Asset Management:

Creating Value Through Efficiency and Sustainability

通过效率与可持续性创造价值
Developing an Effective Energy Management Strategy and Implementation Plan
制定高效的能源管理战略及执行计划

1. Background on GWL Realty Advisors Inc.
   GWL Realty Advisors 公司背景介绍

2. Why an Energy Management Strategy is Important
   为什么能源管理战略至关重要

3. Components of an Energy Management Strategy
   能源管理战略要素

4. Results for GWL Realty Advisors Inc.
   GWL Realty Advisors公司的成就
Background on GWL Realty Advisors Inc.
GWL Realty Advisors
公司背景介绍
GWL Realty Advisors Inc. is a wholly-owned subsidiary of the Great-West Life Assurance Company, one of the largest financial institutions in Canada.

GWL Realty Advisors是大西人寿保险公司全资附属企业，后者是加拿大最大的金融机构。
GWL Realty Advisors Inc. Overview

We are a leading Canadian real estate investment advisor to pension funds and institutional clients.

Full Service Platform
- Acquisitions and Dispositions
- Portfolio Management
- Asset Management and Development
- Property Management and Leasing

Assets Under Management (at December 31, 2015):
- $17.2 billion; 287 properties
- 49.4 million SF of commercial and 9.5 million SF of residential properties (11,405 suites)

Staffing:
- Over 900 real estate professionals
- 12 primary offices located across Canada
Portfolio by Type – National 按照资产组合类型 ——全加拿大范围
Active in all asset classes, but with a strong focus in office 涉及所有资产类型，但重点关注写字楼

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Square Feet (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>29,200,000 SF</td>
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<tr>
<td>Industrial</td>
<td>17,100,000 SF</td>
</tr>
<tr>
<td>Retail</td>
<td>3,100,000 SF</td>
</tr>
<tr>
<td>Residential</td>
<td>9,500,000 SF</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>58,900,000 SF</td>
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</table>

- **Office**: 61%
- **Industrial**: 11%
- **Retail**: 5%
- **Residential**: 16%
- **Miscellaneous**: 7%
Core Assets – Toronto 核心资产 —— 多伦多

Commerce Court
2,000,000 SF
Built in 1931/1972

South Core Financial/ Delta Hotel
1,900,000 SF
Built in 2012/2014
Core Assets - Calgary

Western Canadian Place
1,100,000 SF; Built in 1983
1,100,000 平方英尺，建于1983

Gulf Canada Square
1,000,000 SF; Built in 1979
1,000,000 平方英尺，建于1979
Core Assets – British Columbia

- **Park Place**
  - 593,000 SF; Built in 1984
  - 593,000 平方英尺，建于1984

- **Commerce Place**
  - 227,000 SF; Built in 1985
  - 227,000 平方英尺，建于1985

- **Vancouver Centre**
  - 474,000 SF; Built in 1977
  - 474,000 平方英尺，建于1977
Core Assets – British Columbia

1188 W. Georgia St
205,000 SF; Built in 1980
205,000 平方英尺, 建于1980

Robson Court
211,000 SF; Built in 1986
211,000 平方英尺, 建于1986

Crestwood Corporate Centre
756,000 SF; Built in 1989-1999
756,000 平方英尺, 建于 1989-1999
Why an Energy Management Plan is Important

为什么能源管理计划至关重要
Why an Energy Management Strategy is Important

Tenants:
• Lower operating costs 降低运营成本
• Employee attraction/retention 吸引/留用员工
• Transparency & disclosure 透明性与开放性
• Brand & image 品牌&形象

The Industry (best practices/competition)
(最佳实践/竞争)
• Green certifications (BOMA BEST, LEED, WELL) 绿色认证（BOMA BEST, LEED, WELL）
• Sustainability reporting & frameworks (GRI, GRESB) 可持续报告与框架（GRI, GRESB）

Government (政府)
• Federal regulations 联邦法规
• Provincial regulations 省级法规
• Municipal by-laws 市级法律

Owners (业主)
• Investor Relations 投资者关系
• Corporate CSR 企业CSR
• Returns 回报

Property Manager (物业经理)
• Deliver long-term, stable returns to clients 为客户提供稳定的长期回报
• Corporate brand & image 企业品牌与形象

Government

Owners

Property Manager

Tenants
Government Legislation 政府立法

**Government of Canada** 加拿大政府:

COP21 (2015 Paris Climate Conference) to keep climate change to <2% above pre-industrial levels

COP21 (2015 年巴黎气候大会) 将气候变化保持在工业化之前 2% 的水平之内

Federal Carbon Pricing – collaboration with provinces under consideration

联邦碳定价 – 与相关各省合作

**Provinces of British Columbia and Alberta**

不列颠哥伦比亚 以及亚伯达:

• Carbon taxes - $30/tonne
  碳排放税费 - 30 美元/吨

**Province of Ontario**

安大略省:

• Cap & Trade; 上限与贸易;
  • Mandatory reporting/disclosure
    强制报告/披露
Vancouver has adopted the Greenest City Action Plan which outlines the city’s commitment to:

- Require all new buildings to be carbon neutral by 2020;
- Reduce energy use and greenhouse emissions for existing buildings by 20% compared to 2007 levels;
- Reduce per capita water consumption by 33% compared to 2006 levels; and
- Reduce solid waste going into landfill by 50% from 2008 levels.
Sustainability Advancement – Industry Trends 可持续性发展 —— 行业趋势

Using building design and amenities to attract tenants and their employees
利用楼宇设计和设施吸引租户及其员工

Tenant leasing decisions increasingly concerned about energy use and operating costs
租户在租赁决策时越来越注重能耗及运行成本

Increasing corporate focus on employee health and wellness
企业越来越重视员工健康与舒适

Green building standards and certificates now the norm, not the exception
绿色建筑标准及认证已经成为业界标准而非创举

Big data and analytics emerging sector technologies - driving operating efficiency
大数据及分析促使行业科技发展 - 推动运行效率
Sustainability and Value Creation 可持续性与价值的创造

- Tenants Engagement 租户参与度
- Tenant Retention 租户挽留
- Risk Management 风险管理
- Future Planning 未来规划
- Increase Knowledge 增加知识
- Reduce Operating Expenses 降低运营支出
- Increase Income 增加收入
- Increase Property Value 提升资产价值
Components of an Energy Management Strategy
能源管理战略要素
Components of an Energy Management Strategy 能源管理战略要素

**Data Management & Analysis**
- Database management 数据库管理
- Managing/ tracking KPIs: energy, water, waste, emissions 管理/追踪关键绩效指数：能源、水、废弃物、排放
- Greenhouse gas emissions inventory 温室气体排放库存

**Benchmarking & Targeting**
- Comparisons to industry best practices, regional averages & peers 相比行业最佳实践、地区平均水平及同类比较
- Set forward-looking targets 制定未来目标

**Operational Excellence**
- Green certifications 绿色认证
- Training & education 培训及教育
- Audits 审计
- Tenant engagement 租户投入度
- Capital projects: green specifications 资金项目 – 绿色规格

**Policies & Procedures**
- Sustainability policies and procedures 可持续性政策与流程
- Sustainability reporting 可持续性报告
- 3rd party surveys & disclosure 第三方调研与发布
Data Management & Analysis 数据管理与分析

- You can't manage what you don’t measure! 无法度量就无法管理！
- Growing demand for sustainability information 可持续性信息需求不断增加
- Internal and external clients demand meaningful information to support: 内部与外部客户需要有意义的信息作为支持:
  - Property Managers: operational performance and tenant relations
    物业经理：运行绩效与租户关系
  - Asset/Leasing Managers: business planning and programming, tenant communications
    资产/租赁经理：业务规划与方案，租户沟通
  - Portfolio Managers: client relationship management
    资产组合经理：客户关系管理
  - Corporate: marketing, internal/external communications, employee attraction/retention
    企业：营销、内部/外部沟通、吸引/留用员工

Quality Data 质量数据
- Energy 能源
- Water 水
- Waste 废弃物
- GHGs 温室气体

Strong Information 强有力的信息
- Analysis 分析
- Programming 计划
- Application 应用
- Reporting 报告

Actionable Business Intelligence 可执行的业务资讯
- Client Relationships 客户关系
- Business Planning 业务计划
- Budgeting 预算
- Operating 运行
Utility use is tracked both at the property level and corporate level. Property-level sustainability reports are produced for each asset, for use as a common and consistent reference document.

The reports provide key performance indicators (KPIs) related to:

- Progress towards energy, water and waste reduction targets
- Utility cost savings
- Comparative benchmarks to understand relative and absolute performance
- Green certification status and scores

The reports are used in discussions by property, asset, portfolio and leasing teams to better inform:

- Budgeting, capex and business planning
- Client and tenant communications
- Annual performance goals/ objectives

Data Management & Analysis 数据管理与分析
Comparing and Benchmarking Performance
对比绩效并指定标杆
- Information to determine whether or not a property is on target and whether corrective action is needed
确定地产是否符合目标或者需要进行修正的信息
- Information to assess the relative performance of a property compared to similar markets
对比类似市场评估地产相对绩效的信息
- Information to assess the performance of a property relative to other managed properties
对比其他经过管理的地产，评估房产绩效的信息
- Plan for tomorrow, while optimizing performance for today
优化当前绩效、规划未来绩效

| This Property's Score: 90% |  |  
|---------------------------|--|---|
| Energy: 88 | Emissions and Effluent: 95 |
| Water: 80 | Indoor Environment: 87 |
| Waste: 91 | Env. Mgmt. System: 100 |

| Average Regional Score: 79.2% |  |  
|------------------------------|--|---|
| Energy: 70.4 | Emissions and Effluent: 88.7 |
| Water: 65.1 | Indoor Environment: 83.4 |
| Waste: 76.0 | Env. Mgmt. System: 98.6 |

Tracking Utility Usage Against Target
针对目标追踪设施使用情况

- Tracking Utility Usage Against Target

- Plan for tomorrow, while optimizing performance for today

- Information to determine whether or not a property is on target and whether corrective action is needed

- Information to assess the relative performance of a property compared to similar markets

- Information to assess the performance of a property relative to other managed properties

- Plan for tomorrow, while optimizing performance for today
**Benchmarking and Target Setting**

- Key benchmarks include energy and water use intensity and waste diversion rate. 
  关键标杆包括能源与水使用强度及废弃物转化率。
- Teams use benchmarks to understand building performance and inform management strategies. 
  团队使用标杆来了解建筑绩效并传达管理战略。
- Focus on comparisons to industry best practices, regional averages and internal peer rankings. 
  关注与行业最佳实践、地区平均水平及内部同行排名进行的对比。
Benchmarking and Target Setting
制定标杆与目标

- Sustainability Benchmarking and Conservation Program (SBCP) created to increase energy, water and waste efficiency across the office portfolio. 可持续性标杆与保护计划（SBCP）旨在提升办公楼资产组合的能源、水与废弃物效率

- Key elements of the SBCP:
  SBCP 要素:
  - Benchmark performance against industry best practices, regional averages and internal peers; 相对行业最佳实践、地区平均水平与内部同行的标杆绩效对比;
  - Set 5-year reduction targets (2013-2018) based on benchmarks for energy, water and waste; 根据标杆制定 5 年内能源、水与废弃物缩减目标（2013–2018）;
  - Develop action plans to achieve the necessary reductions; and 制定行动计划实现必要的缩减；以及
  - Monitor and report progress; 监测与报告进度;
  - Corporate Sustainability Team tracks and reports on progress and performance; 企业可持续性团队跟踪与报告进度和绩效;
  - Property Management Teams are recognized for their achievements. 认可物业管理团队的成绩。

*Assets listed on next page by highest to lowest EUI

<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
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<tbody>
<tr>
<td>Green Zone</td>
<td>WUI and REALpac EUI are less than GWLRA average</td>
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<tr>
<td>Energy Zone</td>
<td>REALpac EUI less than portfolio average of 26.2 ekWh/ft²</td>
</tr>
<tr>
<td>Water Zone</td>
<td>WUI less than portfolio average of 63 L/ft²</td>
</tr>
<tr>
<td>Green Opportunity</td>
<td>WUI and REALpac EUI are above GWLRA average</td>
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</table>
Benchmarking and Target Setting at a Portfolio Level

WATER: 2015
62.2 L/sq.ft./yr
ON TRACK
$390,000 avoided costs in 2014 and 2015

ENERGY: 2015
25.4 ekWh/sq.ft./yr
ON TRACK
$1,400,000 avoided costs in 2014 and 2015

WASTE DIVERSION: 2015
68.8% diversion rate
ON TRACK
Average diversion rate is better than RCO National Average
Benchmarking and Target Setting 制定标杆与目标

- Demonstrates to clients and tenants a commitment to sustainability and planning for the future; 向客户与租户展示自己对可持续性的重视以及对于未来的规划；
- Helps avoid costs and manage risk due to escalating utility rates and waste disposal fees; 在利用率及废弃物处置费用不断提升的情况下，有助于避免成本与管理风险；
- Drives operational excellence; and 推动卓越的运营管理；以及
- Reflects industry best practices, keeps pace with industry peers/ leaders and meets requirements of international surveys. 参考行业最佳实践，与业界同行/领先企业保持一致并且满足国际调研的要求。
Sustainability and energy management plans are informed by in-depth, regular reviews and 3rd party audits. Through regular, in-depth reviews and 3rd party audits, sustainability and energy management plans are determined.

- In 2015, 99% of the office portfolio had completed or planned an energy audit; 94% a waste audit and 98% a water audit.

- A majority of properties undergo energy audits every three years, partly driven by BOMA BEST.

- Government and/or utility company incentives offer to make conservation projects more feasible.

In 2015, these audits led to the completion of 85 sustainability-related capital projects across the portfolio, contributing to reductions in utilities, costs and GHG emissions. 2015 年，这些审计促使各种资产组合领域实现了 85 个可持续资本项目并介绍了缩减设施、成本与温室气体排放。

- e.g. lighting retrofits, building control upgrades, and conversion to higher-efficiency chillers/boilers, installation of low-flow water fixtures.

例如，灯光重新装饰、楼宇控制升级、转而使用更高效率的冷冻机/锅炉、安装低流量水设施。
Operational Excellence: Green Certifications 运营卓越：绿色认证

BOMA BEST® Certification Initiative: Objective to certify 100% of eligible commercial assets and maintain this across the managed portfolio.

BOMA BEST® 认证举措：旨在针对配有管理服务的资产组合中百分百符合条件的商业资产进行认证并保持其认证状态

Managers work to improve scores upon recertification, helping to drive operational improvements

经理努力提升再认证时的分数，有助于推进运营改善

As at Q2-2016: 95% of eligible assets certified

截止 2016 年第二季度；95% 符合条件的资产获得了认证

LEED: Strategically certify core assets and developments, based on location and market conditions

LEED：根据位置与市场条件对核心资产与开发进行战略性认证

As at Q2-2016: 21 certified LEED assets

截止 2016 年第二季度：21 个获得 LEED 认证的资产

GWLRA BOMA BEST Certifications, ’10-’15

No. Of Buildings by Asset Class

- Actively in pursuit
- Open Air Retail
- Office
- Light Industrial

2010 2011 2012 2013 2014 2015

0 25 50 75 100 125 150 175 200 225 250 275 300
Encourage professional development:
鼓励专业能力的发展:
• Growing demand for skilled professionals 对技能优秀的专业人员需求不断增加
• Increasing roles/ responsibilities around sustainability 可持续性领域的角色/职责不断增加
• Competition for talent (retain/ attract employees) 针对人才开展竞争（留用/吸引员工）

3 certifications are being promoted at GWL Realty Advisors:
GWL正在推进 3 项认证:
• Building Operator Certification 建筑操作人员认证
• Certified Energy Manager (CEM) 能源经理认证（CEM）
• LEED Green Associate (GA)/ Accredited Professional (AP) LEED 绿色协会（GA）/专业人士认证（AP）

Building Operator Program Partnership
建筑操作人员计划合作
• Scholarship for local technical college and co-op placement opportunities 当地技术学院及公司安置机遇奖学金
Operational Excellence: Capital Projects  运营卓越：资本项目

Capital Projects – Green Specs  资金项目 – 绿色规格
• Energy efficiency and cost savings are part of the business case for investing in building capital projects
针对建筑资本项目进行投资包括能效与成本节省

Pilot Projects – New Technologies  示范项目 – 新型科技
• Building controls systems/ metering/ monitoring
  楼宇控制系统/计量/监测
• Heat recovery systems/ geothermal
  热量回收系统/地热
• District energy systems
  地区能源系统

New Construction Standards  新建筑标准
• LEED Gold to Platinum are minimum standards for office development
  LEED 黄金至白金认证是办公楼开发的最低标准
Operational Excellence: Capital Projects

Capital Improvements: high efficiency chillers, motors & VFDs

Innovation: green roofs and green walls

Retrofits: lighting

Capital Improvements: high efficiency chillers, motors & VFDs
Operational Excellence: Tenant Engagement 运营卓越：租户参与度

Property Management’s #1 priority remains ensuring tenant safety, satisfaction and comfort. Increasingly, this involves engaging tenants, residents and occupants in sustainability by:

- Understanding tenant’s sustainability needs (e.g. their corporate reporting requirements);
- Finding opportunities to reduce tenant’s utility costs;
- Encouraging conservation behaviour among building occupants;
- Communicating with tenants about property-level sustainability activities;
- Hosting/organizing sustainability-oriented events;
- Promoting the health and wellness of occupants; and
- Promoting productivity of occupants.

物业管理第一要务仍是确保租户安全、满意与舒适。这就越来越需要通过下列举措促使租户、居民及住户投入到可持续发展之中：

- 了解租户可持续要求（例如，他们的公司报告要求）；
- 寻找机会减少租户的设施成本；
- 鼓励住户的节能举措；
- 与租户讨论物业层次上的可持续性活动；
- 举办/组织可持续性活动；
- 提升住户的健康与舒适；
- 提升住户的生产力。
Policies, Procedures & Reporting 政策、流程与报告

Investors’ and governments’ positions around corporate environmental, social and governance policies continue to mature
企业环境中投资者与政府的地位，社会与管理政策不断成熟

- Changed perceptions of what is included in “fiduciary duty”
  “受信责任”的概念有所变化
- Continued growth/ popularity of global standards
  全球标准不断增长/受欢迎

National sustainability policies formalize sustainability objectives and encourage operational excellence at the property level
国家可持续性政策正式规定可持续目标并鼓励物业层次的卓越运营

- Policies cover: GHG emissions, energy, water, waste, green cleaning and green procurement
  政策包括：温室气体排放、能源、水、废弃物、绿色清理与绿色采购
- Policies support BOMA BEST certification initiative and LEED
  政策支持 BOMA BEST 认证举措及 LEED

Annual reporting and disclosure of performance to stakeholders
向相关利益者提交年度报告与绩效文件

- Public Accountability Statement, Global Reporting Initiative, informed Annual Review, GRESB survey, CDP climate change questionnaire
  公共职责声明、全球报告举措、年度审查、GRESB 调研、CDP 气候变化问卷
GWL Realty Advisors has distinguished itself as a responsible manager:
GWL Realty Advisors公司是一个负责的管理机构:

• Achieved “Green Star” ranking in its submission to the 2015 Global Real Estate Sustainability Benchmark (GRESB) – placed in top 15% of 688 global participants.
在2015年全球房地产可持续标杆（GRESB）中获得了“绿色之星”称号 - 在688个全球参与者中排名前15%。

• Since 2011, properties and staff have received 89 awards/recognitions related to sustainability, operational excellence and development.
自2011年起，地产与工作人员获得了可持续、运行卓越及开发方面89项奖励/表彰。
Results for GWL Realty Advisors Inc.
GWL Realty Advisors公司的成绩
In Summary 总结

An effective energy management strategy and implementation plan is a key strategic initiative for asset and property management practices. Asset/property managers are responsible for:

有效的能源管理战略与执行计划是资产与物业管理实践的重要战略举措。资产/物业经理负责：

- Measuring energy consumption; 测量能耗；
- Establishing property-level targets; 制定房产层次的目标；
- Establishing and monitoring efficiency programs; 制定与监测效率计划；
- Annual business and capital planning; 年度业务与资本规划；
- Reviewing performance and implementing opportunities for improvement; and 审查绩效并落实改善机遇；以及
- Reporting results to clients. 向客户汇报结果。
An Effective Plan has Demonstrated Results 有效的计划所展示的成果

Portfolio results are strong (2013-2015): 资产组合计划非常有效（2013-2015）:
- 3.7% reduction in absolute GHG emissions (9,744 tonnes CO\textsubscript{2}e)
  温室气体绝对排放量减少了 3.7%（9744 吨二氧化碳）
- On an intensity (per SF) basis, all of our key performance indicators decreased: emissions, energy, water and waste:
  从密度角度来说（每平方英尺），所有关键绩效指标都有所下降：排放、能源、水及废弃物：

- 7.6% decrease in GHG emissions intensity (Scopes 1, 2 and 3)
  温室气体排放密度下降 7.6%（范围 1、2 和 3）

- 4.9% decrease in energy intensity
  能源密度下降 4.9%

- 2.7% decrease in water intensity
  水密度下降 2.7%

- 10.4% decrease in waste to landfill
  填埋废弃物减少 10.4%

2007-2012: achieved 22% reduction in GHG emissions
2007-2012：温室气体排放减少了 22%
An Effective Plan has Demonstrated Results
有效的计划所展示的成果

Through the SBCP, GWL Realty Advisors’ office properties have:
通过 SBCP，GWL Realty Advisors公司的办公楼物业:

- **decreased** (2007-2014):
  - 23% GHG emissions 减少了 (2007-2014):
  - 23% 的温室气体排放
  - Equivalent to taking 12,060 cars off the road for 1 year 等于在一年内将道路上行使的汽车减少了 12060 辆

- **saved** (2014):
  - 64,000 m³ of water 节省了 (2014):
  - 64,000 立方米的水
  - Equivalent to 26 Olympic-sized 相当于26个奥运会规模的
  - swimming pools 泳池

- **avoided** (since 2013):
  - $390K in water costs 避免了（自 2013）:
  - $390K 万美元用水成本
  - $1.4M in energy costs
  - $1.4M 万美元能源成本