintenance building	59%
Geological Ext Science Building	60%
Isaac Albow Building	60%
Neville Alexander Building	63%
Bremner Building	64%
Rachel Bloch House and Kaplan Centre	64%
Old Administration Building	65%
Harry Oppenheimer Institute	65%
Student Union Extension and Otto Beit	67%
Welgelegen	77%
Cottage & Glenara	84%

LECTURE VENUE

Building	%
School Of Ballet	70%
New Lecture Theatre	68%
Chemical Engineering	68%
Hoerikwaggo	68%
Centilevers	66%
Environmental & Geographical Science Building	66%
Masengene	66%
School of Economics	65%
Mechanical Engineering	63%
Robert Leslie Commerce Building	63%
Zoology	63%
New PC Lab and Beattie Building	63%
Jagger Oppenheimer	62%
New Snape	62%
PD Hahn	62%
Molecular	62%
Electrical and Mechanical Engineering Building	61%
H W Pearson BLDG, Glass House and AC	61%
Maths Block	61%
RW James and Physics	61%
SLC and Upalong	60%
Menzies	60%
New Engineering Building	59%
Geological Science Building	52%
Leslie Social Sciences	52%
Kramer	49%
New Science Lecture Theatre	45%
School Of Music	40%
Computer Science	0%
Old Snape	0%
AC Jordan Building 2	0%
Lovers Walk Houses	0%

Region Key:
Lower Campus
Upper Campus

Report Period: January 2021   TERRA FIRMA SOFTWARE
ENERGY MANAGEMENT SOLUTIONS
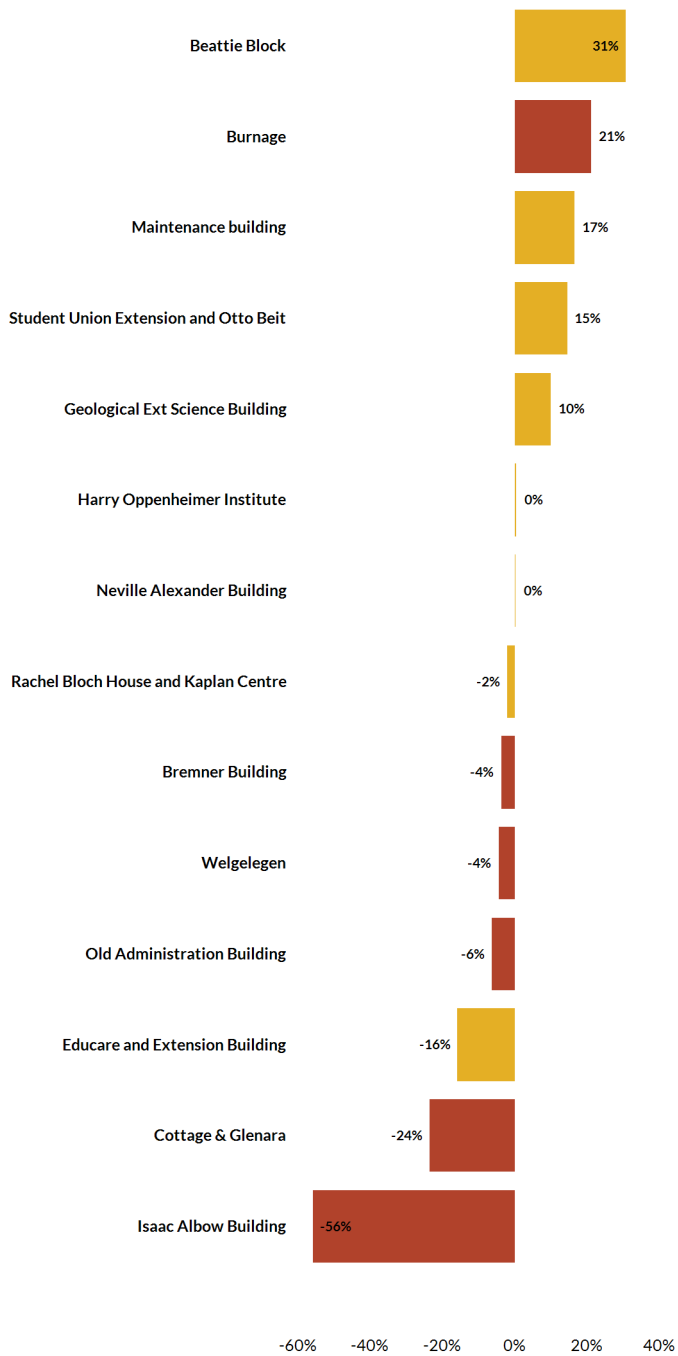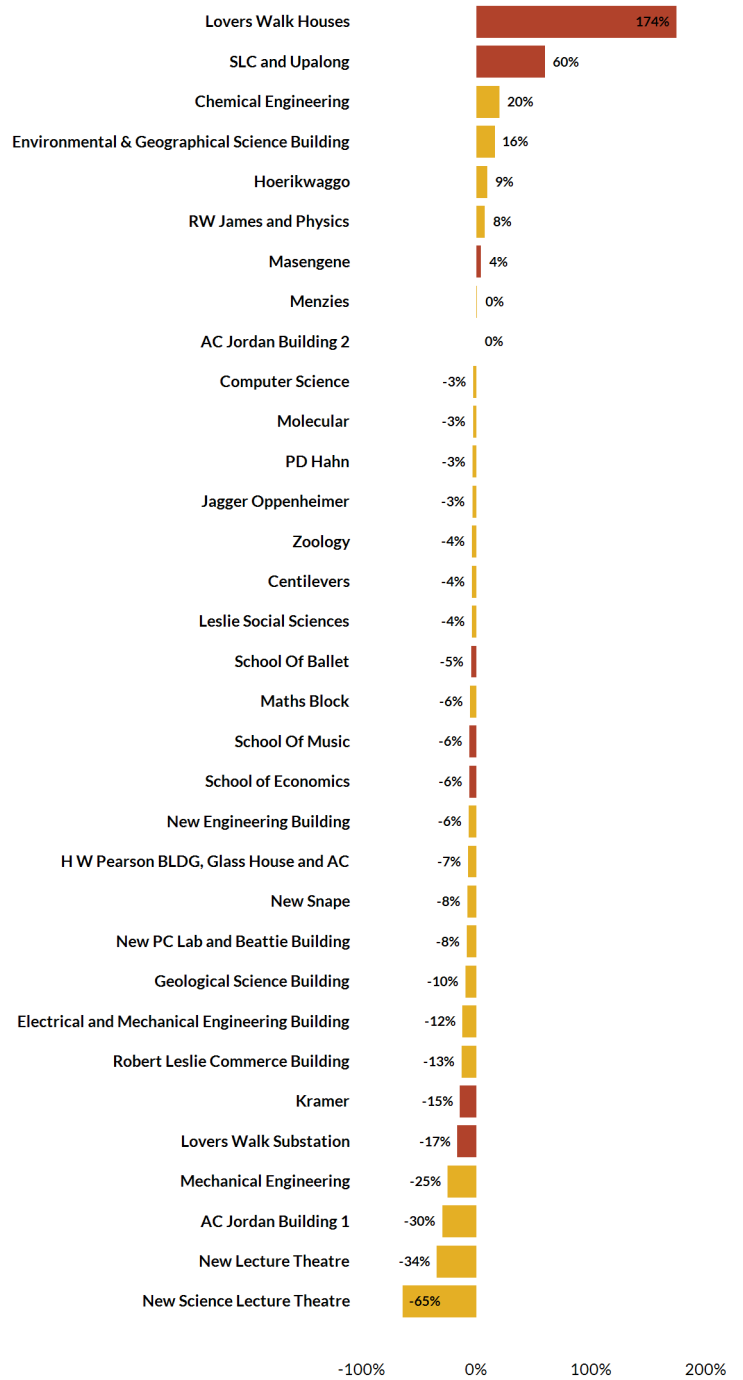
Change in Month on Month Energy Usage (Change in kWh as a %)

The figure below compares energy used last month to this month, shown as a percentage. A positive number shows an increase in energy usage and a negative number shows a decrease in energy usage form last month to this month.

OFFICE

Building	Change
Beattie Block	31%
Burnage	21%
Maintenance building	17%
Student Union Extension and Otto Beit	15%
Geological Ext Science Building	10%
Harry Oppenheimer Institute	0%
Neville Alexander Building	0%
Rachel Bloch House and Kaplan Centre	-2%
Bremner Building	-4%
Welgelegen	-4%
Old Administration Building	-6%
Educare and Extension Building	-16%
Cottage & Glenara	-24%
Isaac Albow Building	-56%

LECTURE VENUE

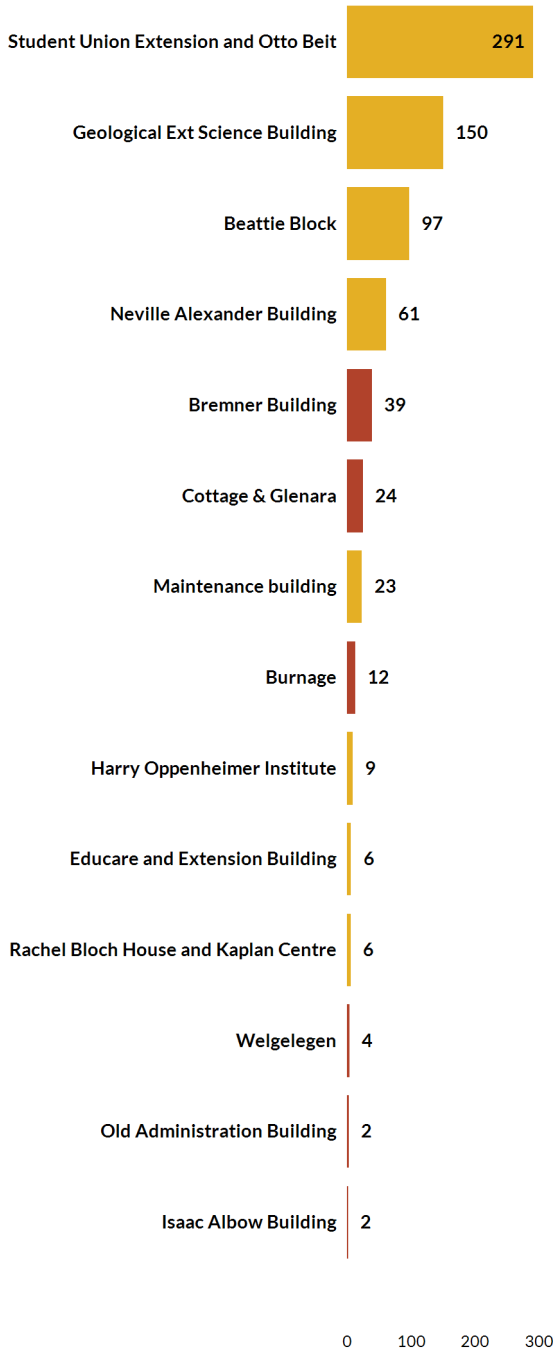| Building	Change
Lovers Walk Houses	174%
SLC and Upalong	60%
Chemical Engineering	20%
Environmental & Geographical Science Building	16%
Hoerikwaggo	9%
RW James and Physics	8%
Masengene	4%
Menzies	0%
AC Jordan Building 2	0%
Computer Science	-3%
Molecular	-3%
PD Hahn	-3%
Jagger Oppenheimer	-3%
Zoology	-4%
Centilevers	-4%
Leslie Social Sciences	-4%
School Of Ballet	-5%
Maths Block	-6%
School Of Music	-6%
School of Economics	-6%
New Engineering Building	-6%
H W Pearson BLDG, Glass House and AC	-7%
New Snape	-8%
New PC Lab and Beattie Building	-8%
Geological Science Building	-10%
Electrical and Mechanical Engineering Building	-12%
Robert Leslie Commerce Building	-13%
Kramer	-15%
Lovers Walk Substation	-17%
Mechanical Engineering	-25%
AC Jordan Building 1	-30%
New Lecture Theatre	-34%
New Science Lecture Theatre	-65%

Region Key:
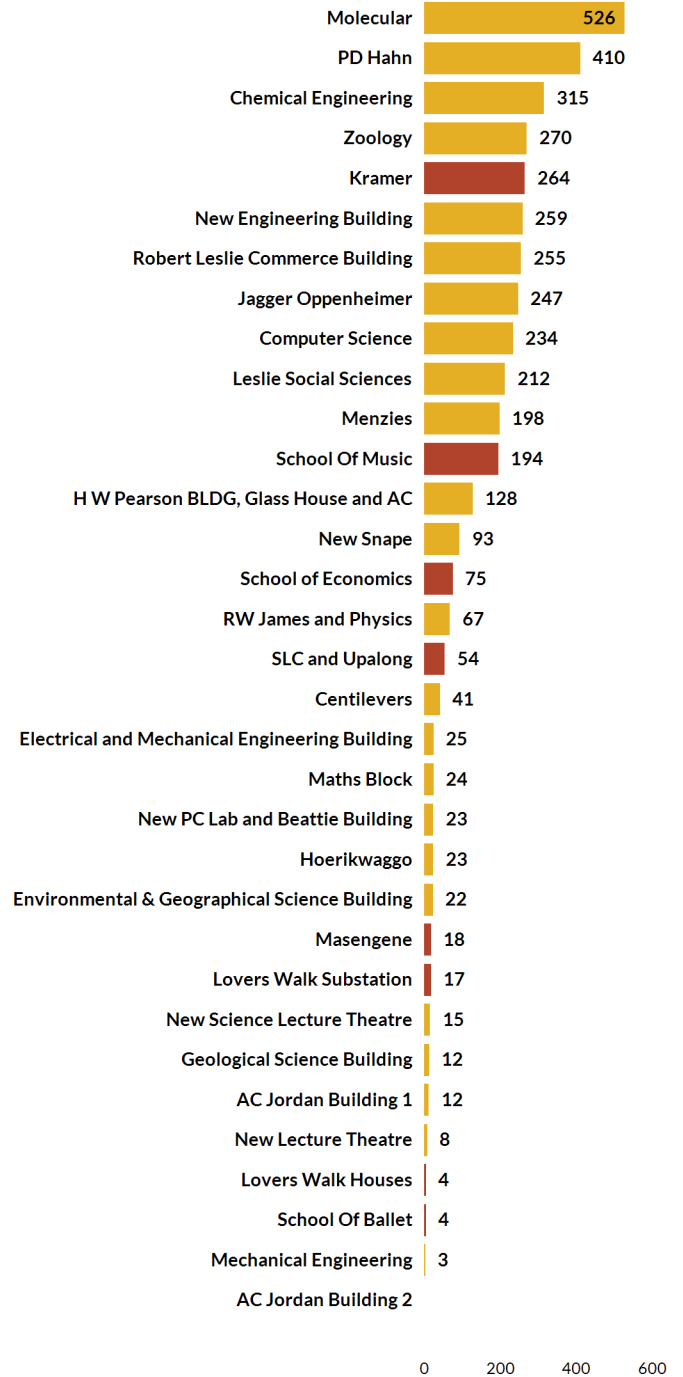- Lower Campus
- Upper Campus

Monthly Maximum Demand (kVA)

Maximum demand is the single highest peak power requirement over a billing period. Maximum demand is an important value to watch as maximum demand charges can amount up to 50% of the total electricity bill.

OFFICE

Building	kVA
Student Union Extension and Otto Beit	291
Geological Ext Science Building	150
Beattie Block	97
Neville Alexander Building	61
Bremner Building	39
Cottage & Glenara	24
Maintenance building	23
Burnage	12
Harry Oppenheimer Institute	9
Educare and Extension Building	6
Rachel Bloch House and Kaplan Centre	6
Welgelegen	4
Old Administration Building	2
Isaac Albow Building	2

LECTURE VENUE

Building	kVA
Molecular	526
PD Hahn	410
Chemical Engineering	315
Zoology	270
Kramer	264
New Engineering Building	259
Robert Leslie Commerce Building	255
Jagger Oppenheimer	247
Computer Science	234
Leslie Social Sciences	212
Menzies	198
School Of Music	194
H W Pearson BLDG, Glass House and AC	128
New Snape	93
School of Economics	75
RW James and Physics	67
SLC and Upalong	54
Centilevers	41
Electrical and Mechanical Engineering Building	25
Maths Block	24
New PC Lab and Beattie Building	23
Hoerikwaggo	23
Environmental & Geographical Science Building	22
Masengene	18
Lovers Walk Substation	17
New Science Lecture Theatre	15
Geological Science Building	12
AC Jordan Building 1	12
New Lecture Theatre	8
Lovers Walk Houses	4
School Of Ballet	4
Mechanical Engineering	3
AC Jordan Building 2	

Region Key:
Lower Campus
Upper Campus

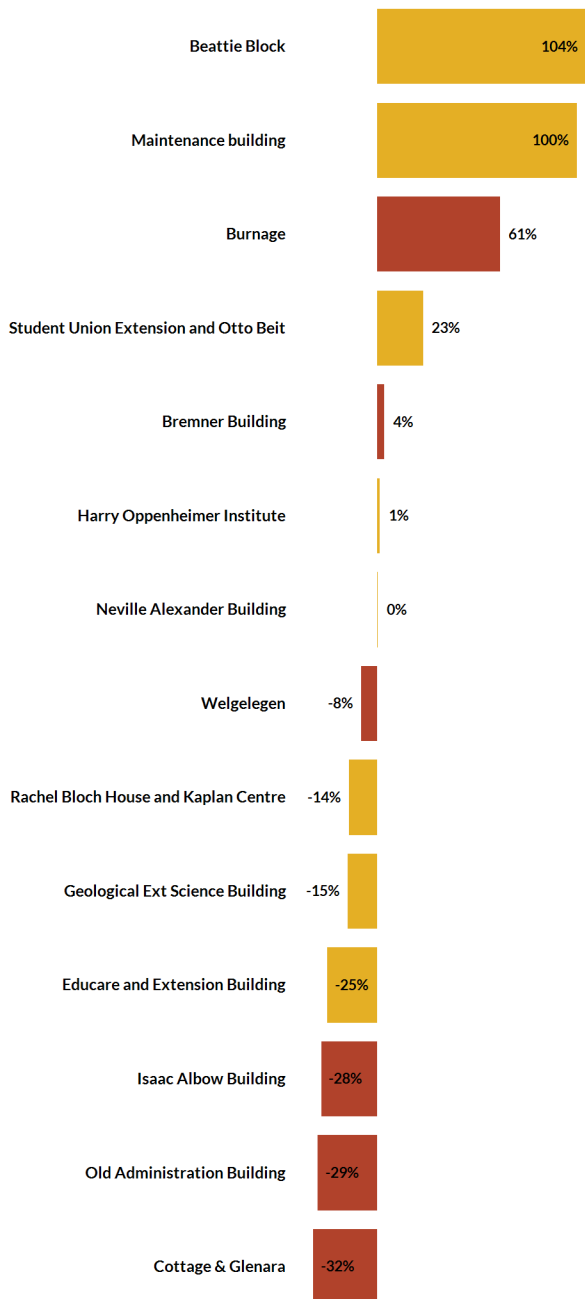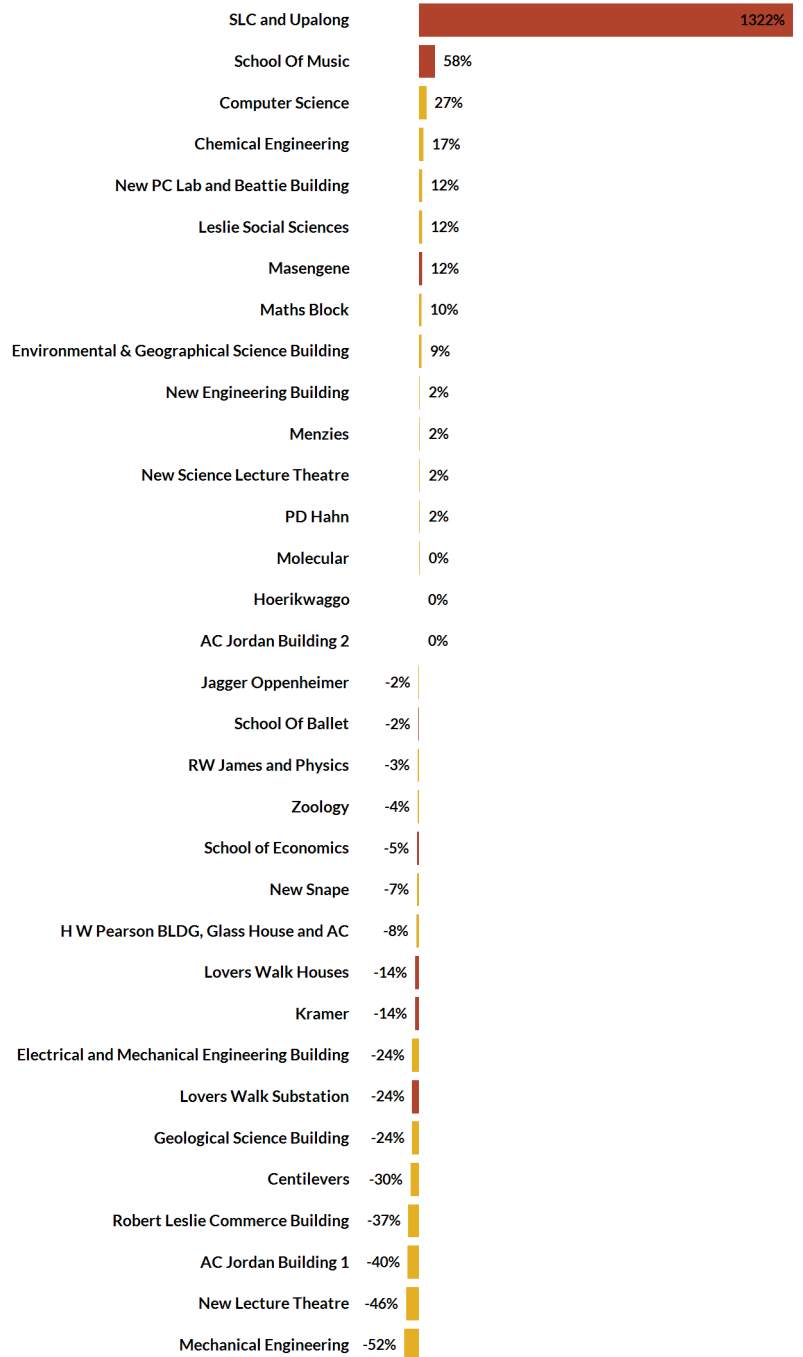Report Period: January 2021

Change in Month on Month Maximum Demand (Change in kVA as a %)

The figure below compares maximum demand value from last month to this month, shown as a percentage. A positive number shows an increase in maximum demand and a negative number shows a decrease in maximum demand.

OFFICE

Building	Change
Beattie Block	104%
Maintenance building	100%
Burnage	61%
Student Union Extension and Otto Beit	23%
Bremner Building	4%
Harry Oppenheimer Institute	1%
Neville Alexander Building	0%
Welgelegen	-8%
Rachel Bloch House and Kaplan Centre	-14%
Geological Ext Science Building	-15%
Educare and Extension Building	-25%
Isaac Albow Building	-28%
Old Administration Building	-29%
Cottage & Glenara	-32%

LECTURE VENUE

Building	Change
SLC and Upalong	1322%
School Of Music	58%
Computer Science	27%
Chemical Engineering	17%
New PC Lab and Beattie Building	12%
Leslie Social Sciences	12%
Masengene	12%
Maths Block	10%
Environmental & Geographical Science Building	9%
New Engineering Building	2%
Menzies	2%
New Science Lecture Theatre	2%
PD Hahn	2%
Molecular	0%
Hoerikwaggo	0%
AC Jordan Building 2	0%
Jagger Oppenheimer	-2%
School Of Ballet	-2%
RW James and Physics	-3%
Zoology	-4%
School of Economics	-5%
New Snape	-7%
H W Pearson BLDG, Glass House and AC	-8%
Lovers Walk Houses	-14%
Kramer	-14%
Electrical and Mechanical Engineering Building	-24%
Lovers Walk Substation	-24%
Geological Science Building	-24%
Centilevers	-30%
Robert Leslie Commerce Building	-37%
AC Jordan Building 1	-40%
New Lecture Theatre	-46%
Mechanical Engineering	-52%

Region Key:
Lower Campus
Upper Campus

Report Period: January 2021

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ENERGY MANAGEMENT SOLUTIONS

HVAC and Water Heating

kWh

Unit	kWh
MCB HVAC Plant	101 643
Chemical Engineering Chiller	79 636
Kramer AC Plant 1	35 131
Computer Science HVAC	9 048
Kramer Hot Water	3 575
Leo Marquard Heat Pumps	1 853

Cost

Unit	Cost
MCB HVAC Plant	R 140 904
Chemical Engineering Chiller	R 108 776
Kramer AC Plant 1	R 76 872
Computer Science HVAC	R 33 704
Kramer Hot Water	R 17 655
Leo Marquard Heat Pumps	R 11 966

Generator Monthly Energy Usage (kWh)

Generator	kWh
Upper Campus Maintenance Generator	7487
Molecular Biology Building Generator	1330
Wolfson Pavillion Generator	895
New Civil Engineering Generator	777
Upper Campus Data Centre Generator	753
ICTS Mowbray DC Generator	734
New Chemical Engineering Generator	643
Falmouth Generator	559
Jameson Hall Generator	518
Kramer Law School Generator	482
OBS Square Residence Generator	430
Chris Barnard BLD - Level 8 Roof Generator	378
Bremner Data Centre Generator	375
PD Hahn Building Generator	344
Maintenance Building Generator	325
Sports Centre Generator	284
Leslie Com Building Generator	257
School of Economics Generator	226
Chris Barnard BLD - Level 7 RM2 Generator	163
Hiddingh Generator	127
Beattie Building Generator	124
RW James Building Generator	123
Animal House Generator	89
ICTS Mowbray Generator	81
Chris Barnard BLD Level 7 RM1 Generator	79
Chris Barnard BLD Level 7 RM3 Generator	71
Werner Beit Cryogenics Generator	68
NLT Generator	35
Rochester House Generator	34
Engeo Building Generator	27
Anatomy Building Generator	24
PD Hahn Flammable Store Generator	17
Mill Court Generator	11
Psychology PD Building Generator	3
Werner Beit South Generator	2

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ENERGY MANAGEMENT SOLUTIONS