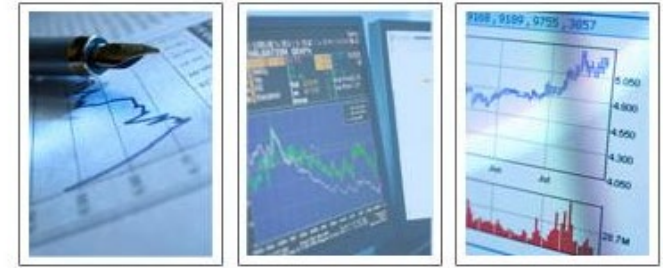


P O R T F O L I O  
E V A L U A T I O N  
L I M I T E D



Specialists in Investment Risk and Return Evaluation

Quarterly Risk and Return Analysis  
Total Fund

Worcestershire County Council Pension Fund

Period ending 31<sup>st</sup> December 2022



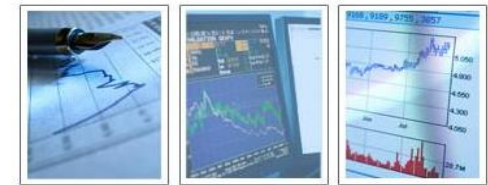
Specialists in Investment Risk and Return Evaluation



## Contents

### **Worcestershire County Council Pension Fund Total Fund**

- Portfolio Evaluation Market Commentary 01
- Worcestershire County Council Pension Fund Commentary 03
- Total Fund Overview 05
  - Attribution To Total Fund Excess Return Analysis - Quarter End 06
  - Attribution to Total Fund Excess Return Analysis - Year End 07
  - Attribution to Total Fund Excess Return Analysis - 3 Year End 08
  - Manger Performance Summary 09
  - Reconciliation Analysis 11

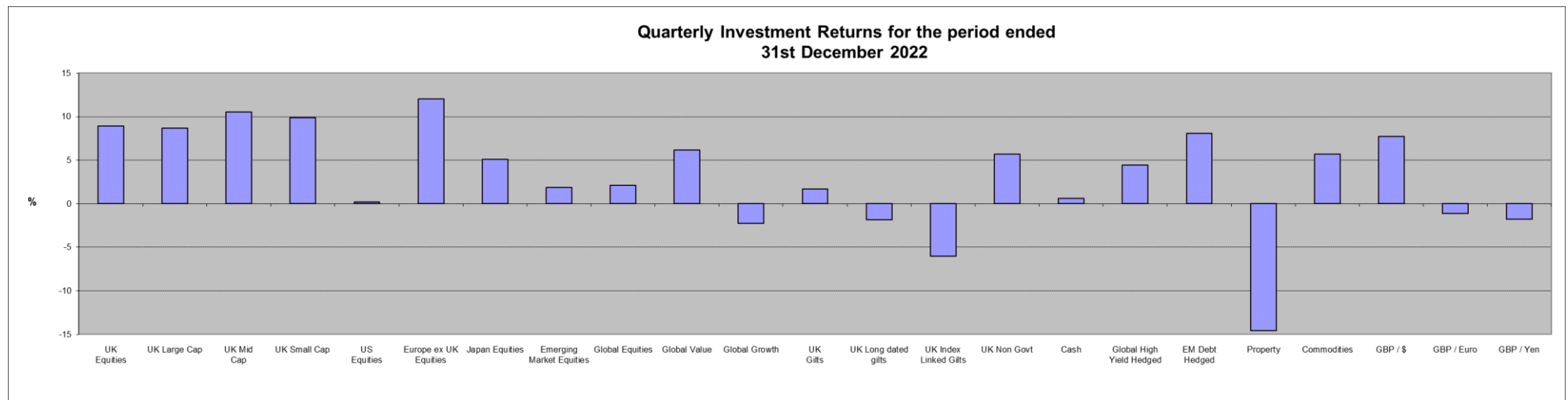


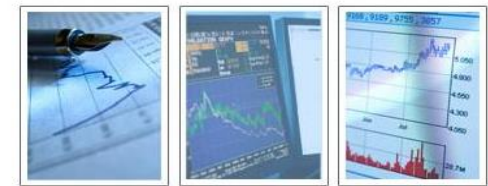
## Portfolio Evaluation Ltd Market Commentary Q4 2022 (Sterling)

Quarter four witnessed key equity markets, corporate bonds, many gilt markets, and commodities rising. Property was the key loser. Sterling also strengthened as the Truss days became a distant memory and the BoE and Sunak calmed the markets; however over the year the strong dollar / weak sterling and the weight of USD assets in the global indices has impacted GBP returns. The 2022 year has seen most markets having negative returns (except for commodities) as investors struggled with high inflation, central bank tightening, a war between Ukraine and Russia, energy supply problems, tightening labour markets, COVID and output falling in China due to (now redundant) zero-COVID policies. Within global sectors the majority have had significant negative returns except for healthcare, consumer staples, banks, energy and utilities that had significant positive returns.

Many of our institutional clients have benefitted from high returns in 'alternative' asset classes such as Private Equities, Infrastructure, Private Debt and Property but it should be noted that much of the data is lagged and although returns may soften as valuations are updated returns continue to be resilient. It should also be noted that many of our clients are continuing to fund 'alternative' asset portfolios.

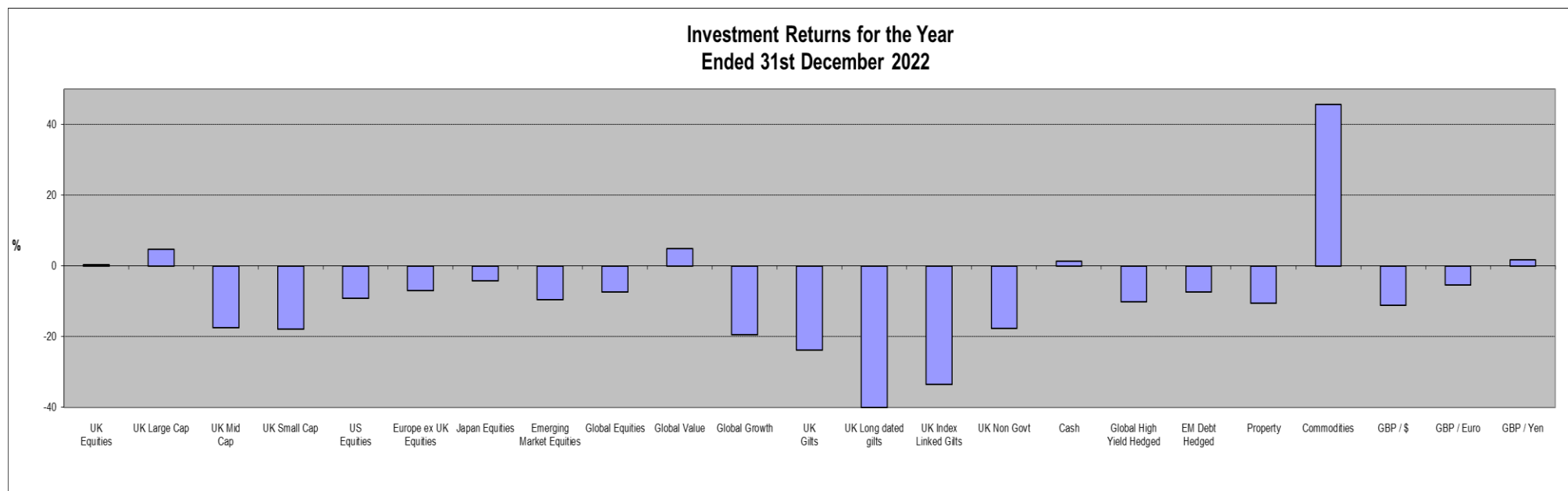
We saw some clients being impacted by increasing yields requiring LDI portfolio margin accounts to require significant funding; this in some instances is requiring selling other portfolio assets and it should be noted that the BoE had to assist this part of the market in early October.





It appears that going into 2023 many investors are apprehensive. Many investors feel that the era of low interest rates fuelling markets has ended. Although inflation rates remain high and growth will reduce many market commentators expect the U.S. and Europe to escape recession. However, they do expect interest rate rises albeit at a slower pace than in 2022. Many investors believe that both equity market valuations appear positive globally and in particular in Europe. Bonds also appear attractive. However many investors believe that the outlook for earnings revisions remain significant as does the probability of 'mis-steps' by central banks given their tussles with inflation and labour market strength. The UK market appears to be the most likely to have a recession given the outlook for lower growth especially as inflation remains stubbornly high.

An interesting year awaits!



Risk within asset classes and correlations has increased over the year. The outlook for market risk is uncertain.

**For further information** If you would like further information about the topics contained in this newsletter or would like to discuss your investment performance requirements please contact Nick Kent or Deborah Barlow (e-mail: [nick.kent@portfolioevaluation.net](mailto:nick.kent@portfolioevaluation.net)) or visit our website at [www.portfolioevaluation.net](http://www.portfolioevaluation.net). Please note that all numbers, comments and ideas contained in this document are for information purposes only and as such are not investment advice in any form. Please remember that past performance is not a guide to future performance.

## Worcestershire County Council Pension Fund - Commentary

### Period ending 31<sup>st</sup> December 2022

**QUARTERLY SUMMARY:**      **Worcestershire County Council Pension Fund**    **Return: 3.8%**      **Benchmark Return: 3.1%**      **Excess Return: 0.6%**

- This quarter saw the R&M EPO strategy overlay fund close in mid-November; the assets (including the collateral fund invested in gilts) were transferred to the LGIM passive UK Equity, North American Equity and European Equity Funds. Additionally a significant investment was made into the BSIF Forestry Fund IV and the EDIF III Fund was funded for the first time (allowing for reporting lags).
- The Fund and its benchmark have both generated positive returns, and the Fund has outperformed its benchmark by 0.6% excess. The EPO has had a negative influence on the Total Fund and benchmark return albeit relatively small; this was expected given the rise in markets in October (the last full month that the EPO was used).
- Equity returns underperformed the benchmark despite the LGPSC Global Sustainable Equity Active Targeted Fund and the Total Passive equity assets outperforming. The Nomura Far East portfolio, LGPSC Sustainable Equity Active Thematic Fund and the LGPSC EMM all underperformed. The primary areas of outperformance have been generated by Property, Corporate Debt Fund and Infrastructure asset classes. It should be noted that the negative depreciation of sterling versus the US dollar has been a positive contributor to the Fund.
- Within the primary asset classes, infrastructure assets were the highest returning generators over the quarter at 4.7, %. Property assets had a return of 1.6%. Equity assets (inc EPO) generated a return of 3.8% whilst equities ex EPO the return was marginally lower at 3.7%. Within equities, the Passive Pool was the highest return generator at 7.7% whilst the Active Pool had a return of 2.3% and the Alts Pool a return of 2.8% (approximately in line with the benchmark).
- The recently established Total Fixed Income asset class has outperformed and is underweight its strategic asset allocation (note that equities remain overweight their strategic asset allocation).
- The Fund outperformed the benchmark primarily due to Property, Infrastructure and Total Fixed Income. Equity assets were a negative influence on excess return as was the EPO strategy. Fund asset allocation was also a negative contributor to excess return.
- The latest valuation data supplied by Bridgepoint, Green Investment Bank, Gresham House, Hermes, Invesco – UK Property Fund, Stonepeak Partners, VENN and Walton Street is lagged by three months and was for periods ending June 2022 whilst the Gresham House Forestry Funds have a lag of 6 months.

**YEAR SUMMARY:      Worcestershire County Council Pension Fund      Return: -4.3%      Benchmark Return: -2.9%      Excess Return: -1.4%**

- The Fund and its benchmark have generated negative returns and the Fund has underperformed its benchmark by -1.4% excess. The underperformance has been primarily generated by equity assets, and by the performance of the Fixed Income assets which significantly underperformed. The Infrastructure and Property Pools outperformed. It should be noted that many of the Alternative asset pools are investing in new portfolios; these types of portfolios often underperform initially due to the expenses of these funds 'investing' and that it takes time for many of these vehicles to generate positive significant returns from their investments.
- With the closure of the EPO strategy the Fund, due to the assets being invested in passive equities, has become overweight passive equities due to becoming overweight the UK Index Fund.
- The most significant drag on excess return was primarily generated by the LGPSC EMM Fund, the Nomura Far East Developed portfolio and the transition portfolio in the quarter ended June 2022. The highest positive contributor to excess return were Infrastructure and Property assets.
- Infrastructure assets generated the highest return of 18.3% followed by Property with a return of 7.4%. Equity assets were the next highest return generators over the year and excluding the overlay generated a return of -8.1%. Within equities the Passive Pool was the highest return generator followed by the Alternatives Pool and finally the Active Pool (generating returns of -3.7%, -10.0% and -14.9% respectively), all of them underperformed their benchmarks. Fixed Income assets had a return of -14.5% underperforming by -6.0%.

**THREE YEAR SUMMARY:      Worcestershire County Council Pension Fund      Return: 4.5% p.a.      Benchmark Return: 4.2% p.a.      Excess Return: 0.3% p.a.**

- Over the three-year period, the Fund has generated a positive return of 4.5% p.a. and has outperformed the benchmark. It should be noted that there has been a considerable number of new mandates established in that timeline especially in the property, infrastructure and bond asset classes. Additionally, the equities have been restructured.
- All primary asset classes, except for Total Fixed Income have generated positive returns.
- The equity protection overlay program has increased the Fund return over the three-year period (by 0.3% p.a.). It should also be noted that the EPO strategy has lowered the volatility of the Fund as expected.
- The Total Risk and Active risk are consistent with a typical multi asset class fund that uses both passive and active strategies.

Client: Worcestershire County Council Pension Fund  
 Manager: Multi-manager  
 Mandate: Total Fund  
 Asset Class: Combined Assets  
 Benchmark: Worcestershire Total Fund Index  
 Inception: 31-Mar-1987  
 Mkt Val: £3.4bn

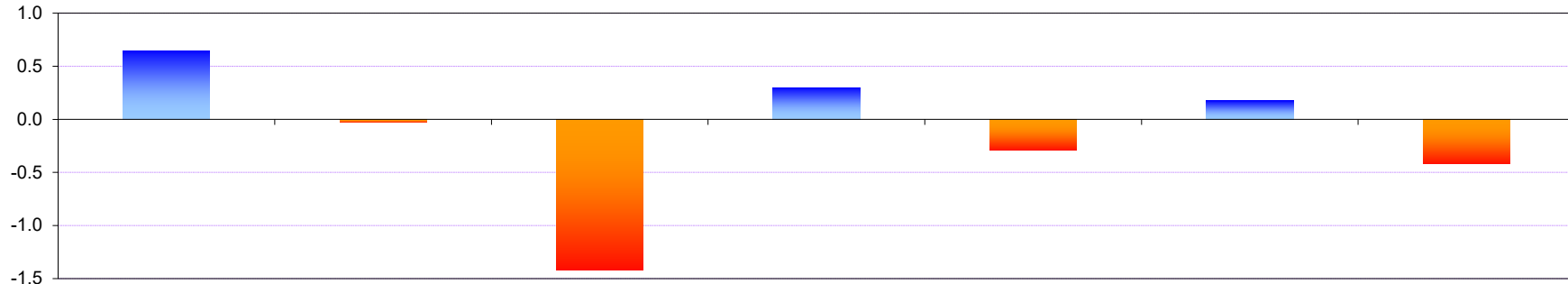
## Total Fund Overview

### Worcestershire CC Pension Fund

Report Period: Quarter Ending December 2022



#### Excess Return Analysis (%)



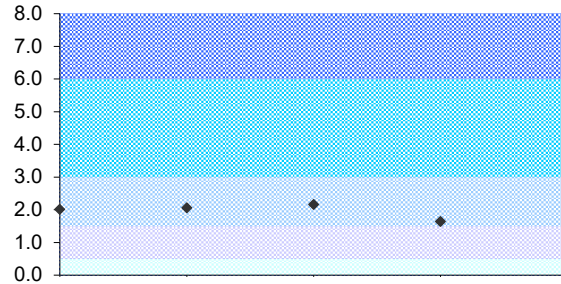
	QTR	Fin YTD	1 Yr	3 Yr	5 Yr	10Yr	Since Mar 87 (p.a.)
Excess Return	0.6	0.0	-1.4	0.3	-0.3	0.2	-0.4
Portfolio Return	3.8	-1.5	-4.3	4.5	4.5	8.3	7.8
Benchmark Return	3.1	-1.4	-2.9	4.2	4.8	8.1	8.2

All returns for periods in excess of 1 year are annualised. The portfolio return is net. □

#### Ex-Post Active Risk Analysis (%)

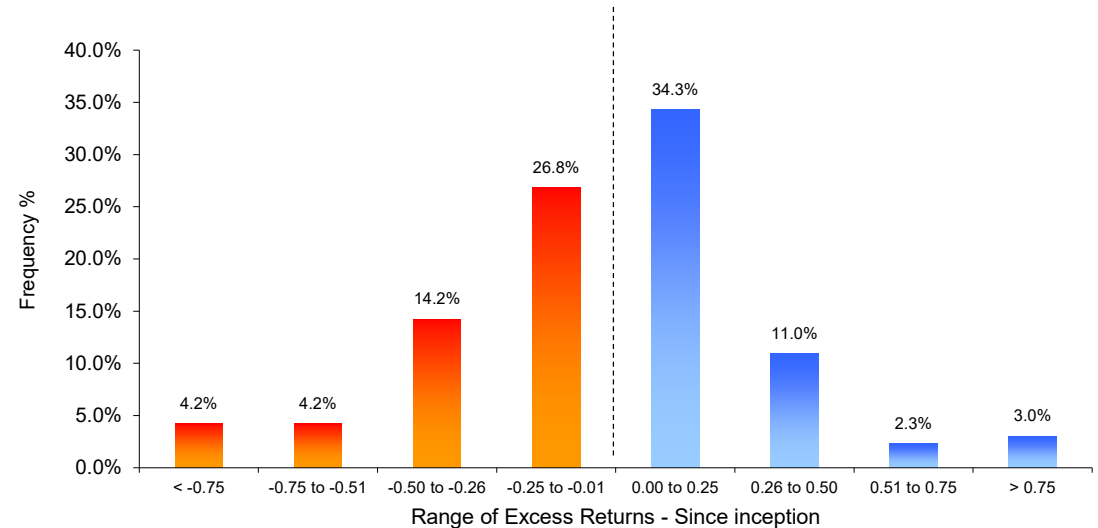
##### Expected Active Risk Ranges

- Aggressive
- Active Plus
- Active
- Core
- Indexed
- Active Risk



	1 Yr	3 Yr	5 Yr	10 Yr	Mar 87
Active Risk	2.0	2.1	2.2	1.6	1.5
Portfolio Risk	7.8	9.0	8.0	8.4	12.3
Benchmark Risk	8.6	10.2	9.3	8.9	12.2

#### Excess Return Consistency Analysis



**Ex-Post Active Risk** measures the volatility of the actual excess returns achieved by the Portfolio/Fund.

**Excess Return Consistency Analysis** measures the frequency of the Portfolio/Fund's outperformance (Blue) and underperformance (Red) versus its benchmark, calculated using monthly (or quarterly if indicated) returns since inception.

**Attribution to Total Fund Excess Return Analysis  
Worcestershire County Council Pension Fund  
for Quarter Ended 31st December 2022**

Market Value: £3.4bn

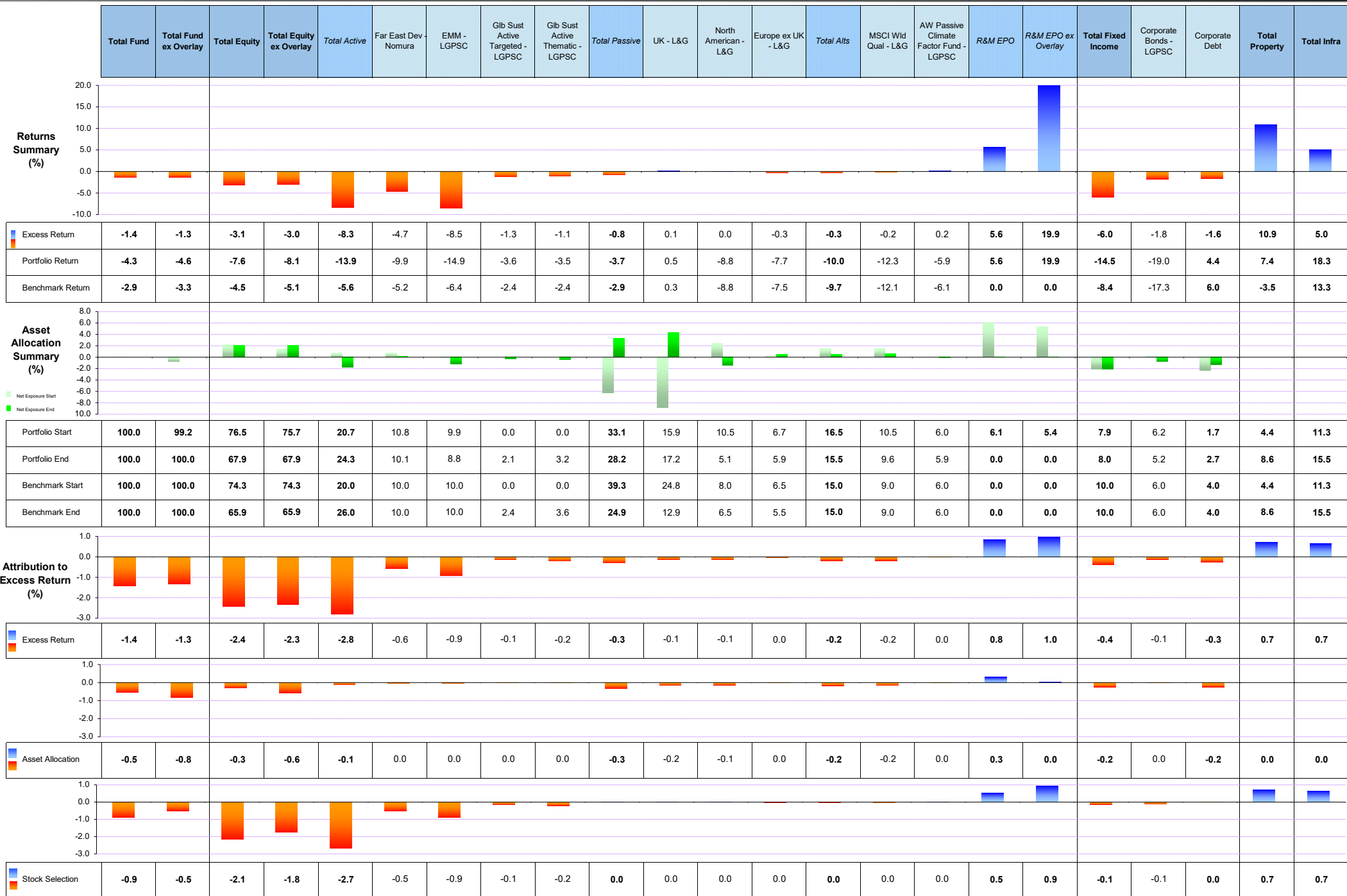


The Returns Summary details the Portfolio, Benchmark and Excess Returns. The Excess Returns are plotted, the Asset Allocation Summary details the weights held by the portfolio and benchmark in each asset class/manager. The green plots are the over/underweight exposures of the Fund (v Fund benchmark) at the beginning and end of the period. The Attribution to Excess Return, identifies how each asset class/manager has contributed to the overall excess return of the Total Fund. It is broken down into Asset Allocation (how successful the decision to over/underweight each asset class was) and then into Stock Selection (how well each manager's decisions have performed). The Asset Allocation plus the Stock Selection excess returns are all additive and equal the Total Excess Return of the Fund.



**Attribution to Total Fund Excess Return Analysis  
Worcestershire County Council Pension Fund  
for Year Ended 31st December 2022**

Market Value: £3.4bn



**Attribution to Total Fund Excess Return Analysis - Annualised  
Worcestershire County Council Pension Fund  
for 3 Year Period Ended 31st December 2022**

Market Value: £3.4bn

	Total Fund	Total Fund ex Overlay	Total Equity	Total Equity ex Overlay	Total Active	Far East Dev - Nomura	EMM - LGPSC	Glb Sust Active Targeted - LGPSC	Glb Sust Active Thematic - LGPSC	Total Passive	UK - L&G	North American - L&G	Europe ex UK - L&G	Total Alts	RAFI Fdmntl Dev (inc Korea) Red Carbon Pathway Index - L&G	MSCI Wid Min Vol - L&G	MSCI Wid Qual - L&G	AW Passive Climate Factor Fund - LGPSC	R&M EPO	R&M EPO ex Overlay	Total Fixed Income	Corporate Bonds - LGPSC	Corporate Debt	JP Morgan Corp Bond	Total Property	Total Infra		
<b>Returns Summary (%)</b>																												
Excess Return	0.3	-0.8	0.1	-1.3	-2.7	-0.9	-3.0	-1.3	-1.1	0.9	0.1	0.0	-0.2	-0.7	0.0	0.1	-0.1	0.2	2.4	4.0	-4.0	-0.1	-0.8	0.2	-2.3	1.5		
Portfolio Return	4.5	4.1	4.0	3.5	0.1	2.4	-1.1	-3.6	-3.5	6.7	2.4	10.9	5.6	4.3	10.2	5.1	9.5	-4.1	2.4	4.0	-7.3	-1.6	5.7	1.0	3.5	12.3		
Benchmark Return	4.2	5.0	3.9	4.8	2.8	3.4	1.9	-2.4	-2.4	5.8	2.3	10.8	5.8	5.0	10.2	5.0	9.6	-4.3	0.0	0.0	-3.3	-1.5	6.5	0.8	5.8	10.9		
<b>Asset Allocation Summary (%)</b>																												
Portfolio Start	100.0	100.1	79.2	79.3	25.1	13.2	11.8	0.0	0.0	31.3	13.2	11.6	6.5	15.6	5.8	4.6	5.2	0.0	7.2	7.3	0.8	0.0	0.8	5.3	5.8	9.0		
Portfolio End	100.0	100.0	67.9	67.9	24.3	10.1	8.8	2.1	3.2	28.2	17.2	5.1	5.9	15.5	0.0	0.0	9.6	5.9	0.0	0.0	8.0	5.2	2.7	0.0	8.6	15.5		
Benchmark Start	100.0	100.0	75.2	75.2	24.0	12.0	12.0	0.0	0.0	41.2	20.7	11.0	9.5	10.0	3.3	3.3	3.3	0.0	0.0	0.0	0.8	0.0	0.8	9.2	5.8	9.0		
Benchmark End	100.0	100.0	65.9	65.9	26.0	10.0	10.0	2.4	3.6	24.9	12.9	6.5	5.5	15.0	0.0	0.0	9.0	6.0	0.0	0.0	10.0	6.0	4.0	0.0	8.6	15.5		
<b>Attribution to Excess Return (%)</b>																												
Excess Return	0.3	-0.8	0.1	-1.0	-1.1	-0.2	-0.4	-0.1	-0.1	0.1	0.1	0.1	-0.1	0.1	0.0	0.0	0.1	0.0	1.1	-0.1	-0.1	0.1	-0.1	-0.1	0.0	0.2		
Asset Allocation	-0.2	-0.4	-0.2	-0.4	-0.2	-0.1	-0.1	0.0	0.0	0.1	0.1	0.1	-0.1	0.0	-0.1	0.0	0.1	0.0	-0.1	-0.3	0.0	0.1	-0.1	0.0	0.0	0.0		
Stock Selection	0.5	-0.5	0.3	-0.7	-0.9	-0.1	-0.3	-0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.2		

**Manager Return Analysis**  
**Worcestershire County Council Pension Fund**  
**for Period Ended 31st December 2022**

Market Value: £3.4bn

	Benchmark	Incep Date	Market Value (£m)	Weight	QTR			Year To Date			1 Year			3 Year			5 Year			10 Year			Since Inception		
					PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER
<b>Total Equity Fund</b>	<b>Client Specific Weighted Index</b>	<b>Mar-16</b>	<b>2,333.6</b>	<b>67.9</b>	<b>3.8</b>	<b>4.2</b>	<b>-0.5</b>	<b>-4.2</b>	<b>-2.5</b>	<b>-1.7</b>	<b>-7.6</b>	<b>-4.5</b>	<b>-3.1</b>	<b>4.0</b>	<b>3.9</b>	<b>0.1</b>	<b>4.2</b>	<b>4.6</b>	<b>-0.4</b>				<b>8.7</b>	<b>8.8</b>	<b>0.0</b>
<b>Total Equity Fund ex Overlay</b>	<b>Client Specific Weighted Index</b>	<b>Mar-16</b>	<b>2,333.6</b>	<b>67.9</b>	<b>3.7</b>	<b>4.6</b>	<b>-0.9</b>	<b>-4.4</b>	<b>-2.8</b>	<b>-1.7</b>	<b>-8.1</b>	<b>-5.1</b>	<b>-3.0</b>	<b>3.5</b>	<b>4.8</b>	<b>-1.3</b>	<b>4.0</b>	<b>5.2</b>	<b>-1.2</b>				<b>8.5</b>	<b>9.2</b>	<b>-0.7</b>
<i>Total Active Equity Fund</i>	Client Specific Weighted Index	Mar-16	832.9	24.3	2.3	2.6	-0.3	-7.7	-3.1	-4.7	-13.9	-5.6	-8.3	0.1	2.8	-2.7	0.9	2.9	-2.0				7.6	8.4	-0.8
Nomura Far East Developed Fund	Worcs Nomura FT AW A P & FT AW J	Feb-03	347.3	10.1	3.3	4.5	-1.2	-5.8	-2.5	-3.3	-9.9	-5.2	-4.7	2.4	3.4	-0.9	2.4	3.0	-0.6	8.1	7.7	0.5	9.2	9.2	0.0
Nomura Far East Developed Fund - 01.08.21	Worcs Nomura FT AW A P & FT AW J	Aug-21	347.3	N/A	3.3	4.5	-1.2	-5.8	-2.5	-3.3	-9.9	-5.2	-4.7										-5.0	-2.2	-2.8
LGPS Emerging Markets Fund	FTSE All World Emerging Market Index	Jul-19	302.6	8.8	0.5	0.7	-0.2	-6.2	-4.1	-2.1	-14.9	-6.4	-8.5	-1.1	1.9	-3.0							-1.0	1.8	-2.9
LGPS Global Sustainable Equity Active Targeted Fund	FTSE All World Index	May-22	72.0	2.1	6.2	2.1	4.1																-3.6	-2.4	-1.3
LGPS Global Sustainable Equity Active Thematic Fund	FTSE All World Index	May-22	111.0	3.2	1.5	2.1	-0.6																-3.5	-2.4	-1.1
<i>Total Passive Equity Fund</i>	Client Specific Weighted Index	Mar-16	968.8	28.2	7.7	7.2	0.4	-1.9	-1.6	-0.2	-3.7	-2.9	-0.8	6.7	5.8	0.9	6.8	5.9	0.8				10.0	9.3	0.7
L&G UK Equity Fund	FTSE All Share Index	Dec-15	590.1	17.2	8.9	8.9	0.0	-0.1	-0.2	0.1	0.5	0.3	0.1	2.4	2.3	0.1	3.0	2.9	0.1				6.9	6.7	0.2
L&G North American Equity Fund	FTSE All World North American Index	Dec-15	174.7	5.1	-0.5	-0.5	0.0	-6.8	-6.9	0.0	-8.8	-8.8	0.0	10.9	10.8	0.0	11.7	11.6	0.1				14.8	14.8	0.0
L&G Europe Ex UK Equity Fund	FTSE Developed Europe Ex. UK Index	Dec-15	204.0	5.9	11.7	11.7	0.0	-0.6	-0.4	-0.2	-7.7	-7.5	-0.3	5.6	5.8	-0.2	5.2	5.3	-0.2				9.1	9.4	-0.2
<i>Total Alternatives Fund</i>	20% RAFI/40% MSCI WL Min/40% MSCI WL Qual	Mar-16	531.9	15.5	2.8	2.9	0.0	-5.2	-4.9	-0.3	-10.0	-9.7	-0.3	4.3	5.0	-0.7	6.5	7.1	-0.6				9.8	10.3	-0.5
L&G MSCI World Quality Fund	MSCI World Quality Total Return Net Index	Dec-15	329.2	9.6	2.3	2.3	0.0	-7.0	-6.7	-0.3	-12.3	-12.1	-0.2	9.5	9.6	-0.1	11.7	11.8	-0.1				14.4	14.5	-0.1
LGPS All World Passive Climate Factor Fund	FTSE AW Climate Bal Com Factor Net	Nov-21	202.7	5.9	3.7	3.7	0.0	-2.1	-2.2	0.1	-5.9	-6.1	0.2										-4.1	-4.3	0.2
River & Mercantile Equity Protection Fund		Jan-18	0.0	0.0	1.2	0.0	1.2	3.9	0.0	3.9	5.6	0.0	5.6	2.4	0.0	2.4	1.6	0.0	1.6				1.6	0.0	1.6
River & Mercantile Equity Protection Fund ex Overlay		Jan-18	0.0	0.0	0.4	0.0	0.4	20.0	0.0	20.0	19.9	0.0	19.9	4.0	0.0	4.0	1.0	0.0	1.0				1.0	0.0	1.0
<b>Total Fixed Income Fund</b>	<b>60% LGPSC Corp Index &amp; 40% Absolute Return +6%</b>	<b>Apr-21</b>	<b>273.4</b>	<b>8.0</b>	<b>4.1</b>	<b>3.6</b>	<b>0.5</b>	<b>-8.5</b>	<b>-5.1</b>	<b>-3.4</b>	<b>-14.5</b>	<b>-8.4</b>	<b>-6.0</b>										<b>-7.3</b>	<b>-3.3</b>	<b>-4.0</b>
<i>Total Corporate Bond Fund</i>	LGPS Corporate Bond Index	Mar-20	179.7	5.2	4.9	5.1	-0.2	-12.9	-11.3	-1.6	-19.0	-17.3	-1.8										-1.6	-1.5	-0.1
LGPS Corporate Bond Fund	LGPS Corporate Bond Index	Mar-20	179.7	5.2	4.9	5.1	-0.2	-12.9	-11.3	-1.6	-19.0	-17.3	-1.7										-1.6	-1.5	-0.1
<i>Total Corporate Debt Fund</i>	Absolute Return +6%	May-18	93.7	2.7	2.7	1.5	1.2	9.5	4.5	5.0	4.4	6.0	-1.6	5.8	6.0	-0.2							9.4	6.1	3.4
Bridgepoint Direct Lending II GBP	Absolute Return + 6.5%	May-18	57.9	1.7	2.4	1.6	0.8	9.2	4.8	4.4	4.1	6.5	-2.4	5.7	6.5	-0.8							9.4	6.6	2.8
Bridgepoint Direct Lending II EURO	Absolute Return + 6.5%	May-18	65.2	N/A	1.3	1.6	-0.3	3.3	4.8	-1.5	0.8	6.5	-5.7	5.5	6.5	-1.0							8.8	6.6	2.2
Bridgepoint Direct Lending III GBP	Absolute Return +6%	Jan-22	35.8	1.0	3.2	1.5	1.7	12.3	4.5	7.8													12.3	4.5	7.8
Bridgepoint Direct Lending III EURO	Absolute Return + 6.5%	Jan-22	40.3	N/A	2.0	1.5	0.6	6.4	4.5	1.9													6.4	4.5	1.9
<b>Total Property Fund</b>	<b>60% MSCI UK &amp; 40% Abs Ret +7.5%</b>	<b>Mar-16</b>	<b>294.2</b>	<b>8.6</b>	<b>1.6</b>	<b>-8.2</b>	<b>9.9</b>	<b>6.1</b>	<b>-7.2</b>	<b>13.3</b>	<b>7.4</b>	<b>-3.5</b>	<b>10.9</b>	<b>3.5</b>	<b>5.8</b>	<b>-2.3</b>	<b>3.9</b>	<b>6.3</b>	<b>-2.5</b>				<b>5.7</b>	<b>6.5</b>	<b>-0.8</b>
<i>Total UK Property Fund</i>	Absolute Return +9%	Jul-18	54.5	1.6	3.9	2.2	1.7	14.0	6.7	7.3	14.7	9.0	5.7	7.9	9.0	-1.1							7.5	9.0	-1.5
Invesco UK Property Fund	Absolute Return +9%	Oct-18	47.7	1.4	4.8	2.2	2.7	17.4	6.7	10.8	18.6	9.0	9.6	7.3	9.0	-1.7							4.5	9.0	-4.5
Venn UK Property Fund	Absolute Return +9%	Jul-15	6.8	0.2	0.0	2.2	-2.2	1.5	6.7	-5.2	0.9	9.0	-8.1	5.1	9.0	-3.9	6.8	9.0	-2.2				9.5	9.1	0.4
Walton Street US Property Fund - GBP	Absolute Return +6.5%	Feb-16	1.5	0.0	9.7	1.6	8.1	31.7	4.8	26.9	32.3	6.5	25.8	6.2	6.5	-0.3	8.4	6.5	1.9				12.3	6.3	5.9
Walton Street US Property Fund - USD	Absolute Return +6.5%	Feb-16	1.7	N/A	0.9	1.6	-0.7	9.0	4.8	4.1	10.0	6.5	3.5	2.9	6.5	-3.6	4.6	6.5	-1.9				7.6	6.3	1.2
Walton Street US Property Fund II - GBP	Absolute Return +7%	Jun-19	9.9	0.3	11.1	1.7	9.4	29.5	5.2	24.3	29.9	7.0	22.9	10.9	7.0	3.9							11.6	7.0	4.6
Walton Street US Property Fund II - USD	Absolute Return +7%	Jun-19	12.2	N/A	2.3	1.7	0.6	7.4	5.2	2.2	8.3	7.0	1.3	7.5	7.0	0.5							7.0	7.0	0.0
Invesco European Property Fund - GBP	Absolute Return +6.5%	Feb-16	68.4	2.0	2.0	1.6	0.4	4.0	4.8	-0.9	9.4	6.5	2.9	3.3	6.5	-3.2	2.3	6.5	-4.2				5.0	6.4	-1.4
Invesco European Property Fund - EURO	Absolute Return +6.5%	Feb-16	77.0	N/A	0.8	1.6	-0.7	2.0	4.8	-2.8	6.6	6.5	0.1	2.7	6.5	-3.8	3.1	6.5	-3.4				3.8	6.4	-2.6
Venn Property Debt Fund II - GBP	Absolute Return +6%	Aug-20	12.9	0.4	1.1	1.5	-0.4	5.3	4.5	0.8	5.5	6.0	-0.5												
Venn Property Debt Fund II - EURO	Absolute Return +6%	Aug-20	15.0	N/A	1.1	1.5	-0.4	3.4	4.5	-1.1	6.0	6.0	0.0												
Gresham House Forestry Growth & Sustainability Fund	Absolute Return +6%	Dec-21	43.0	0.4	0.0	1.5	-1.5	-0.6	4.5	-5.0	-5.8	5.0	-10.8										-5.5	4.7	-10.2
Gresham House Forestry Fund VI	Absolute Return +5.5%	Oct-22	84.7	1.3	-0.4	1.3	-1.7																-0.4	1.3	-1.7
AEW Property Fund	UK RPI +4%	Oct-17	19.3	0.6	-7.4	4.6	-11.9	-3.2	14.3	-17.5	0.2	17.4	-17.2	1.6	11.3	-9.7	3.7	9.3	-5.6				3.5	9.3	-5.8
<b>Total Infrastructure Fund</b>	<b>70% UK CPI +5.5% &amp; 30% Abs Return +10%</b>	<b>Mar-16</b>	<b>533.3</b>	<b>15.5</b>	<b>4.7</b>	<b>3.1</b>	<b>1.6</b>	<b>14.9</b>	<b>10.6</b>	<b>4.3</b>	<b>18.3</b>	<b>13.3</b>	<b>5.0</b>	<b>12.3</b>	<b>10.9</b>	<b>1.5</b>	<b>10.0</b>	<b>9.9</b>	<b>0.0</b>				<b>9.2</b>	<b>9.4</b>	<b>-0.2</b>
Green UK Infrastructure Fund	Absolute Return +7.6%	Apr-15	48.2	1.4	2.3	1.8	0.5	12.8	5.6	7.2	21.3	7.6	13.7	11.1	7.6	3.5							7.8	7.6	0.2
Gresham House BSIF Housing and Infrastructure	Absolute Return +8%	May-20	49.8	1.4	3.7	1.9	1.7	11.4	5.9	5.5	31.5	8.0	23.5										11.1	8.0	3.1
Gresham House BSIF II Infrastructure Fund	Absolute Return +9%	Jan-22	21.8	0.7	1.5	2.2	-0.7	-9.4	4.4	-13.8	-9.4	4.4	-13.8										-9.4	4.4	-13.8
Hermes UK Infrastructure Core Fund	Absolute Return +8.4%	May-15	49.4	1.4	2.5	2.0	0.4	-0.1	6.2	-6.3	6.0	8.4	-2.4	2.8	8.4	-5.6	3.2	8.4	-5.1				4.9	8.4	-3.4
Hermes UK Infrastructure Fund II	Absolute Return +8.5%	Jun-18	50.6	1.5	-0.4	2.1	-2.5	5.4	6.3	-1.0	9.5	8.5	1.0	2.0	8.5	-6.5							0.1	8.6	-8.5

Stonepeak Infrastructure Core Fund III - GBP	Absolute Return +12%	Jan-18	144.7	4.2	8.5	2.9	5.7	29.0	8.9	20.2	20.5	12.0	8.5	20.9	12.0	8.9	17.4	12.0	5.4	17.4	12.0	5.4			
Stonepeak Infrastructure Core Fund III - USD	Absolute Return +12%	Jan-18	161.5	N/A	0.5	2.9	-2.3	7.2	8.9	-1.7	0.6	12.0	-11.4	17.4	12.0	5.4	13.6	12.0	1.6	13.6	12.0	1.6			
Stonepeak Infrastructure Core Fund IV - GBP	Absolute Return +12%	Jan-22	34.1	1.0	10.1	2.9	7.2	23.2	8.9	14.4	23.2	8.9	14.4							23.2	8.9	14.4			
Stonepeak Infrastructure Core Fund IV - USD	Absolute Return +12%	Jan-22	38.1	N/A	-1.1	2.9	-4.0	-0.8	8.9	-9.6	-0.8	8.9	-9.6							-0.8	8.9	-9.6			
First Sentier EDIF II GBP	Absolute Return +12%	Jun-18	127.0	3.7	3.6	2.2	1.4	12.0	6.7	5.3	18.1	9.0	9.1	15.0	9.0	6.0				11.0	9.1	1.9			
First Sentier EDIF II EURO	Absolute Return +9%	Jun-18	143.1	N/A	2.9	2.2	0.7	7.2	6.7	0.5	12.2	9.0	3.2	13.2	9.0	4.2				10.5	9.1	1.5			
First Sentier EDIF III GBP	Absolute Return +8%	Nov-22	7.6	0.2																5.9	1.3	4.6			
First Sentier EDIF III EURO	Absolute Return +8%	Nov-22	8.6	N/A																4.5	1.3	3.2			
<b>Worcestershire CC Total Fund ex Overlay</b>		<b>Mar-87</b>	<b>3,434.5</b>	<b>100.0</b>	<b>3.7</b>	<b>3.4</b>	<b>0.4</b>	<b>-1.7</b>	<b>-1.7</b>	<b>0.0</b>	<b>-4.6</b>	<b>-3.3</b>	<b>-1.3</b>	<b>4.1</b>	<b>5.0</b>	<b>-0.8</b>	<b>4.3</b>	<b>5.2</b>	<b>-1.0</b>	<b>8.2</b>	<b>8.3</b>	<b>-0.2</b>	<b>7.8</b>	<b>8.3</b>	<b>-0.5</b>
<b>Worcestershire CC Total Fund</b>		<b>Mar-87</b>	<b>3,434.5</b>	<b>100.0</b>	<b>3.8</b>	<b>3.1</b>	<b>0.6</b>	<b>-1.5</b>	<b>-1.4</b>	<b>0.0</b>	<b>-4.3</b>	<b>-2.9</b>	<b>-1.4</b>	<b>4.5</b>	<b>4.2</b>	<b>0.3</b>	<b>4.5</b>	<b>4.8</b>	<b>-0.3</b>	<b>8.3</b>	<b>8.1</b>	<b>0.2</b>	<b>7.8</b>	<b>8.2</b>	<b>-0.4</b>

PF = Portfolio Return BM = Benchmark Return ER = Excess Return

<b>Total Fund Benchmark</b>	<b>CLIENT SPECIFIC BENCHMARK:</b>	<b>Notes:</b>
	<p>17% FTSE All Share - % Dependant upon actual drawdowns of Infra &amp; Prop</p> <p>5.5% FTSE Developed Europe Ex UK</p> <p>10% FTSE All World Emerging Markets</p> <p>15% 60% MSCI World Quality Total Return NET &amp; 40% LGPSC All World Climate Index</p> <p>6.5% FTSE All World North America</p> <p>6% FTSE All World</p> <p>10% 5.5% FTSE All World Asia Pacific ex Japan &amp; 4.5% FTSE All World Japan</p> <p>6% Corp Bonds: LGPS Central Specific Index</p> <p>4% Corporate Private Debt @ Absolute Return +10%</p> <p>Infrastructure: 70% UK CPI +5.5%, 30% Absolute Return 10%</p> <p>Property: 60% MSCI UK Monthly Property Index, 40% Absolute Return +7.5%</p>	<p><b>Q4 2022:</b> Disinvested from River &amp; Mercantile Equity Protection Fund from 10th November 2022. Invested into First Sentier EDIF III from 15th November 2022.</p> <p><b>Q2 2022:</b> Investment into LGPSC Global Sustainable Equity Active Targeted Fund and LGPSC Global Sustainable Equity Active Thematic Fund from 04.05.2022. Total Fund Benchmark updated. The attribution for Total Active/Total Equity/Total Fund will not add up due to the transition.</p> <p><b>Q4 2021:</b> Total Fund Benchmark updated and backdated from 01.04.2021. Total Fixed Income Fund created from 01.04.21. New investments were made on 24.11.2021 into LGPSC All World Passive Climate Factor Fund, and Stonepeak Fund IV Infrastructure Core Fund (data is 'lagged'). A new investment was also made with Gresham House Forestry Growth &amp; Sustainability Fund from 10.12.2021 (data is produced annually in February). Full disinvestments were made from L&amp;G RAFI Fundamental Developed Reduced Carbon Pathway Index Fund on 22.10.2021 and from L&amp;G MSCI World Minimum Volatility Fund on 24.11.2021.</p> <p>Historic data up to and including 31.03.2016 has been provided by the WM Co and L&amp;G.</p>

Total Fund Reconciliation Analysis  
Worcestershire County Council Pension Fund  
for Quarter Ended 31st December 2022

Market Value: £3.4bn

	30th September 2022		Net Investment (£000s)	Total Income (£000s)	Total Gain/Loss (£000s)	31st December 2022	
	Market Val (£000s)	Exposure (%)				Market Val (£000s)	Exposure (%)
<b>Total Equity Fund</b>	<b>2,274,821</b>	<b>69.8</b>	<b>-35,393</b>	<b>33,140</b>	<b>94,189</b>	<b>2,333,617</b>	<b>67.9</b>
<b>Total Equity Fund ex Overlay</b>	<b>2,274,795</b>	<b>69.8</b>	<b>-33,944</b>	<b>0</b>	<b>92,766</b>	<b>2,333,617</b>	<b>67.9</b>
<i>Total Active Equity Fund</i>	814,033	25.0	0	0	18,894	832,927	24.3
Nomura Far East Developed Equity Fund	335,910	10.3	0	0	11,418	347,328	10.1
LGPSC Emerging Markets Fund	67,823	2.1	0	0	4,211	72,034	2.1
LGPSC Global Sustainable Equity Active Targeted Fund	109,274	3.4	0	0	1,679	110,953	3.2
LGPSC Global Sustainable Equity Active Thematic Fund	301,026	9.2	0	0	1,587	302,613	8.8
<i>Total Passive Equity Fund</i>	713,993	21.9	196,686	0	58,086	968,765	28.2
L&G UK Equity Fund	429,450	13.2	118,670	0	41,938	590,057	17.2
L&G North American Equity Fund	138,953	4.3	37,388	0	-1,681	174,659	5.1
L&G Europe Ex UK Equity Fund	145,590	4.5	40,629	0	17,830	204,049	5.9
<i>Total Alternatives Fund</i>	517,195	15.9	0	0	14,693	531,888	15.5
L&G MSCI World Quality Fund	321,755	9.9	0	0	7,434	329,189	9.6
LGPSC All World Passive Climate Factor Fund	195,440	6.0	0	0	7,259	202,699	5.9
<i>River &amp; Mercantile Equity Protection Fund</i>	229,600	7.0	-232,080	33	2,516	36	0.0
<i>River &amp; Mercantile Equity Protection Fund ex Overlay</i>	229,574	7.0	-230,630	0	1,092	36	0.0
<b>Total Fixed Income Fund</b>	<b>262,518</b>	<b>8.1</b>	<b>0</b>	<b>0</b>	<b>10,837</b>	<b>273,355</b>	<b>8.0</b>
<i>Total Corporate Bond Fund</i>	171,300	5.3	0	0	8,381	179,681	5.2
LGPSC Corporate Bond Fund	171,300	5.3	0	0	8,381	179,681	5.2
<i>Total Corporate Debt Fund</i>	91,218	2.8	0	0	2,456	93,674	2.7
Bridgepoint Direct Lending II	56,524	1.7	0	0	1,363	57,887	1.7
Bridgepoint Direct Lending III	34,694	1.1	0	0	1,093	35,787	1.0
<b>Total Property Fund</b>	<b>217,283</b>	<b>6.7</b>	<b>74,254</b>	<b>688</b>	<b>2,619</b>	<b>294,155</b>	<b>8.6</b>
<i>Total UK Property Fund</i>	57,332	1.8	0	0	-2,826	54,506	1.6
Invesco UK Property Fund	45,552	1.4	0	79	2,130	47,682	1.4
Venn UK Property Fund	11,779	0.4	-4,921	34	-34	6,824	0.2
Walton US Property Fund	1,409	0.0	0	0	131	1,540	0.0
Walton US Property Fund II	9,094	0.3	-755	0	1,554	9,893	0.3
Invesco European Property Fund	67,613	2.1	0	575	744	68,357	2.0
Venn Property Debt Fund II	17,765	0.5	-5,071	0	193	12,887	0.4
Gresham House Forestry Growth & Sustainability Fund	42,969	1.3	0	0	0	42,969	1.3
Gresham House Forestry Fund VI	0	0.0	0	0	0	0	0.0
AEW Property Fund	21,100	0.6	0	223	-1,769	19,332	0.6
<b>Total Infrastructure Fund</b>	<b>502,727</b>	<b>15.4</b>	<b>8,467</b>	<b>1,152</b>	<b>22,140</b>	<b>533,334</b>	<b>15.5</b>
Green UK Infrastructure Fund	48,027	1.5	-945	0	1,105	48,187	1.4
Gresham House BSIF Housing and Infrastructure	46,906	1.4	2,112	912	800	49,818	1.5
Gresham House BSIF II Infrastructure Fund	21,754	0.7	0	241	80	21,834	0.6
Hermes UK Infrastructure Core Fund	49,644	1.5	-1,411	0	1,213	49,446	1.4
Hermes UK Infrastructure Fund II	51,479	1.6	-650	0	-230	50,599	1.5
Stonepeak Infrastructure Core Fund III	133,077	4.1	274	0	11,358	144,709	4.2
Stonepeak Infrastructure Core Fund IV	28,353	0.9	2,823	0	2,925	34,100	1.0
First Sentier EDIF II	123,488	3.8	-947	0	4,452	126,993	3.7
First Sentier EDIF III	0	0.0	7,212	0	436	7,648	0.2
<b>Cash Fund</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>
<b>Worcestershire CC Total Fund ex Overlay</b>	<b>3,257,323</b>	<b>100.0</b>	<b>48,777</b>	<b>1,840</b>	<b>128,362</b>	<b>3,434,462</b>	<b>99.0</b>
<b>Worcestershire CC Total Fund</b>	<b>3,257,349</b>	<b>100.0</b>	<b>47,328</b>	<b>1,873</b>	<b>129,785</b>	<b>3,434,462</b>	<b>99.0</b>

Note: Cashflow into cash reflects sum of portfolio contributions minus net investments. It is assumed that cash for the Fund is held outside of the invested assets and is therefore withdrawn from the Total Fund