RXR Realty is a vertically integrated private real estate company with expertise in investment management, property management, development, design, construction, leasing and financing. RXR’s core growth strategy is focused on New York City and the surrounding tri-state area markets.
The RXR platform

74 commercial real estate properties and investments under management
$15.7 billion approximate aggregate gross asset value as of 6/30/17
22.1 million square feet of commercial operating properties
5200 multi family and for sale units under active development

Commercial Office Utilities

<table>
<thead>
<tr>
<th>Utility</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>$31,688,980</td>
</tr>
<tr>
<td>Gas</td>
<td>$706,304</td>
</tr>
<tr>
<td>Steam</td>
<td>$6,816,553</td>
</tr>
<tr>
<td>Water</td>
<td>$3,239,452</td>
</tr>
<tr>
<td>Fuel Oil</td>
<td>$261,758</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$42,713,047</td>
</tr>
</tbody>
</table>

RXR Realty
Tenant focus activities


2. Energy audits

3. Help understanding energy and sustainability issues and providing strategies to optimize.

4. Energy retrofits

5. Aligned interests

6. Data transparency
Active engagement at Starrett Lehigh

- All tenants have real time access to their individualized energy performance data through a customized tenant energy platform.
- High level energy audits are provided to all tenants.
- Tenants are provided with education on energy efficiency and information on utility funded energy efficiency incentives and programs. Multipronged outreach: events, email campaigns, public area posters, direct one on one.
- Climate week event on roof.
- All PM staff actively engaged in increase efficiency
- Mitchell Grant founded the West Chelsea Energy Alliance to push out into the community.
Active engagement

- Town hall events, data transparency, encouragement, outreach through mailings, aligned interests
- NYSERDA Commercial Tenant Program engagement
- Consulting through the process by landlord
- On lease financing considered
- Project management
- High efficiency fit outs
- Building will provide data to support tenant sustainability goals and tracking
Encouraging and working as a team to help 2 major tenants with their goals.

- Large lighting retrofits, daylight harvesting, sensors
- LEED EB Silver
- Proactive encouragement
- Right sized chiller plant
- Retro commissioning (Tenant equipment)
- Data Center setpoint adjustments
- Free waterside cooling
- Supplemental equipment scheduling
- Office equipment scheduled
The Next Frontier: Tenant Engagement in Commercial Buildings

Gary Fescine FMA, RPA
Global Director of Enterprise Services Building Operations

October, 2017
BLACKROCK NEW YORK CITY REAL ESTATE INVENTORY

668,000
Rented Square Feet

3
Locations

30
Floors

3,182
Full Time Employees
BlackRock accepted the NYC Carbon Challenge for Commercial Offices in 2013 and is participating in the program as a commercial tenant. By accepting the Challenge, BlackRock committed to reduce its building-based greenhouse gas (GHG) emissions intensity by 30% (from 2011 levels) by 2023.
<table>
<thead>
<tr>
<th>Energy Conservation Measure (ECM) Category</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1</strong> Data Centers and Server Rooms</td>
<td>Data Center Load Reduction</td>
</tr>
<tr>
<td>Process and Plug-Loads</td>
<td>Upgrade to More Efficient Energy Star Appliances, Print Smart Copiers</td>
</tr>
<tr>
<td>HVAC Controls and Sensors</td>
<td>HVAC Thermostat Recalibration,</td>
</tr>
<tr>
<td>Process and Plug Loads</td>
<td>Auto-Shutdown Program for Office Display TV’s, Look at Technology for CPU Shut Downs</td>
</tr>
<tr>
<td>Lighting</td>
<td>LED Lighting Upgrade</td>
</tr>
<tr>
<td>Equipment</td>
<td>Upgrade to More Energy Efficient Equipment at useful end of life</td>
</tr>
<tr>
<td><strong>Phase 2</strong> Motors</td>
<td>Installation of ten (10) Variable Frequency Drives in 40 East 52\textsuperscript{nd}</td>
</tr>
<tr>
<td><strong>Phase 3</strong> Internet Of Things</td>
<td>Install IoT Sensors on sixteen (16) floors in 40 East 52\textsuperscript{nd}</td>
</tr>
<tr>
<td>Big Data Analytics &amp; Real-Time Optimization</td>
<td>Integrate IoT Sensors with NANTUM Operating System</td>
</tr>
</tbody>
</table>
NYC CARBON CHALLENGE – BLACKROCK CARBON EMISSIONS 2011-2018

ENERGY USE & CO2E PROJECTIONS
TENANT AND OWNER ENGAGEMENT MAXIMIZES SUSTAINABILITY

- BlackRock partnered closely with Rudin Management Company to reduce energy consumption within their BlackRock spaces at 40 E 52nd Street.
- Capital costs and savings were split between both parties for the installation of 10 VFD air handling units.
- The project reduced electricity consumption by 850,000 kWh and yielded $160,000 in annual savings.
- Opens up opportunity for future savings and real-time energy load reduction measures.

BLACKROCK & RUDIN MANAGEMENT LEAD THE WAY IN REDUCING GHG EMISSIONS THROUGH COLLABORATION & INNOVATION
In order to further the benefit of the VFDs at 40 East 52\textsuperscript{nd} Street, Rudin Management introduced BlackRock to Prescriptive Data and its flagship operating system, \textbf{Nantum}, which pairs thermodynamics of space with machine learning to provide additional energy savings.
BLACKROCK & RUDIN FACILITIES INTEGRATED IN NANTUM

- **Building Management Systems (BMS)**
- **Utility Meters** – Water, Steam, Electrical, Gas, Oil
- **Network Analytics**
- Cisco Energy Manager **IP Plug Load Management**
- **Smart Lighting Systems**
- **Dedicated Occupancy Counters**
- **Comfort Controls**
- **IoT Sensors**
- **Fire Alarm and Communication Systems (FACS)**
- **Isolated & Building-Integrated HVAC Units**
- **External Weather**
Nantum is an operating system that can integrate into any built space, **providing predictive and prescriptive pathways for operational success**.

Nantum’s algorithms **continuously improve building efficiency over time**, so BlackRock won’t miss out on opportunities for cost savings.

Leveraging the power of the IoT, Nantum creates real-time correlation between occupancy and HVAC, **empowering BlackRock to heat or cool only what is necessary**, increasing employee satisfaction and reducing carbon footprint.
EXPANDING TO ALL 16 FLOORS AT 40 EAST 52ND STREET

ELECTRIC DEMAND OVER 24-HOUR PERIOD

<table>
<thead>
<tr>
<th>Reduction Activity</th>
<th>kWh</th>
<th>SAVINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Startup Delay</td>
<td>114,513</td>
<td>$21,758</td>
</tr>
<tr>
<td>Midday Ramp Down</td>
<td>70,998</td>
<td>$13,490</td>
</tr>
<tr>
<td>End of Day Ramp Down</td>
<td>141,967</td>
<td>$26,979</td>
</tr>
<tr>
<td>Saturday Operations Partial Load</td>
<td>66,265</td>
<td>$12,590</td>
</tr>
<tr>
<td><strong>Total Savings</strong></td>
<td>393,774</td>
<td><strong>$74,817</strong></td>
</tr>
</tbody>
</table>
A successful outcome of the Nantum project in 40 East 52nd St., could lead to the installation of Nantum at all of our large sites, including new large offices. This will provide insights into real-time energy usage at the portfolio level to further reduce greenhouse gas emissions and give us the ability to view all sites on the Nantum dashboard.