

Oracle Spatial Summit

2015



Oracle Business Intelligence
Warehousing and Analytics Summit

Oracle HQ Conference Center
Redwood City, California

Seeing is Believing in Real Estate

Using Oracle Spatial and Graph and Oracle FMW MapViewer to Bring Space Data to Life

Stacey Bertolet, Director Real Estate Technologies
Gina O'Dierno, Developer Real Estate Technologies

Seeing is Believing in Real Estate

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Executive Overview

Why CFOs and CIO/CTOs Should Care About Real Estate Solutions

- Every business has occupancy expenses, and those expenses typically make up a large part of the business' overall operating budget
- There are obvious financial benefits derived from being able to right-size a company's real estate portfolio
- Space planners are being asked to analyze data and present a story to management that is not well represented by tabular data
- Without the correct tools, that means they are either not getting the job done, or are wasting their valuable time trying to save big dollars for their companies
- How many people could make decisions on costly home improvements or “sell” those decisions to a partner without annotated drawings?

Executive Overview

Oracle's Real Estate & Facilities Organization



Supports nearly 130,000 employees & contractors in over 20 million rentable square feet globally

\$1B

Manages a \$1 billion real estate operating budget to accommodate Oracle's business needs



Manages related space and assignment data through Oracle Property Manager (PN) integrated with Oracle Human Resources (HR) data



Makes facility decisions with significant long-term financial impact based on a variety of data.

The Challenge

Oracle's Real Estate & Facilities Organization

- Need to **visualize** space configurations & assignments at a given location (space/floor):
 - Plan moves, reconfigurations and closures
 - Verify assignments/cost center allocations
 - Verify employee & contractor information
 - Assess adjacencies
 - Identify vacancies
 - Validate utilization & capacity
- The **data** comes **from multiple sources**:
 - Property Manager (PN) for location and assignment information
 - HR data for people information
 - CAD drawings for the floor maps and layout
 - Any other relevant data source that can be tied to a location or space
- Replace a legacy application providing graphical reporting for 7 countries **with an Oracle tech stack that supports all 627 global locations**
 - Continue providing key reporting features
 - Decrease support and maintenance
 - Replace tedious hand-colored/themed floor maps
 - Enable auditing of space and CAD Drawing data

The Challenge – Tedious Hand Colored/Themed Floor Maps

- Manager 1
- Manager 2
- Manager 3
- Manager 4
- Manager 5
- Manager 6
- Manager 7
- Manager 8
- Manager 9
- Manager 10
- Manager 11
- Manager 12
- Manager 13
- Vacant Space

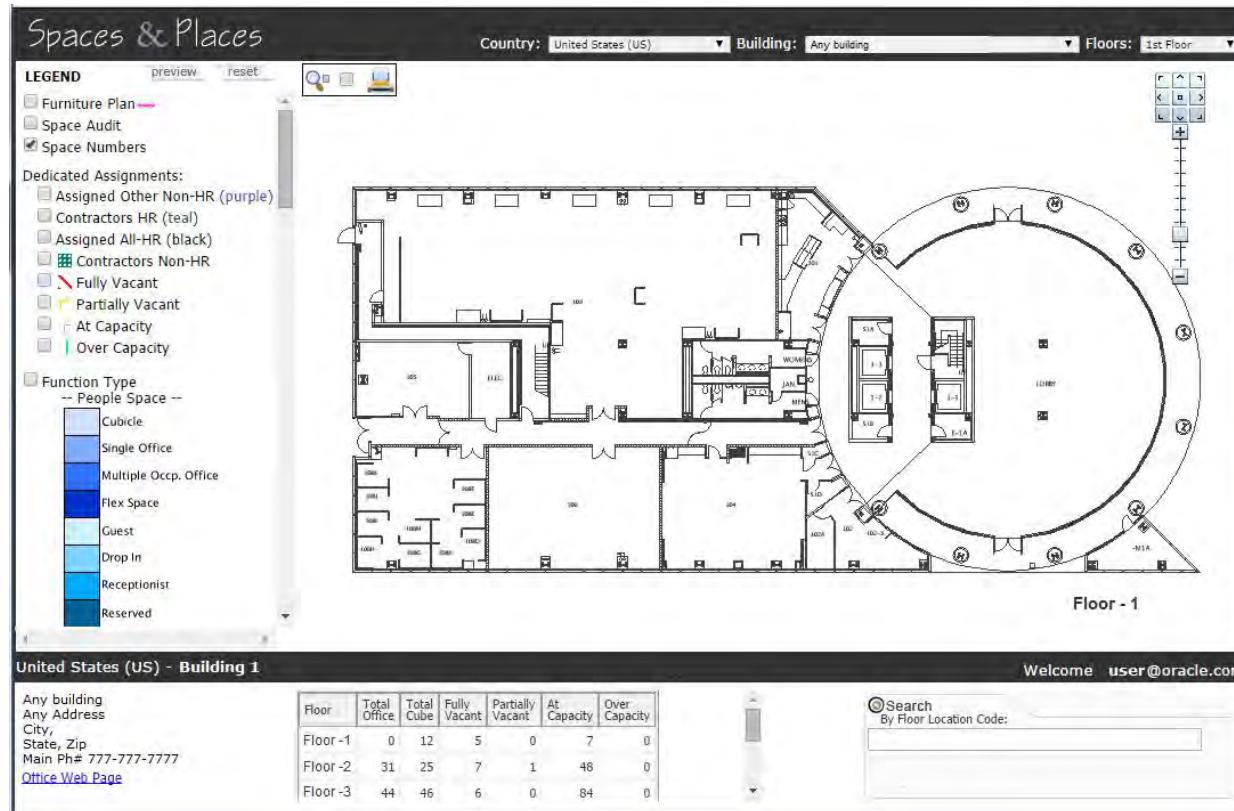


To uncover a useful chunk of vacancies and to allow groups to work together efficiently, our Planning organization would have to do the following:

- Print out a PDF floor plan
- Devise a color or symbol-based key for 1 or more management levels
- Run tabular reports to determine assignments in each space on the floor and to which managers they report
- Color/Theme each space by hand or with a paint tool

The Solution

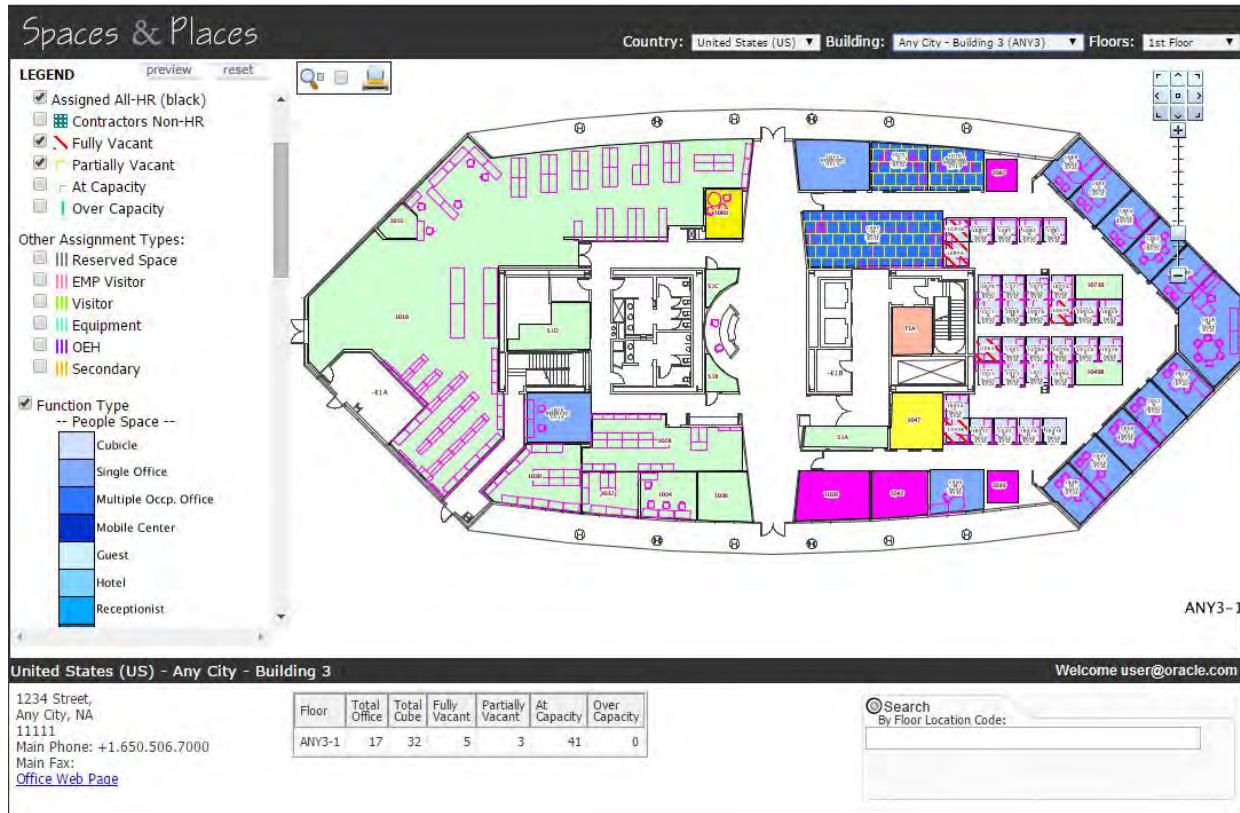
“Spaces & Places” for Oracle Real Estate & Facilities (RE&F)



The Oracle Spatial and Graph and FMW MapViewer teams had what RE&F thought was the best technology within Oracle for accomplishing our graphical reporting goals to:

- Store CAD floor drawings as Spatial data
- Provide web based floor maps
- Overlay floor maps with reportable data for each space

The Solution “Spaces & Places”



The following text and color/pattern theme layers now provide graphical reporting for 627 buildings and 1,481 floors worldwide:

- Furniture (desks, chairs)
- Space Audit (area, type, function)
- Space Numbers (for each assignable space)
- Person & Non-Person Assignments
- Line of Business - Cost Centers
- Function Type (conference room, etc.)

Benefits of Visualizing Data

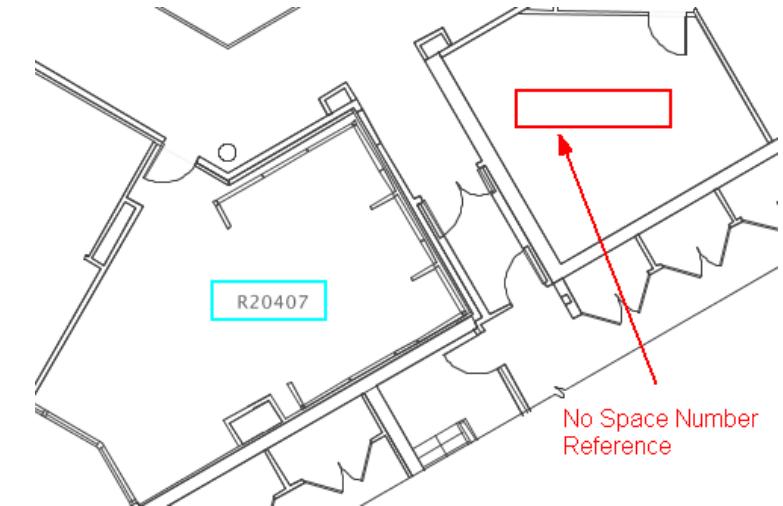
The good, the bad, the missing



Data Integrity: See where assignments or vacancies are incorrect



Planning: Identify adjacency problems or opportunities



Drawing Integrity: Observe missing or incorrect data in the floor map to identify issues in source drawing

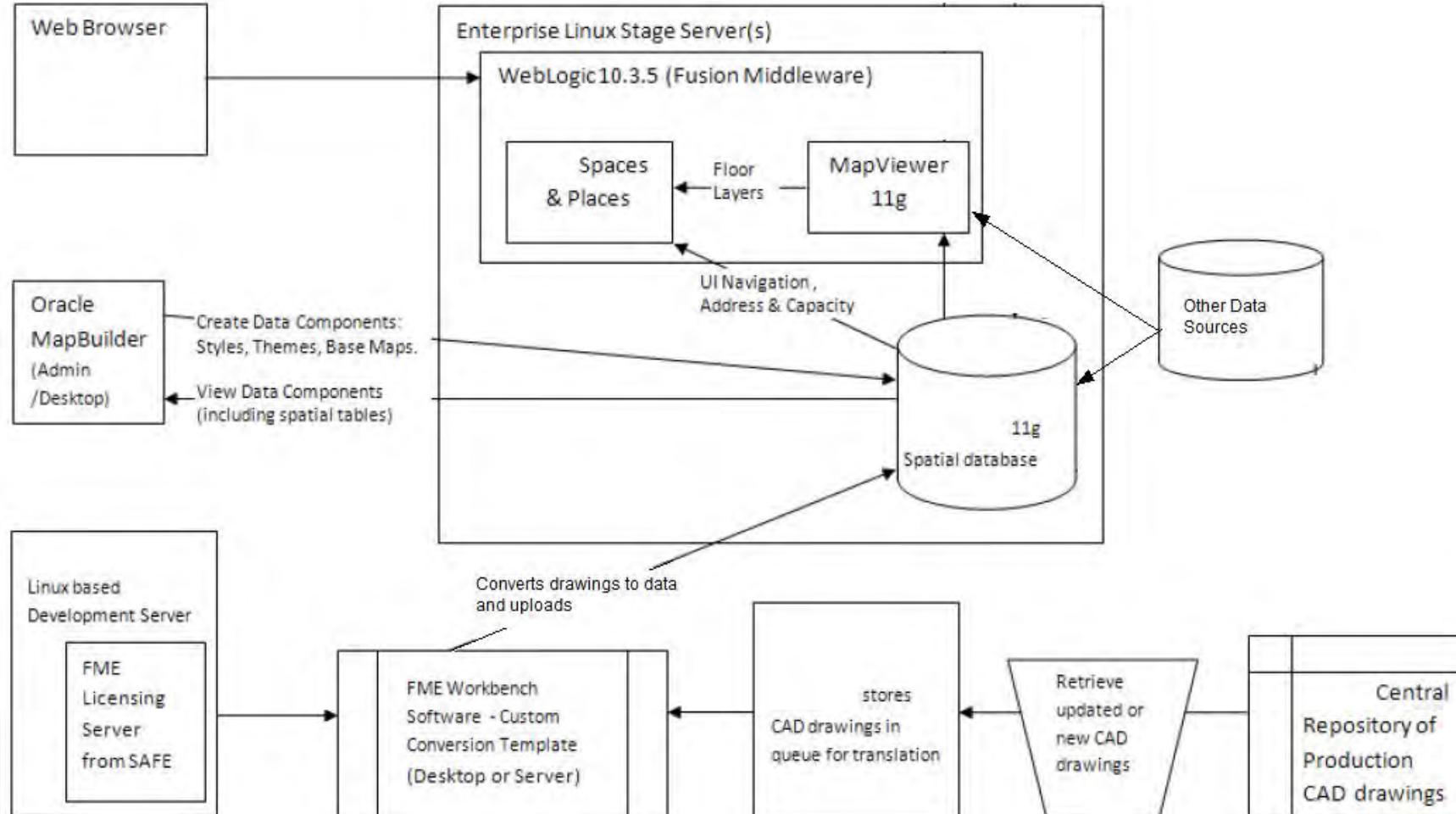
Live Demo

“Spaces & Places” solution

How Oracle Spatial and Graph made it possible “Spaces & Places”

- We worked with the Oracle FMW MapViewer team and Steve Pierce from Think Huddle, LLC, to:
 - Create dynamic map tiles to render the floor maps in a local coordinate system in Sq Feet and Sq Meters
 - Create dynamic jdbc theme layers against multiple sources of data
 - Customize drawing data translation using Safe Software’s FME product
- Oracle Spatial and Graph played critical part in our drawing data storage and query strategies

How Oracle Spatial and Graph made it possible



Future Plans

- Functionality
 - Add the ability to push information to source systems (for example Moves, Adds, Changes (MAC) and scenario planning functionality)
 - Security policy issue, not technical issue
 - Expand to meet the needs of facilities personnel and internal Oracle employees
- Upgrade to HTML5 API on 12c
 - Dramatically increase data & UI performance
 - Add interactive and specialized reporting features down to the space level

Addendum

Oracle Real Estate & Facilities “Spaces & Places”



OVERVIEW

- RE&F supports nearly 130,000 employees & contractors in over 20 million rentable square feet globally
- Manages a \$1 billion real estate operating budget to accommodate Oracle's occupancy needs
- Makes facility decisions with significant long-term financial impact, and manages space and assignment data for 627 global locations

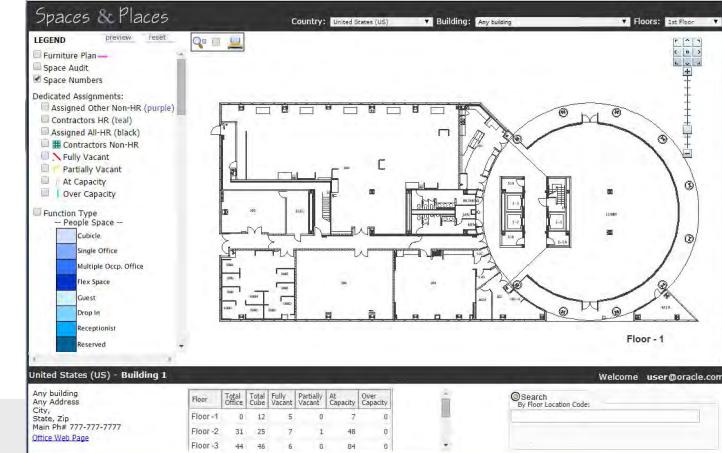
CHALLENGES / OPPORTUNITIES

- Need to store & utilize CAD drawings as spatial data
- Floor map based display (local coordinate system)
- Detailed Reporting: Visualize space, plan moves, verify assignments and employee/contractor info, assess adjacencies, identify vacancies, validate utilization & capacity
- Integrate multiple data sets: Data integrity & accuracy



SOLUTIONS

- Oracle Database 11g Enterprise Edition w/Spatial Option
- Oracle Fusion Middleware 11.1.1.7
 - MapViewer (JavaScript API)
- FME by Safe Software (ETL)



RESULTS

- Oracle based solution for all 627 global locations
- Provides opportunity to right-size portfolio and drive occupancy costs down by millions of dollars a year
- Decreased support and maintenance by 72%
- Significantly improves organization's ability to perform:
 - Move Request Evaluation
 - Proactive Space Planning
- Enables collaboration with cost center managers to drive down their cost of occupancy
- Drove significant improvements in data and drawing quality

Speaker Bio

Stacey Bertolet – Director, Real Estate Technologies

- Stacey joined Oracle Corporation in 1994 to manage HQ facilities. At the time, those responsibilities included space planning, small project management, furniture management, and overseeing the property managers for owned and leased buildings. In 1999, she was asked to head up a new group within US Real Estate called Real Estate Technologies (RETech), reporting to the VP of Real Estate & Facilities (RE&F). From a start of one employee and a scope of improving USRE's web presence, the group has become global in scope and grown to 10 employees consisting of software engineers and project managers. RETech, now part of Global Real Estate Operations within the global RE&F organization, plans the implementations of Oracle Applications and develops and supports custom applications to serve the RE&F or Oracle internal employee bases.
- Stacey received her Bachelor's degree in Italian Language and Literature from Stanford University. Prior to joining Oracle, Stacey held a real estate broker's license and worked for various national firms doing commercial construction and permanent lending, development, leasing, construction management, and property management.
- In her spare time Stacey enjoys watching her husband coach women's volleyball, hiking, playing sand volleyball, traveling, and watching her four children turn into responsible adults.

Speaker Bio

Gina O'Dierno – Developer, Real Estate Technologies

- Gina joined Oracle Corporation as an Information coordinator in 1998 to allow her time to write her first science fiction novel. Soon after she created a web site for the Portland office to provide information on available services and frequently asked questions that quickly turned into a full-time job designing and maintaining office web sites across the globe for Real Estate & Facilities. Gina is now an application developer, Property Manager data specialist, and space planning solutions development lead whose expertise is in providing interactive graphical reporting.
- Gina has been creating graphics, and designing advertising layouts since attending University of Oregon for her BA in Journalism. Prior to joining Oracle, Gina also worked for various global firms as a technical support rep, marketing coordinator, and hardware sales & account rep.

Technology Stack for Spaces & Places

Product	Version
Oracle Linux	OEL 5.8
Oracle Application Server	11.1.1.6
Oracle WebLogic Server	10.3.5
Oracle Spatial & Graph	11.2.0.3.5
Oracle FMW MapViewer JavaScript API	11_1_1_7_B121003
Oracle JDeveloper	11.1.2.1
JavaServer Pages	N/A

Note: FME by Safe Software is used as ETL to translate CAD Drawings into Spatial data, which is then populated in MapViewer theme layers on floor maps.

Spaces & Places - Layout

Legend (w/print preview and reset)

Print Preview PDF Tool

Marquee Zoom Tool

Country, Building, and Floor navigation

Home/Reset button

Pan & Zoom Tools

Floor Capacity Report

Building Information and resource links

Floor Map Search

United States (US) - Building 1

Any building
Any Address
City,
State, Zip
Main Ph# 777-777-7777
[Office Web Page](#)

Floor	Total Office	Total Cube	Fully Vacant	Partially Vacant	At Capacity	Over Capacity
Floor -1	0	12	5	0	7	0
Floor -2	31	25	7	1	48	0
Floor -3	44	46	6	0	84	0

Welcome user@oracle.com

Search By Floor Location Code:

Floor Capacity Report

Floor Map Search