Building Commissioning Qualifications Package

New Building Commissioning & Existing Building Retrocommissioning

Commercial, Industrial, Multifamily, Hospitality, Municipal

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Building Energy Efficiency & Commissioning Qualifications Package

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YADAV Solutions, Inc.

Building Energy Efficiency & Commissioning Qualifications Package

YADAV Solutions, Inc.

We are an energy engineering firm that specializes in ASHRAE Level II and III energy audits. What sets us apart is our rigorous functional testing and measurement of energy before and after the implementation of energy conservation measures.

With over 500 successful compliance submissions, our reputation of never missing a deadline, and never exceeding budget are just a few of the many factors attributing to our widespread success.

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Primary Services List

1. Local Law 87 (Energy Auditing and RCx)
2. New Building Commissioning
3. Property Condition Assessment Reports (PCA/IPNA)
4. MEP Inspections
5. Energy modeling (equest, trane trace 700)
6. IR / Thermal Imaging and analysis

Company Credentials

1. PE – NY, PA, DE, TX
2. DCEP – Data Center Energy Practitioner (Specialist)
3. CEM – Certified Energy Manager
4. BPI – MFBA – Certified Multi-Family Building Analyst
5. CBCP – Certified Building Commissioning Professional
6. CDSM – Certified Demand Side Energy Manager
7. NYC DOB Approved Energy Auditor and RCx Agent
8. NYC DEP Approved Qualified Combustion Tester

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Building Energy Efficiency & Commissioning Qualifications Package

Case Study 1 – Commissioning Project

PROJECT NAME **Leland Gardens – Plainfield NJ**
Project Team Lead: Yadav Solutions, Inc.
MEP Engineer: Magrann Associates

TYPE OF PROJECT

- ☒ Multifamily Existing Building
- ☐ Multifamily New Construction
- ☐ Other, indicate:

PROJECT DATA
Project Start Date: 6/2015
Project Completion Date: 8/2016
Project Cost: $423,719
Units: 256
Floors: 2

PROJECT DESCRIPTION
This property has 65 buildings with 256 apartments in total. Energy auditing and analysis of all HVAC-R systems, lighting and building envelopes were performed on all of the buildings. A sampling was taken of all of the apartments as per the BPI Multifamily Building Analyst guidelines of 10% per unit type such that 26 apartments were surveyed in total. A 22% utility energy savings was achieved.

Thermal Boundary Established (Crawl space, Basement Insulation & Air Sealing Package), Attic Insulation, Lighting Upgrades (to CFLs), Variable Frequency Drives, Low Flow Water Fixtures, DHW Recirculation Controls, Energy Star Refrigerators.

PROJECT FUNDING
Funded in part by the Conifer Development Company and partially by PSEG under the PSEG Residential Multi-family Housing Program.

PROJECT INVOLVEMENT
Lead commissioning agent during all project phases. Chose and led a team of engineers (including myself) through the energy audit process. Worked on the following: Energy modeling, report writing, bid document creation, engineering drawings, contractor selection, construction management, and commissioning process, final assessment and utility monitoring for proof of energy savings (measurement and verification).

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Case Study 2 – Commissioning Project

PROJECT NAME **NCC Roseville – Newark NJ**
Project Team Lead: Yadav Solutions, Inc.
MEP Engineer: Magrann Associates

TYPE OF PROJECT
- ☒ Multifamily Existing Building
- ☐ Multifamily New Construction
- ☐ Other, indicate:

PROJECT DATA
Project Start Date: 3/2016
Project Completion Date: 10/2017
Project Cost $601,790
Units: 100
Floors: 5

PROJECT DESCRIPTION
Energy auditing and analysis of all HVAC-R systems, lighting and building envelopes were performed on all of the buildings. A sampling was taken of all of the apartments as per the BPI Multifamily Building Analyst guidelines of 10% per unit type such that 11 apartments were surveyed in total. A 28% utility energy savings was achieved.

UPGRADES AND SAVINGS
High Efficiency Boiler Plant Upgrade, New Building Energy Management System, High Efficiency Hot Water Heaters, Lighting Upgrades (to LEDs), Variable Frequency Drives, Chilled Water Reset Controls, Low Flow Water Fixtures, Upgrade Fan Coil Motors, Weatherstripping Doors and Seal Penetrations, DHW Recirculation Controls, Vending Machine Controls.

PROJECT FUNDING SOURCE
Funded in part by the New Community Development Company and partially by PSEG under the PSEG Residential Multi-family Housing Program.

PROJECT INVOLVEMENT
Lead engineer and commissioning agent during the entire project. Chose and led a team of engineers (including myself) through the energy audit process. Worked on the following: Energy modeling, report writing, bid document creation, engineering drawings, contractor selection, construction management, and commissioning process, final assessment and utility monitoring for proof of energy savings (measurement and verification).

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Case Study 3 – Commissioning Project

PROJECT NAME **Battery view Towers – Jersey City NJ**
Project Team Lead: Yadav Solutions, Inc.
MEP Engineer: EMG, Corp.

TYPE OF PROJECT
- ☒ Multifamily Existing Building
- ☐ Multifamily New Construction
- ☐ Other, indicate:

PROJECT DATA
Project Start Date: 3/29/2016
Project Completion Date: 7/01/2017
Project Cost: $1,493,000
Units: 412
Floors: 15

PROJECT DESCRIPTION
The property consists of 10 garden style apartments and townhomes and 1 high-rise building (15 Stories) associated with this project. Energy auditing and analysis of all HVAC-R systems, lighting and building envelopes were performed on all of the buildings. A sampling was taken of all of the apartments as per the BPI Multifamily Building Analyst guidelines of 10% per unit type such that 42 apartments were surveyed in total.

UPGRADES AND SAVINGS
High Efficiency Boiler Plant Upgrade, New Building Management System, High Efficiency Hot Water Heaters, On Demand Ventilation Systems, Variable Frequency Drives, Chilled Water Reset Controls, Low Flow Water Fixtures, High E Motor Upgrade, Add Attic Insulation, Night Setback Controls, Recommission Building and Controls Systems. A 32% utility savings were achieved.

PROJECT FUNDING
Funded in part by the Salem Lafayette Associates Management Company and partially by PSEG under the PSEG Residential Multi-family Housing Program.

PROJECT INVOLVEMENT
Performing the energy audits and onsite measurements. Leading the project on site. Interviewing the site staff during and after audits to ensure complete accuracy of systems and inventories. Energy conservation measure creation. Worked on the following: Energy modeling, report writing, bid document creation, engineering drawings, contractor selection, construction management, and commissioning process, final assessment and utility monitoring.

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Case Study 4 – Commissioning Project

PROJECT NAME **Pelham Elementary – New York NY**
Project Team Lead: Brendan Yadav CEM, CBCP
Team Members: Harshank Jani, Drew Ferraro, Matthew Zeigler

TYPE OF PROJECT

- ☐ Multifamily Existing Building
- ☒ Multifamily New Construction
- ☐ Other, indicate:

PROJECT DATA
Project Start Date: 1/29/2018
Expected Project Completion Date: 1/01/2020
Total Project Cost: TBD
Square Footage: 68,470
Floors: 3

PROJECT DESCRIPTION
Entirely new building construction. MEP - High efficiency boiler plant install, new building management system, high efficiency hot water heaters, high e motor upgrade, variable frequency drives, low flow water fixtures, and strategically planned ventilation systems (VAVs). High efficiency lighting featuring LEDs, bilevel switching, motion sensing, photo and daylighting controls. Construction and Architecture - envelope designed with a fully insulated attic walls and basement all up to latest energy and construction codes. High e window glass and insulated doors. The target energy efficiency for this facility after construction is proposed to be 25% better than ASHRAE standards for a school building of this type and size.

PROJECT INVOLVEMENT
Act as Cx agent on behalf of Pelham Elementary project owner's best interest to ensure systems are correctly installed and tested. Actively engage in the startup with mechanical contractors, inspect, test and develop a punch list of equipment deficiencies. Ensure startup and maintenance processes are correct followed and staff is trained in operation of building systems and sequences of operations. Deliverables include design review at 50% CD, owners project requirements, basis of design and commissioning plan preparation. Deficiencies listed in punch list items are corrected and reinspected until approval is reached. Full commission report is completed, finalized and set to the client. All procedures are performed using applicable ASHRAE, NAAB TAB and approved building commissioning standards.

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Building Energy Efficiency & Commissioning Qualifications Package

Case Study 5 – Commissioning Project & Energy Model

PROJECT NAME **204 Avenue A – New York NY**
Project Team Lead: Brendan Yadav CEM, CBCP
Team Members: Harshank Jani, Drew Ferraro, Matthew Zeigler

TYPE OF PROJECT
- ☐ Multifamily Existing Building
- ☒ Multifamily New Construction
- ☐ Other, indicate:

PROJECT DATA
Project Start Date: 10/01/2018
Expected Project Completion Date: 1/01/2020
Total Project Cost: TBD
Square Footage: 144,280
Floors: 7 plus 1 retail 1st floor

PROJECT DESCRIPTION:
204 Avenue A – New York NY is a 144,280 square foot 8 story new build. MEP - High efficiency boiler plant install, new building management system, high efficiency hot water heaters, high e motor upgrade, variable frequency drives, low flow water fixtures, and strategically planned ventilation systems. High efficiency lighting featuring LEDs, bilevel switching, motion sensing, photo and daylighting controls.

PROJECT FUNDING
Funded in part by the Enterprise Green Communities (EGC) urban housing grant program. Energy model must demonstrate that the energy performance of the completed building will be equivalent to ASHRAE 90.1-2010 using an energy model created by a qualified energy services provider.

PROJECT INVOLVEMENT:
Act as Cx agent on behalf of ownership to ensure systems are correctly installed and tested. Actively engage in the startup with mechanical contractors, inspect, test and develop a punch list of equipment deficiencies. Ensure startup and maintenance processes are correct followed and staff is trained in operation of building systems and sequences of operations. Deliverables include design review at 50% CD, owners project requirements, basis of design and commissioning plan preparation. Deficiencies listed in punch list items are corrected and reinspected until approval is reached. Act as qualified technical assistance provider and energy model the building after construction to apply for grant monies through EGC.

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Building Energy Efficiency & Commissioning Qualifications Package

Case Study 6 – Commissioning Project & Energy Model

PROJECT NAME **535 E 12th Street – New York NY**
Project Team Lead: Brendan Yadav CEM, CBCP
Team Members: Harshank Jani, Drew Ferraro, Matthew Zeigler

TYPE OF PROJECT
- ☐ Multifamily Existing Building
- ☒ Multifamily New Construction
- ☐ Other, indicate:

PROJECT DATA:
Project Start Date: 1/29/2018
Expected Project Completion Date: 1/01/2020
Total Project Cost: TBD
Square Footage: 111,477
Floors: 6 stories plus penthouse

PROJECT DESCRIPTION:
535 E 12th Street – New York NY is a 111,477 square foot 7 story new build. MEP - High efficiency boiler plant install, new building management system, high efficiency hot water heaters, high e motor upgrade, variable frequency drives, low flow water fixtures, and strategically planned ventilation systems. High efficiency lighting featuring LEDs, bilevel switching, motion sensing, photo and daylighting controls.

PROJECT FUNDING
Funded in part by the Enterprise Green Communities (EGC) urban housing grant program. Energy model must demonstrate that the energy performance of the completed building will be equivalent to ASHRAE 90.1-2010 using an energy model created by a qualified energy services provider.

PROJECT INVOLVEMENT:
Act as Cx agent on behalf of ownership to ensure systems are correctly installed and tested. Actively engage in the startup with mechanical contractors, inspect, test and develop a punch list of equipment deficiencies. Ensure startup and maintenance processes are correct followed and staff is trained in operation of building systems and sequences of operations. Deliverables include design review at 50% CD, owners project requirements, basis of design and commissioning plan preparation. Deficiencies listed in punch list items are corrected and reinspected until approval is reached. Act as qualified technical assistance provider and energy model the building after construction to apply for grant monies through EGC.

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Building Energy Efficiency & Commissioning Qualifications Package

Case Study 7 – LL87 Project / Energy Model

PROJECT NAME **Saks Fifth Avenue - 611 5th Avenue NYC**
Project Team Lead: Brendan Yadav CEM, CBCP
Team Members: Matthew Zeigler, Drew Ferraro

TYPE OF PROJECT
- ☐ Multifamily Existing Building
- ☐ Multifamily New Construction
- ☒ Commercial Retail / Office

PROJECT DATA
Project Start Date: 8/19/2016
Project Completion Date: 7/01/2017
Square Footage: 1,042,944
Floors: 36

PROJECT DESCRIPTION
611 5th Ave is the main flagship store for Saks Fifth Avenue, it is a large luxury department store located in Midtown Manhattan at 611 5th Ave, New York, NY 10022. The building is a thirty six-story conditioned retail with restaurant and offices. It was built in 1924 with total surface area of approximately 1,042,944 square feet. Energy auditing and analysis of all HVAC-R systems, lighting and building envelopes were performed on all of the buildings. A sampling was taken of all of the common area retail, office and café areas as per the ASHRAE Commercial Energy Auditing Guidelines. If all recommended measures are implemented, this facility will save 28% utility savings the first year following retrofit.

HVAC HIGHLIGHTS
Space cooling is provided from a chiller plant consisting of two (2) x 750-ton centrifugal chillers (chiller # 1 & 2) and one (1) x 450-ton rotary liquid chiller (chiller # 3). Water-side economizer, which couples condenser water directly to the chilled water system through a plate and frame heat exchanger provides low-cost/high efficiency cooling without using the chiller, when outdoor conditions permit. Chilled water is distributed to approximately (58) Variable Air Volume (VAV) Air Handling Units (AHU's) located throughout the building. BMS with GUI controls the building's HVAC systems.

PROJECT INVOLVEMENT
Performing the energy audits and onsite measurements. Leading the project on site. Interviewing the site staff during and after audits to ensure complete accuracy of systems and inventories. Energy conservation measure creation. Working with support staff to gather utility information and to move project to completion. Utility analysis, TREAT modeling, energy conservation measure calculations. Photolog creation and report generation precluding the study.

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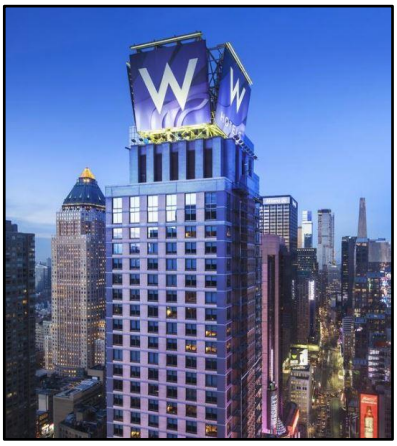
Building Energy Efficiency & Commissioning Qualifications Package

Case Study 8 – LL87 Project

PROJECT NAME **W Hotel – New York, NY**
Project Team Lead: Brendan Yadav CEM, CBCP
Team Members: Matthew Zeigler, Drew Ferraro



TYPE OF PROJECT
- ☐ Multifamily Existing Building
- ☐ Multifamily New Construction
- ☒ Luxury Hotel

PROJECT DATA
Project Start Date: 8/19/2016
Project Completion Date: 7/01/2017
Square Footage: 387,923
Floors: 54

PROJECT DESCRIPTION
The W Hotel located at 1567 Broadway is large luxury hotel located in Times Square. The building uses over $1.9 MM in gas oil and electric utilities per year. It was built in the year 2000 with total surface area of approximately 387,923 square feet. Energy auditing and analysis of all HVAC-R systems, lighting and building envelopes were performed on all of the buildings. A sampling was taken of all of the hotel areas, office and common areas per the ASHRAE Commercial Energy Auditing Guidelines. If all recommended measures are implemented, this facility will save 12% utility savings the first year following retrofit.

HVAC HIGHLIGHTS
The building purchases heating steam from ConEdison, then using primary and secondary heat exchanger heating how water is produced. This hot water is then distributed to several water source heat pumps, AHUs and fan coil units for distribution of heat. Air conditioning in this facility is provided by the owner to all hotel spaces of the building. Two centrifugal chiller units (1,000 tons each) along with cooling towers are used to provide cooling to this facility.

PROJECT INVOLVEMENT
Performing the energy audits and onsite measurements. Leading the project on site. Interviewing the site staff during and after audits to ensure complete accuracy of systems and inventories. Energy conservation measure creation. Working with support staff in corporate office (EMG) to gather utility information and to move project to completion. Utility analysis, TREAT modeling, energy conservation measure calculations. Photolog creation and report generation precluding the study.

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Building Energy Efficiency & Commissioning Qualifications Package

Case Study 9 – LL87 Project / Energy Model

PROJECT NAME **Manhattan Center**
Project Team Lead: Brendan Yadav CEM, CBCP
Team Members: Matthew Zeigler, Drew Ferraro

TYPE OF PROJECT
- ☐ Multifamily Existing Building
- ☐ Multifamily New Construction
- ☒ Commercial Retail / Office

PROJECT DATA
Project Start Date: 8/19/2016
Project Completion Date: 7/01/2017
Square Footage: 149,436
Floors: 9 + sublevel

PROJECT DESCRIPTION
311 W 34th Street performing arts center owned by the Holy Spirit Association and operated by Manhattan Center Studios. It was built in 1906 with total surface area of approximately 149,436 square feet. Energy auditing and analysis of all HVAC-R systems, lighting and building envelopes were performed on all of the buildings. A sampling was taken of all of the common area retail, office and café areas as per the ASHRAE Commercial Energy Auditing Guidelines. If all recommended measures are implemented, this facility will save 16% utility savings the first year following retrofit.

HVAC HIGHLIGHTS
Heating steam is produced by two identical Scotch Marine MEA 173-77-E "Federal" (brand), FST-125 steam boilers manufactured in 1984 equipped with a Preferred instruments lead-lag sequencer selector. The boiler units are 125 BHP (Boiler Horse Power) low pressure steam boilers. The boilers fire predominately on heating oil #4. The firing rate of the boiler is 5,320 MBH. The Hammerstein Ballroom is heated by hot water circulated through a radiant floor. The facility has a large central chilled water and ice storage plant that meets the cooling needs within public event areas and the primary air-handling systems at the adjacent tenant spaces. Cooling is provided by two 400-ton Trane chillers, which produce chilled glycol at 22-25°F.

PROJECT INVOLVEMENT
Performing the energy audits and onsite measurements. Leading the project on site. Interviewing the site staff during and after audits to ensure complete accuracy of systems and inventories. Energy conservation measure creation. Working with corporate office staff to gather utility information and to move project to completion. Utility analysis, TREAT modeling, energy conservation measure calculations. Photolog creation and report generation precluding the study.

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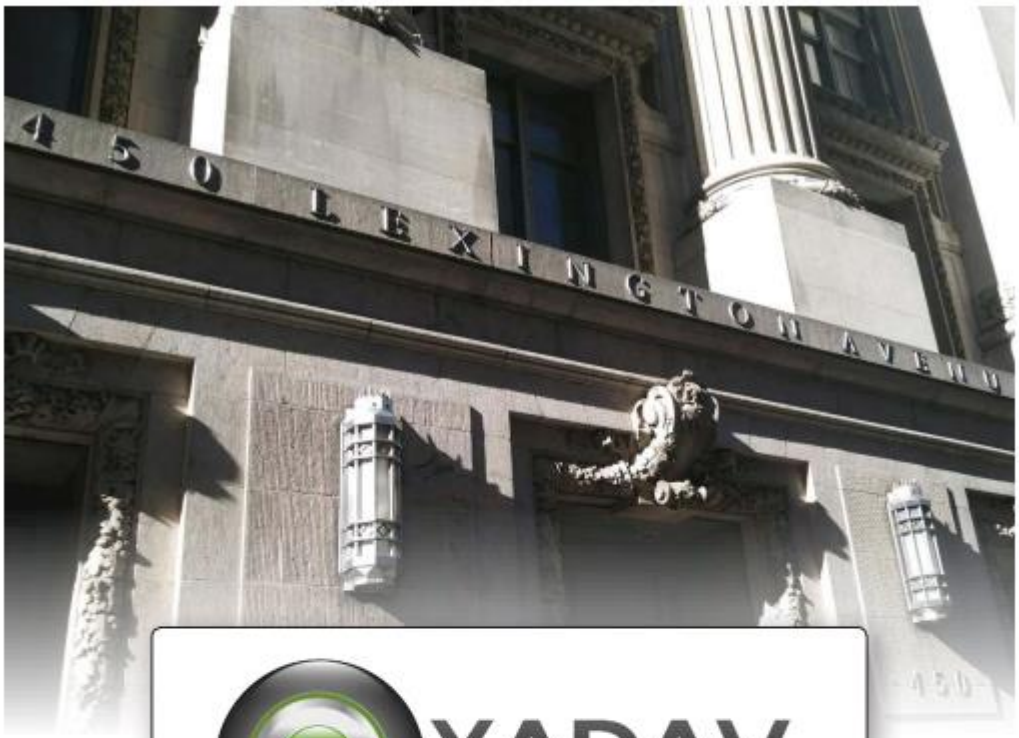

YADAV Solutions, Inc.

'OUR CLIENTS PRIORITIES COME FIRST'

W HOTELS WORLDWIDE

macy's Inc

BMW of Brooklyn

CUSHMAN & WAKEFIELD

Newmark Grubb Knight Frank

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