TH Real Estate

a nuveen company

Investing in Tomorrow's World

A review of our 2016 sustainability achievements

Who we are

TH Real Estate, an investment affiliate of Nuveen (the investment management arm of TIAA), is one of the largest real estate investment managers in the world with c.$99bn in AUM. We provide access to every aspect of real estate investing. With offices in 20 cities throughout the US, Europe and Asia-Pacific, over 500 professionals and 80 years of investing experience, the platform offers impressive local expertise coupled with a sophisticated global perspective.

We invest in Tomorrow's World for the enduring benefit of our clients and society. Our investment, asset management and corporate strategies grow from an understanding of the structural trends that we believe will shape the future of real estate and responsible investing beyond market cycles. This 'Tomorrow's World' approach sits at the core of our investment process and business operations, informing our long-term view of real estate investments.

Our approach

We live in a world that is constantly changing and this is heightened by challenging market conditions, evolving investor requirements, and increased sustainability pressures. The real estate industry is preoccupied with market cycles, but focusing on the immediate year ahead can come at a cost: opportunities to capture structural growth are often missed and investors risk long-term value erosion.

Our priority is to deliver outperformance for our clients and protect Tomorrow's World, by future-proofing today's investments and identifying the optimum investments for tomorrow. At TH Real Estate, our Tomorrow's World approach focuses on the bigger picture trends and insights that will impact the future use and demand for global real estate.

"We aim to deliver value for our clients and society. Central to our fiduciary duty is the need to identify and manage the issues that are expected to impact on the performance of our clients' investments. We need to continuously pursue growth opportunities, whether that be capital or income, whilst minimising the risk of accelerated depreciation and early obsolescence within the portfolio of real estate assets that we manage. As occupier demand, investors' requirements, legislation, global climate and resource challenges evolve, our approach to future-proofing real estate continues to develop."

Abigail Dean
Head of Sustainability

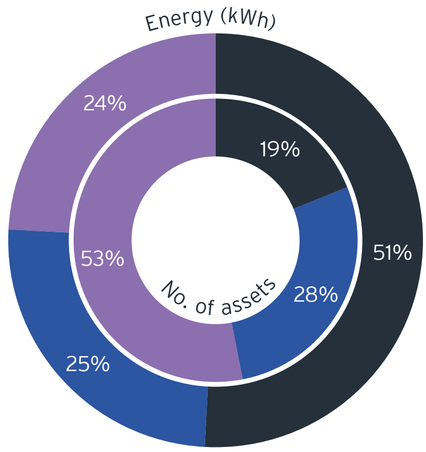
Long-term energy reduction target

TH Real Estate has made a public commitment to reduce the energy intensity of its 134 million sq ft (c.12 million sq m), $68bn global equity portfolio by 30% by the year 2030, based on a 2015 baseline. This builds on the target set in 2007 to reduce US energy consumption by 20% by 2020, a goal that has been achieved ahead of schedule. Our new commitment responds to and supports the ambitious goals for sustainable real estate established at the 21st Conference of the Parties (COP21) held in Paris in September 2015. We are embarking on a programme of work to improve the efficiency of properties across the portfolio. This will assist us in meeting the target and we expect to see significant progress made against it in the next few years.

In order to achieve the 2030 target, the global portfolio is structured into three tiers, based on the amount of energy consumed and the relative efficiency of each property, compared to the local market. There are different annual energy reduction targets applied to the assets within the three different tiers. Asset-level categorisation enables the Tomorrow's World programme to maximise energy efficiency gains across the portfolio and facilitates a house-level target-setting framework.

Our Tier 1 properties consume the most energy and are the most energy intense. We see the most aggressive energy reductions at these buildings. Fig.1 shows that Tier 1 properties make up 19% of our global portfolio by number, but account for more than half of our overall energy consumption.

Fig.1: Tier breakdown



Key
Tier 1 Tier 2 Tier 3

Source: TH Real Estate, 2017
Note: As at 31 March 2017

30% reduction by **2030**

A+ rating in Principles for Responsible Investment

EPA ENERGY STAR Partner of the Year **Sustained Excellence Award** for 10th year

Diverted **89% of waste** from landfill in Europe

10 funds were awarded **Green Stars** by GRESB in 2016

56% of our global office portfolio currently has **sustainability certification**

Achieved a **5% reduction in Greenhouse Gas Emissions** in the portfolio of properties that we owned throughout 2015 and 2016

Note: As at 31 March 2017

Who we work with

Our achievements

Achieved 10 Green Stars in the Global Real Estate Sustainability Benchmark

The Global Real Estate Sustainability Benchmark (GRESB) 2016 awarded our business 10 Green Stars for its European and US funds - an increase from eight last year. Two funds, the UK Retail Warehouse Fund and the Henderson UK Property PAIF were also ranked first in their peer group, with the UK Shopping Centre Fund ranked second in its peer group. The GRESB results recognised our funds for demonstrating global leadership in embedding sustainability throughout the property investment lifecycle.

Named EPA ENERGY STAR Partner of the Year - Sustained Excellence Award

We are proud to have been named by the US Environmental Protection Agency as a 2017 ENERGY STAR Partner of the Year – Sustained Excellence Award Winner for ongoing commitment to outstanding energy management practices and reductions in greenhouse gas emissions. Long recognised for responsible investing, the 2017 award marks our tenth consecutive year (previously awarded as TIAA) as a Partner of the Year, and the eighth consecutive year at the Sustained Excellence level. The award is bestowed upon a diverse set of organisations that have demonstrated continued leadership in energy efficiency. Implementing sustainability measures across the portfolio aligns with our view that environmental, social and governance factors can produce attractive long-term returns while also contributing to positive societal outcomes, broader economic development and a healthy environment.

Earned an A+ rating in latest Principles for Responsible Investment sustainability benchmark results

We earned an A+ rating in the latest benchmark assessment from 'Principles for Responsible Investment' (PRI), the world's leading proponent of responsible investment supported by the United Nations. The initiative is a premier global benchmark which assesses asset managers' integration of environmental, social and governance (ESG) factors into decision-making and ownership practices. The 2016 assessment reviewed 1,000 participants including all major global asset managers.

Case study:
225 Binney Street, Massachusetts, US

In 2015, we acquired a 70% stake in 225 Binney Street in Cambridge, MA, from Alexandria Real Estate Equities, the largest office REIT solely focused on science and technology campuses. This investment represented our first entry into this exciting and growing arena.

Cambridge is home to a dynamic biotech industry within Boston's innovation hub. The exposure to this sub-sector allows diversification beyond traditional office properties that cater to more typical office tenants in technology, finance, law or media.

The 305,000 sq ft (c.28,000 sq m) property is comprised of a recently-constructed six-story, Class-A office building, and two renovated historic brick-and-beam buildings. The newly-constructed building has achieved LEED Gold certification, in recognition of its efficient and environmentally-friendly construction and operation. The property is 100% net-leased through 2028 to Biogen, a multi-national bio-technology company specialising in the development of new drug therapies.

Case study:
Manchester Fort Shopping Park, Manchester, UK

At Manchester Fort Shopping Park, a 325,000 sq ft (c.30,000 sq m) site, we engaged with retailers on waste management initiatives to increase recycling and improve the collection procedure. The new programme allows for bespoke collections to be implemented for individual tenants, resulting in better cost analysis of the waste management services provided.

New colour-coded Rear End Loader containers were introduced to separate waste streams, including general waste, food waste, paper and cardboard. These were strategically placed in key locations throughout the Fort's service area. A pallet-weighing system was introduced into the waste compound and all bins are tagged with a Radio Frequency ID system. This allows each tenant to be monitored for their waste from the data which is fed back to Manchester Fort Shopping Park's management team from weighing each individual bin. To further reduce time spent by operatives moving waste from the front of the premises to the rear waste compound, B&M introduced their latest innovation, 'Ethel' the electric truck. This plug-in vehicle emits zero emissions into the environment and decreases the amount of time moving the bins around the site, therefore, increasing cost efficiencies. By replacing large quantities of wheelie bins with a compactor, B&M was able to dramatically reduce the collection frequency from three times per week to just once a week. This reduced the scheme's overall carbon footprint.

More than 79,000 kg of waste is collected in a year, of which Manchester Fort Shopping Park currently diverts 100% from landfill, as a result of B&M's dedicated RDF facility. The asset's carbon footprint has been minimised by reducing the number of waste collections at the site, something that has had the added benefit of decreasing the service charge costs to retailers. The significant cost savings allowed the centre to employ an additional employee dedicated to ensuring the success of the new waste strategy.

We continue to look for innovations going forward, such as a rainwater harvesting system, which will further move the asset up the Waste Hierarchy.

Case study:
699 Bourke Street, Melbourne, Australia

Jointly owned by TH Real Estate and Mirvac Group, 699 Bourke Street presents impressive sustainability features and embodies our commitment to preparing for Tomorrow's World:

- Awarded six Green stars by the Green Building Council of Australia.
- Largest solar power system on a commercial office in Melbourne leading to a reduction in greenhouse gas emissions by around 145 tonnes of CO_2 every year.
- Co-generation system provides a consistent level of heat and power to the building in a sustainable cost-effective way.
- Detailed sub-metering to enable monitoring of building services in order to optimise efficiency.
- Innovative Organic Response lighting system with 3,500 sensors to track occupancy and natural light levels.
- Real-time digital energy usage signage to facilitate occupier engagement.
- Designed to create a healthy workplace and boost well-being by optimising natural daylight, encouraging natural ventilation, and boosting biophillia.
- 80,000 litre rainwater catchment system to maximise the use of natural resources.
- Green travel friendly with enough storage for electric car charging ports and 275 bikes.

Environmental Performance Disclosure

Monitoring environmental performance is integral to our commitment to responsible property investment and management. The following analysis reviews our 2016 performance for the key impact areas of energy, water and waste. As a member of the European association for Investors in Non-Listed Real Estate Vehicles (INREV), we have tried to align our report with INREV's recommendations. Fig.2 details disclosure against the key performance indicators:

Fig.2: Absolute and like-for-like environmental performance

				Absolute			Like-for-like		
	Units of measurement		**Sustainability performance measures**	**2015**	**2016**	**% change**	**2015**	**2016**	**% change**
Energy	MWh	3.1 Electricity	For landlord shared services [GRI 4: EN3]	591,130	638,867	8%	530,388	525,831	-1%
Energy	MWh	3.1 Electricity	(Sub)metered exclusively to tenants [GRI 4: EN4]	34,297	36,251	6%	22,692	19,876	-12%
Energy	MWh	3.1 Electricity	**Total landlord-obtained electricity [GRI 4: EN3]**	625,428	675,119	8%	553,080	545,708	-1%
Energy	MWh	3.2 District thermals	For landlord shared services [GRI 4: EN3]	46,948	56,703	21%	42,172	42,898	2%
Energy	MWh	3.2 District thermals	(Sub)metered exclusively to tenants [GRI 4: EN4]						
Energy	MWh	3.2 District thermals	**Total landlord-obtained district thermals [GRI 4: EN3]**	46,948	56,703	21%	42,172	42,898	2%
Energy	MWh	3.3 Fuels	For landlord shared services [GRI 4: EN3]	133,499	149,719	12%	108,198	102,504	-5%
Energy	MWh	3.3 Fuels	(Sub)metered exclusively to tenants [GRI 4: EN4]	2,847	4,563	60%	618	696	13%
Energy	MWh	3.3 Fuels	**Total landlord-obtained fuels [GRI 4: EN3]**	136,346	154,282	13%	108,817	103,200	-5%
Energy	No. of applicable properties		**Energy and associated greenhouse gas (GHG) disclosure coverage**	345	339	-2%	250	250	
Energy	%		**Proportion of energy and associated GHG estimated**	9%	3%		9%	3%	
Greenhouse gas emissions	Tonnes CO_2e	3.5 Direct	Scope 1 [GRI 4:EN15]	24,624	27,548	12%	19,957	18,860	-5%
Greenhouse gas emissions	Tonnes CO_2e	3.6 Indirect	Scope 2 [GRI 4:EN16]	302,793	309,353	2%	272,352	258,816	-5%
Greenhouse gas emissions	Tonnes CO_2e	3.6 Indirect	Scope 3 [GRI 4:EN17]	38,003	37,130	-2%	29,764	26,391	-11%
Greenhouse gas emissions		Total	**Scopes 1 + 2 (only)**	327,417	336,901	3%	292,309	277,677	-5%

Source: TH Real Estate's 'Tomorrow's World' environmental performance monitoring platform, administered by third parties; Verco Advisory Services for assets in Europe/Asia-Pacific, and JDM Associates for assets in America, 2016-17

Environmental Performance Disclosure (continued)

Fig.2: Absolute and like-for-like environmental performance (continued)

	Units of measurement		Sustainability performance measures	Absolute 2015	Absolute 2016	Absolute % change	Like-for-like 2015	Like-for-like 2016	Like-for-like % change
Water	Cubic metres (m^3)	3.8 Water	For landlord shared services [GRI: EN8 partial]	1,427,334	1,433,931	0%	1,252,426	1,216,263	-3%
			(Sub)metered exclusively to tenants	110,905	150,668	36%	95,726	107,694	13%
			Total landlord-obtained water [GRI: EN8 partial]	1,538,239	1,584,598	3%	1,348,152	1,323,958	-2%
	No. of applicable properties		**Water disclosure coverage**	116	107	-8%	70	70	
	%		**Proportion of water estimated**	26%	12%		26%	12%	
Waste	Metric tonnes	3.10 Waste	Waste by disposal route [GRI 4: EN23]	20,892	20,460	-2%	17,233	18,836	9%
	Proportion by weight (%)	3.11 Waste	Composting / anaerobic digestion	2%	2%		3%	2%	
			Recycled	50%	52%		51%	51%	
			Off-site materials recovery facility	16%	20%		16%	21%	
			Incineration with energy recovery	17%	13%		15%	12%	
			Incineration with no energy recovery	0%	2%		0%	1%	
			Hazardous waste treatment facility	0%	0%		0%	0%	
			Landfill	14%	11%		15%	12%	
			Other	0%	0%		0%	0%	
	No. of applicable properties		**Waste disclosure coverage**	58	57	-2%	38	38	

Source: TH Real Estate's 'Tomorrow's World' environmental performance monitoring platform, administered by third parties; Verco Advisory Services for assets in Europe/Asia-Pacific, and JDM Associates for assets in America, 2016-17

Environmental Performance Disclosure (continued)

Fig.3: Intensity metrics

	Units of measurement	Sustainability performance measures	Industrial 2015	Industrial 2016	Industrial % change	Office 2015	Office 2016	Office % change	Retail 2015	Retail 2016	Retail % change	Residential 2015	Residential 2016	Residential % change
Energy	kWh/sq m/ year	**Building energy intensity** [GRI 4: CRE1]	19	18	0%	246	235	-4%	79	88	11%	82	78	-4%
Greenhouse gas emissions	$kgCO_2e$/sq m/year	**Greenhouse gas intensity** [GRI 4: CRE3]	7	6	-5%	106	95	-10%	24	22	-9%	28	27	-2%
Greenhouse gas emissions	Net Lettable Area (sq m)	Energy and associated GHG disclosure coverage	246,615	266,317	8%	1,854,147	2,220,523	20%	1,776,908	1,715,393	-3%	985,934	1,058,128	7%
Greenhouse gas emissions	Number of applicable properties	Energy and associated GHG disclosure coverage	10	12	20%	111	129	16%	97	93	-4%	50	55	10%
Water	m^3/sq m/year	**Water intensity**	N/A	N/A	N/A	0.7	0.6	-21%	0.7	0.7	-1%	12	12	-1%
Water	Net Lettable Area (sq m)	Water disclosure coverage	0	0	N/A	240,440	396,699	65%	1,321,525	1,259,325	-5%	4,649	4,649	0%
Water	Number of applicable properties	Water disclosure coverage	0	0	N/A	31	35	13%	44	42	-5%	2	2	0%

Source: TH Real Estate's 'Tomorrow's World' environmental performance monitoring platform, administered by third parties; Verco Advisory Services for assets in Europe/Asia-Pacific, and JDM Associates for assets in America, 2016-17

Environmental Performance Disclosure (continued)

Data Qualifying Notes:

Fig.1: Tier 1 assets are those assets that have the equivalent annual energy spend of c.$250,000 and the opportunity to achieve an ambitious standard of upper quantile energy efficiency performance in line with market best practice. Tier 2 assets are those assets that either have the equivalent annual energy spend of c.$250,000 or an opportunity to achieve energy efficiency performance in line with market best practice. Tier 3 assets are those assets that do not meet the either Tier 1 or Tier 2 criteria. On a case-by-case basis, assets may be allocated tiers for reasons other than those highlighted above (for example, if of particular asset management focus or investor interest). In all cases, Tiers are agreed with the respective Asset Managers.

Fig.2/3: This environmental performance summary covers 1 January 2015 to 31 December 2016 and focuses on TH Real Estate's directly managed assets. This includes the 'landlord obtained' utility supplies and managed waste. Electricity or gas that is sub-metered to occupiers and, therefore, capable of separate itemisation, is included in the absolute totals but shown separately in this report as Scope 3 emissions. The carbon footprint is therefore combined based on Scope 1, 2 and 3 impacts (in accordance with the GHG Protocol). This same principle of itemisation applies for water consumption.

The total absolute impact analysis (as the portfolio stood in each year) represents our total carbon, water and waste footprints from the activities under our direct control in the buildings we directly manage. This includes all directly-managed properties, irrespective of when they were acquired or disposed. Void consumption was also taken into account.

The like-for-like analysis uses a static portfolio approach, which includes only those directly-managed properties (i.e. those where TH Real Estate collects environmental data as part of the environmental reporting programme) that were held in the portfolio for the duration of the reporting period and the comparison year (1 January 2015 to 31 December 2015). It therefore allows us to compare exactly the same group of properties year-on-year. The following properties were excluded from the like-for-like analysis because they underwent a major refurbishment or development during the reporting period:

- Commonwealth House, London, UK
- The Point, London, UK
- St. James Shopping Centre, Edinburgh, UK
- 6-8 Fenchurch Buildings, London, UK
- 99-100 Fenchurch Street, London, UK
- Swindon Designer Outlet Mall, Swindon, UK

Asset types: Assets fall into several asset classes, including retail assets, industrial assets, offices and residential sites. Floor area based normalisation for this fund is therefore broken down by asset type, where relevant.

Energy, carbon, and water intensities have been calculated by using floor area to normalise consumption and emissions. Where we only collect floor area information as Gross Internal Area, we have applied industry-standard ratios to convert it to Net Lettable Area to allow comparison between countries.

Portfolio churn: Several assets were acquired and disposed during the reporting timeframes; they were included in absolute reporting and excluded from Like-for-Like reporting. Environmental data outside of the hold period of TH Real Estate ownership window have been excluded.

Estimations: Data are collected from a number of sources for the purpose of environmental performance reporting. These include: automatic meters, utility bills and meter reads from property managers. Where data is missing, we have estimated data based on data already received for a property. In this disclosure, estimation refers to filling invoice gaps, not to whether invoices are based on "estimated" or "actual" readings.

Emissions factors: We have used carbon emission factors from DEFRA 2016 (www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2016) and IEA.org factors for non-UK electricity use.

Verification statement for TH Real Estate

Verco Advisory Services (Verco) hereby confirm that the environmental data consumption reported for TH Real Estate has been verified through a trend and variance analysis. There has been extensive correspondence with the data collectors to review the accuracy of the data. The verification has been done in line with the ISO 14064-3 standard.

The verification checks are delivered by Verco, a specialist sustainability consultancy, on the sustainability disclosures related to TH Real Estate assets. This provides investors and other stakeholders with confidence in the reported data.

Paul Stepan
Head of Policy, Strategy and Compliance
Verco Advisory Services

Meet the team

Abigail Dean

Head of Sustainability

With 11 years' experience of working in the built environment, Abigail joined TH Real Estate in 2016 to lead on sustainability, and help the business deliver its mission to invest in Tomorrow's World. Abigail oversees the Sustainability Strategy, which positions us as a global leader on ESG issues, and ensures the business is well placed to pursue growth opportunities, whilst minimising the risk of accelerated depreciation and early obsolescence within TH Real Estate's portfolio of assets.

Abigail previously worked at JLL, where she led on sustainability for the Property and Asset Management business, embedding it into core processes and deliverables.

Abigail is an active member of the Better Buildings Partnership and sits on a number of their working groups. She has also contributed to the World Green Building Council's Better Places for People campaign.

T: +442037278448
E: abigail.dean@threalestate.com

Richard Hamilton-Grey

Sustainability Manager, Europe and Asia-Pacific

Richard is responsible for our Corporate Sustainability and Responsible Property Investment programmes. He supports fund and asset teams with the active management and integration of environmental, social and governance risks, into all aspects of their portfolios.

Previously at Land Securities, Richard was responsible for energy management across office, retail and leisure portfolios. Whilst at the Institute for Sustainability, he managed a number European-wide Responsible Property Investment programmes.

Through managing a number of sustainable property innovation programmes, Richard has strong links with education institutions specialising in sustainability in real estate. Richard holds a first class degree in International Development from the University of Liverpool and a Masters from the University of London. He also sits on a number of working groups at the Better Buildings Partnership.

T: +442037278408
E: richard.hamilton-grey@threalestate.com

Meghan Johnson

Sustainability Associate, US

With nine years' experience working in finance and social impact, Meghan is responsible for sustainability initiatives in the US. Prior to her current role, she worked as a strategic analyst at Nuveen.

Meghan started her career at Merrill Lynch Global Wealth and Investment Management as a product manager. She also served as a special projects coordinator at FINCA Bank Georgia, a Eurasian subsidiary of the microfinance organisation FINCA International, Inc. There, she was responsible for integrating and monitoring environmental, social and governance (ESG) principles in lending processes, methodology control, and new product development. She joined TH Real Estate in 2016.

Meghan graduated from Harvard University with a Bachelor's degree in Economics, and has lived and worked in Latin America and Eurasia.

T: +12129166095
E: meghan.johnson@threalestate.com

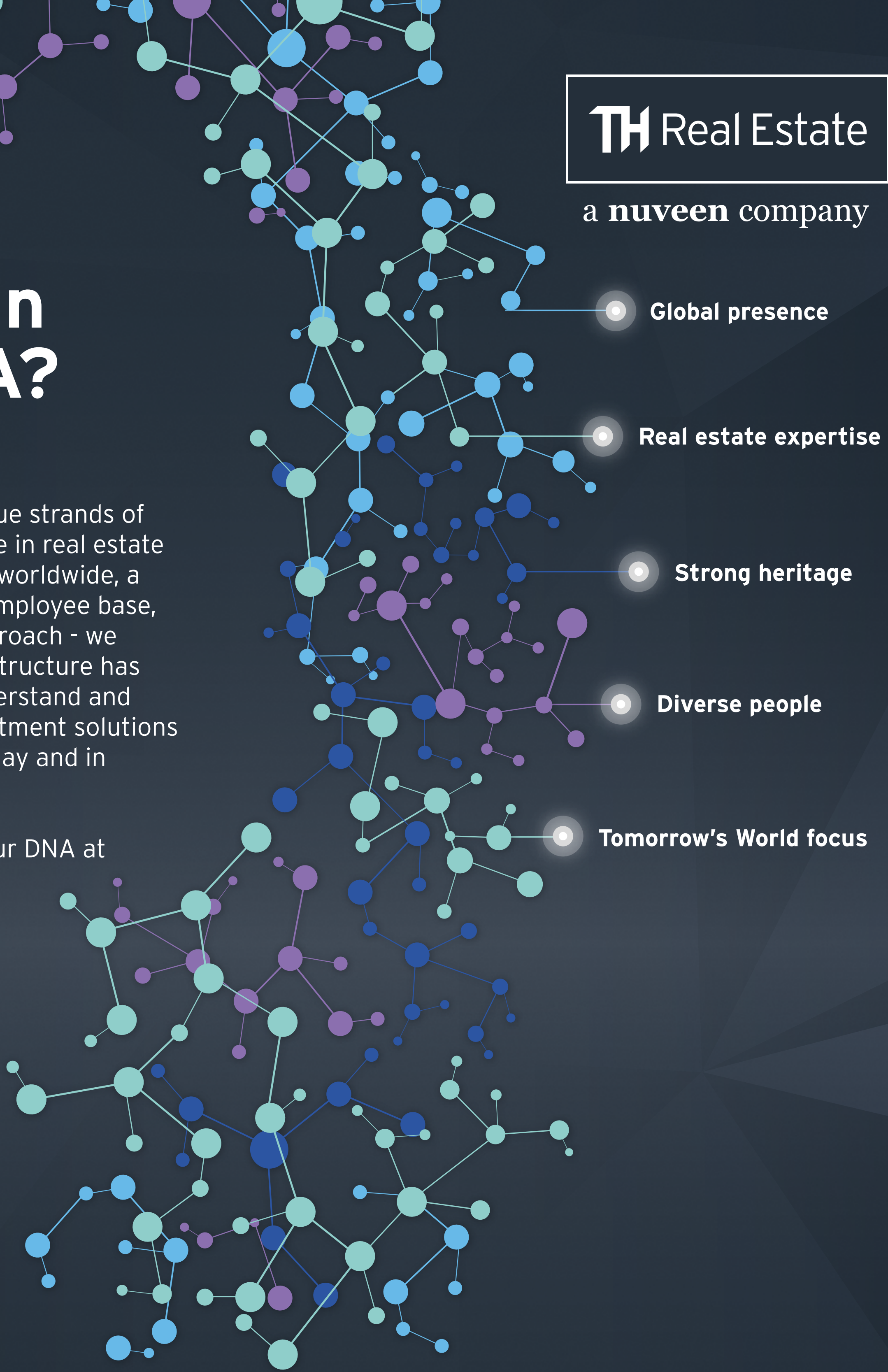
TH Real Estate

a nuveen company

What's in our DNA?

By combining our unique strands of DNA - a strong heritage in real estate investment, 20 offices worldwide, a dynamic and diverse employee base, and a research-led approach - we believe our biological structure has evolved to help us understand and deliver attractive investment solutions for our clients both today and in Tomorrow's World.

Find out more about our DNA at **threalestate.com**



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