

SkyFoundry Insider

- SkySpark® Receives More Awards as Deployments Cross ½ Billion sq ft. (Pg 1)
- SkySpark Wins Connected World IoT Innovations Award (pg 2)
- CASE STUDY: Crown Melbourne – Energy & Operational Savings in a Multi-Use Entertainment Complex (pg 3)
- Auto-Discovery of Data from External Systems (pg 4)
- CASE STUDY: Crown Melbourne continued (pg 5-6)
- Project Haystack adds Associate Membership Level & New Members (pg 7)
- SkySpark 3.0 is Coming !!! (pg 8)

SkySpark® Receives More Awards and Industry Recognition as Deployments Exceed ½ Billion sq ft

SkyFoundry has been honored to receive numerous industry awards for SkySpark. The latest from Connected World (see page 2) adds to a range of past awards including:

- Realcomm “Digie” Award – Best New Building Automation Technology - 2011
- Winner IBM SmartCamp North America - 2012
- Richmond Chamber of Commerce IMPACT Award for Innovation - 2013
- GSALink Project (using SkySpark) Wins FedScoop 50 Award - 2014
- SkyFoundry Named “Cool Vendor” in Information Innovation by Gartner - 2014
- SkyFoundry wins ControlTrends Building Analytic Software - 2014

The most important recognition, however, is the success our customers have in generating savings and improved operations by deploying SkySpark across their facilities and equipment systems. Today, SkySpark is deployed across over ½ Billion square feet in facilities of all types, on 6 continents.

In This Issue

SkySpark Wins Connected World IoT Innovations Award



Pg 2

**CASE STUDY:
Crown Melbourne -
Energy and Operational
Savings In Multi-Use
Entertainment Complex**



Page 3, 5

**What's Next - SkySpark
3.0 is Coming !!!**

3.0

Pg 8

SkySpark Is a Winner of the Connected World IoT Innovations Award for 2015

SkyFoundry is excited to announce that SkySpark has been selected as one of the 26 winners chosen for the Connected World IoT Innovations Award for Summer 2015.



IoT (Internet of Things) products were judged by an editorial panel representing a cross section of the industry. Both business and consumer IoT products were submitted for judging. Winning products are selected based on a variety of criteria, including most creative and technologically advanced products, services, and platforms. SkyFoundry is honored that SkySpark was recognized with this prestigious award.

You can read the Connected World press release at: <http://connectedworld.com/connected-world-magazine-announces-iot-innovations-winners/>

About Connected World: Connected World is the business and technology publication that provides the intelligence industry titans need and the guidance consumers crave. It's all about M2M.

As a follow up to the award, SkyFoundry's John Petze was interviewed on the Peggy Smedley show. John's interview can be found here: <http://filesource.abacast.com/wsradio/m2mradio/052615/segment2052615.mp3>

Peggy is an internationally known speaker and highly respected personality in the media world, educating businesses and consumers on the latest technological advances shaping everyday lives. As an outspoken advocate and supporter of connected devices and M2M technology, her show has become the voice of M2M and connected devices.



The show is broadcast live each Tuesday from 12 p.m. - 1 p.m. CT on the Connected World Network, owned by Specialty Publishing Co., and a member of the World Syndicated Radio Network (wsRadio).

You can follow the latest news for the Internet of Things at <http://connectedworld.com/>

CASE STUDY: Crown Melbourne –

Energy and Operational Savings Across a Multi - Use Entertainment Complex



Crown Casino and Entertainment Complex is a large casino and entertainment precinct located on the south bank of the Yarra River, in Melbourne, Australia.

Originally built in 1997 the operations team identified that the complex had a huge potential for energy use reduction. An energy efficiency program was started in 2010 to achieve savings. SkySpark was implemented as part of a Building Optimisation System (BOS) program across the facility.

First Some Stats on the Crown Melbourne Entertainment Complex

- 536,000 square meters (5,769,000 square feet of space)
- 3 hotels, 1604 rooms
- 58 restaurants and bars
- 65 commercial tenants
- Conference & event spaces
- 17 million visitors a year
- 6,500 staff
- 1,500 contractors
- 24-7 operation
- 88 million kWh Electricity (equivalent of 11,000 homes)
- 500,000 GJ Gas (equivalent of 23,000 homes)
- 120,000t Carbon Emissions (173rd largest consumer on the NGERs list -
- National Greenhouse and Energy Reporting Scheme)



Con't on Pg 5

Auto-Discovery of Data from External Systems

SkySpark leads the way across diverse systems, devices and protocols

It's a simple fact that without data there can be no analytics. The first step in any analytics project is to identify the source(s) of data, the location of the data, the communication methods and protocols used to access the data, and security and other requirements to gain access. These factors can vary greatly across projects so assessment is an essential first step.

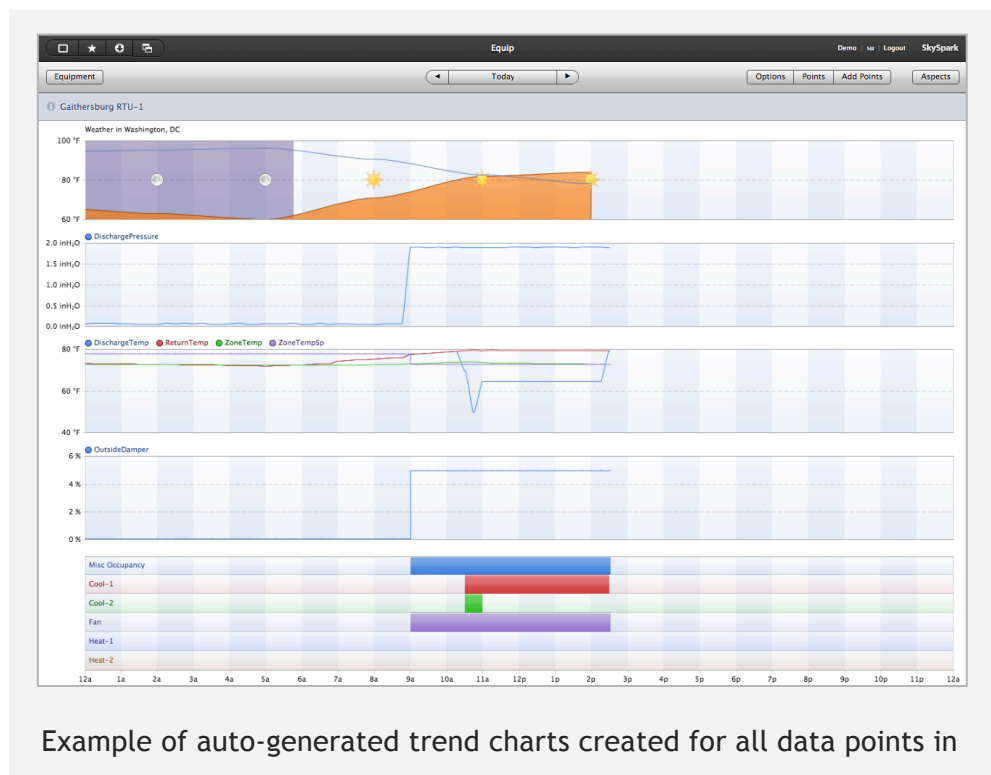
Once connected SkySpark provides a wide range of tools and built-in functions to automatically:

- "Learn" external systems (based on learn functionality supported by the protocol)
- Map the data into the SkySpark Folio database
- Automatically create trend charts for all discovered data

And all of this before a single analytic rule is written!

The auto-generated trend charts provide operators with clear insight into how their systems are really operating – and because they are automatically generated, operators get this insight without ever needing to create or assemble custom graphics to see their data.

SkySpark provides auto-learn and discovery for BACnet IP, oBix, Haystack and Sedona, protocols. Training materials, videos and application notes show how to connect and "learn" these external systems.



Automated import of data can also be accomplished by querying data from SQL databases and other sources such as csv and text files. In these cases preparation work is required to assess the naming convention used in the source data and "map" that to the appropriate Haystack tags. With this step in place, though, source data can be automatically mapped into the SkySpark database.

And once data is available, you can move on to activate basic analytic rules to identify common operational issues to automatically **"Find What Matters™"**.

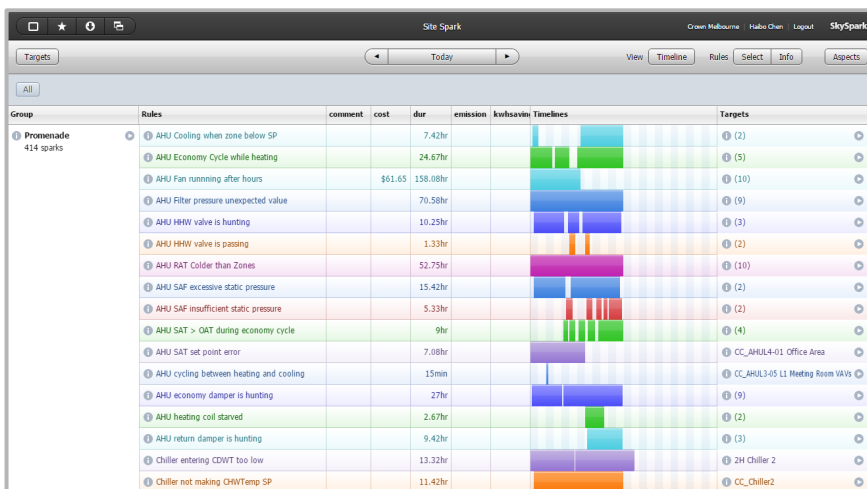
CASE STUDY:

Crown Melbourne – The Analytic Results

Con't from pg 2

The SkySpark system was implemented by BUENO Systems. Initial rules were deployed to detect common system faults including:

- Heating and chilled water valves not closing or failed
- Valves hunting
- Failed dampers
- VAV box failures/ issues
- Central plant short cycling
- Pumps/ fans hunting
- Temperature set points not being achieved
- Equipment left in manual override mode
- Invalid Occupancy readings from room control sensors

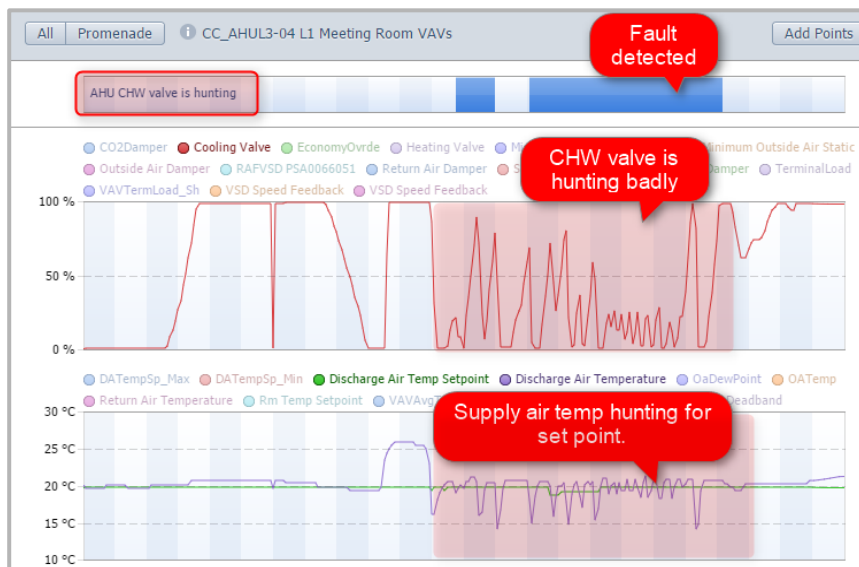


The Spark Results

And the results? All the faults expected and more!

Currently more than 150 SkySpark rule algorithms are active across the facility. Approximately 350 Sparks active at any one time.

Implementation of additional rule algorithms is planned based on results to date and the input of the Crown operations team and BUENO Systems, the SkyFoundry partner that implemented the project. *Analytics is a journey!*



Hunting Chilled Water Valves (Indicates that the control loop is not properly tuned affecting both comfort and energy use)

But don't stop reading here, check page 6 to see the financial results →

Con't on Pg 6

CASE STUDY: Crown Melbourne – the Financial Results

Electricity Savings

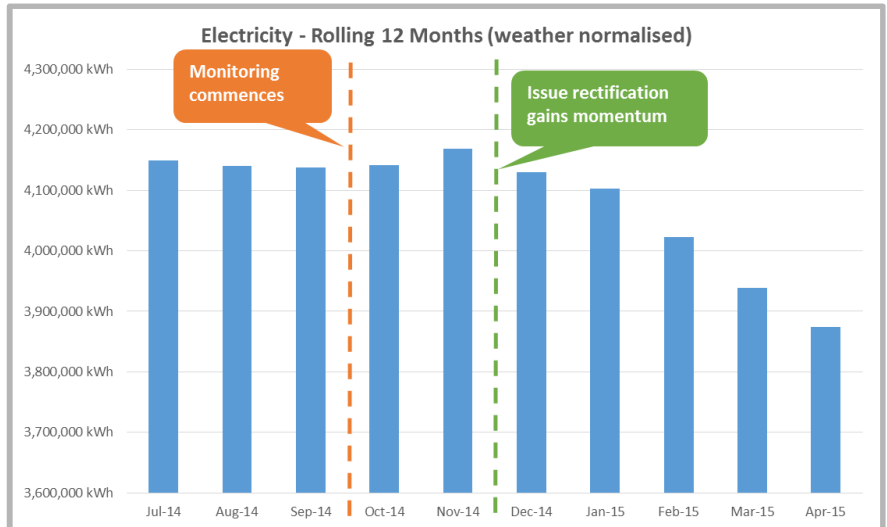
6% reduction in HVAC electrical consumption to date
(with 10-15% expected by year end)

Savings accomplished by systems tuning and OPEX work only!

Nat. Gas Savings

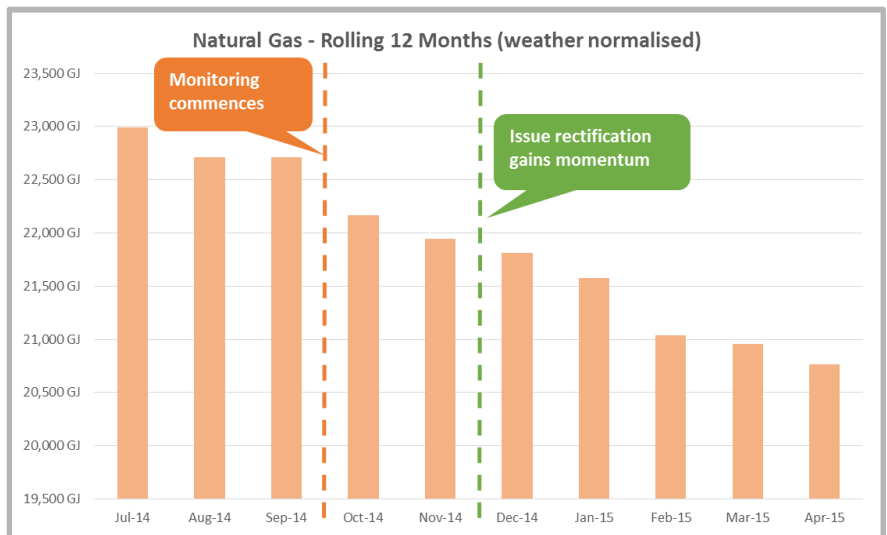
9% reduction in HVAC gas consumption
(with 15-20% expected by year end)

And all of this accomplished with system tuning and OPEX work only!



The Way Forward

- **All buildings will have the BOS !!!**
- Continue to add new rule algorithms
- Roll-out analytics to the remainder of Melbourne and Perth facilities adding >5 Million additional sq ft (>450,000 sq m) and >65,000 additional points!
- Integrated Warranty Corrections and Building Tuning
- Expand analytics to other services – water, lighting, lifts & escalators
- Automation of fault-rectification – maintenance system integration
- Continuously improve, innovate and stay ahead



Read the full Case Study here:

<http://www.skyfoundry.com/file/136/Case-Study-Crown-Melbourne---Driving-Savings-in-an-Entertainment-Complex.pdf>

SkyFoundry would like to thank Crown and BUENO Systems for this case study



Project Haystack adds Associate Membership Level and New Members



One of the exciting announcements to come out of the Haystack Connect event was the establishment of a new Associate membership level in the Haystack organization. Three organizations were quick to add their support by joining as Associate members:

- BUENO Systems, the Australian leader in data and information driven operational property services. BUENO delivers superior data related and technology driven services based on fault detection, optimization and business intelligence that simplify their clients operations and enhance their effectiveness across all building sectors and building information systems.
- Grosvenor Engineering Group a leading Australian provider of intelligent hard technical services, design and construction solutions delivered via a unique data driven approach to asset maintenance and life cycle management. The ultimate aim is to add value to buildings by making them safer, comfortable, and more productive and energy efficient at the lowest cost possible.
- Intelligent Buildings, LLC, a nationally recognized smart real estate advisory services company providing planning and implementation of next generation strategy for new buildings, existing portfolios and smart communities. Their work includes "The Smartest Building in America", the largest energy analytics project in North America, the smart buildings standards for the U.S. and Canadian governments, conception and management of a Clinton Global Initiative and the recently released Intelligent Buildings CyberSafe services.

These new companies join the Haystack founding member companies: Airmaster, J2 Innovations, Lynxspring, Siemens, SkyFoundry, Wattstopper and Yardi/Enerliance.

Since its formation in March of 2011, The Project-Haystack organization (a 501C non-profit trade association) has grown tremendously providing the industry with an open-source, collaborative environment where people work together to address the challenge of utilizing semantic modeling (also known as tagging) to make data self-describing thereby streamlining the interchange of data among software applications. The community has developed a flexible, extensible, data modeling approach and standard models for common equipment systems. The standard includes detailed documentation describing the data modeling techniques, significant libraries of consensus approved equipment models, and software reference implementations to easily enable software applications to consume smart device data that is "marked up" with Project-Haystack data descriptions.

For information on becoming a supporting member of Project Haystack visit: <http://project-haystack.org/about>

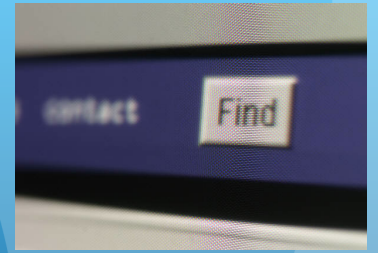


SkySpark® - Analytics for a World of Smart Devices

The past decade has seen dramatic advances in automation systems and smart devices. From IP connected systems to support for web services and xml data schemas, it is now possible to get the data produced by the wide range of systems and devices found in today's buildings and equipment systems.

Access to this data opens up new opportunities for the creation of value-added services to reduce energy consumption and cost, and to identify opportunities to enhance overall facility operations.

Access to the data is just the first step in that journey, however. The new challenge is how to manage and derive value from the exploding amount of data available from these smart and connected devices. *SkySpark directly addresses this challenge.*



The new frontier is to efficiently manage and analyze data to *find what matters.*

SkySpark 3.0 is Coming!

The next issue of the SkyFoundry Insider will preview the exciting release of SkySpark 3.0. Two years after the release of SkySpark 2.0, SkyFoundry will again set the bar in analytics software with major new features and capabilities – based on the input received from deployment across over 9000 buildings around the world.

The September issue will provide details on SkySpark 3.0 as we prepare to launch at our fall partner meetings, but here are a few teasers ☺

- A rate Modeler App will allow you to build complex energy tariff rates and attach them to meters and Sparks to calculate costs based on those rates. *(psst... Its out in trials already with great results !!!)*
- All new, flexible visualization apps that let users easily combine virtually any type of data in custom "multi-views". Imagine combining Sparks, energy charts and equipment operation data the way you want -- all without writing or using external applications. This advance in visualization technology truly changes the game – stay tuned!
- The charting package has been rewritten from the ground up to improve performance, add new chart types, and provide more fine grained control of data presentation.
- New historian features will provide much greater flexibility for managing data quality. The new NA value can be used to annotate timestamps with invalid data, and the new historian audit feature will let you log why data values are invalid or when manual changes are made sporting applications that require tracking of "data integrity".
- *Those are just a few previews – watch for major announcements on 3.0 in September!*

3.0

