VIEWPOINT

Cresa GIS

Revealing insights in commercial real estate through geospatial analysis

During the COVID pandemic, in-person site visits and local tours became much less common. But on a larger scale, the pandemic created extensive changes to how and where we work. As a result, many companies are taking a closer look at their real estate needs, while also evaluating where and how their employees work. The use of data points to help make informed business and real estate decisions has skyrocketed, with more weight placed on digital content and deliverables that help companies envision their future. One way companies have come to organize and address their data needs is through the adoption of Geographic Information Systems (GIS). Rooted in the science of geography, or "the science of where," GIS are frameworks for gathering, manipulating, analyzing, and visualizing data. In the real estate world, GIS are tremendous tools for providing insightful data that can push the industry forward.

Please note: All map examples shown within this whitepaper are for illustrative purposes only and may not reflect current market information.



What is GIS?

GIS Through History

What Can it Do?

GIS and Real Estate:

- 1. Site Selection
- 2. Commute Impact and Labor Studies
- 3. Land Sale Data
- 4. Visual Communication
- 5. Information Accessibility



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What is GIS?

At their core, GIS combine geographical features with non-geographical tabular data and transform this information into visualizations that map and assess real-world problems. GIS allow users to see business data like sales and locations on a map juxtaposed against demographic information, hydrography, parcel data and more. In the current climate, they have seen a significant boost in popularity. Governments like Massachusetts jumped on GIS early to amass an impressive collection of data in formats like the Massachusetts Interactive Property Map and MassOliver. During the pandemic, Johns Hopkins University used GIS to give an intuitive understanding of data that excel sheets would otherwise hide.

GIS Through History

Going back to the 1854 Cholera epidemic in London, it was through the use of spatial distribution mapping that physician John Snow was able to <u>highlight a root of disease transmission</u>. He identified a cluster of deaths around Soho's Broad Street Pump and commissioned a map of the data from Charles Cheffin to support his hypothesis that disease transmission was waterborne (check out a 21st century interactive version of the map <u>here</u>). This paved the way for GIS to be considered a key tool for companies to identify and address the unique needs of customer groups around the world.

What Can it Do?

GIS can be used to identify problems, monitor land changes, forecast patterns, and much more. It can highlight problems driven by geography, such as increased crime in areas where mental health care facilities have closed, or in mapping the <u>opioid</u> <u>epidemic</u>. They can also be used to monitor land changes, in the case of companies like <u>Clark Labs</u>, which developed GIS software to help evaluate the environment's sensitivity to human-influenced change. Companies ranging from <u>Amazon to Walmart</u> leverage GIS successfully to optimize their business operations.



GIS and Real Estate

Several major players in the real estate industry leverage GIS to find greater insights and take their service offerings to the next level. ESRI, Mapbox, Landvision, and opensource platforms like QGIS provide mapping and analytic solutions for professionals seeking geospatial insights, demonstrating the vital role of data in the industry.



An advantage of mapping is that you can change the

underlying imagery to provide different perspectives.

This map is an examination of opportunities and

developments in Boston's Seaport neighborhood:

There are five key real estate practices for which GIS have proven to be a game-changer:



1: Site Selection

It's no secret that real estate is all about location and GIS are essential for locating properties in a fast and uncomplicated manner. Advisors and account teams can find and visualize up-todate information on available market opportunities fitting the suitability of clients' needs, searching by various criteria such as pricepoints, vacancy, or proximity to necessary resources.

Here is an example of how mapping can provide a quick overview of property vacancy in an area, with additional pertinent data included for ease of review.











An organization's most important asset is its people. Understanding the labor strategy, growth projections, and how site selection and design will impact existing and future talent is critical to the success of any real estate transaction. GIS spatial analysis tools provide the ability to perform network and suitability analyses, providing in-depth site profiling of employee accessibility and the area's utility to business operations.

This example uses spatial analysis to simulate a site relocation and the resulting impact on the commute times of employees in Mississauga, Canada.



GIS can assist in identifying areas that meet clients' labor needs. In this map, drive time areas using traffic data were overlaid with demographic variables to show the availability of labor surrounding the sites of interest.

Labor Pool Comparison

Job Type:		Workers Within 60-Minutes of Naugatuck, CT	Workers Within 60-Minutes of Danbury, CT	Workers Within 60-Minutes of Fishkill, NY
	Packer	22,526	23,447	15,139
Î.∐	Material Handler	20,980	20,913	13,337
L	Lift Truck Operator	2,550	2,346	1,627
ø	Mechanic	2,954	2,960	1,872
6	Delivery Truck Driver	18,970	18,591	11,505
SEE .	Sales Worker and Route Handler	13,024	14,571	9,887
	Total	81,004	82,828	53,367





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3: Land Sale Data

GIS have been used by various governments to publish land parcel information and county assessor data for years now. This allows for easier searching based on specifics that are outside traditional search terms. For instance, LandVision aggregates this data into a tool for advisors to identify a given parcel of land's property value, acreage, sale date, owner information, and more.



4: Visual Communication

Sometimes it's most important to see something to really comprehend it. Through the use of maps that visualize data like costs related to travel and employee location, GIS improve communications for real estate advisors, their clients, internal stakeholders and team members. Insights that may have been hidden deep in spreadsheets can become clear when presented visually, and mapping is an impactful way to show critical data and takeaways.

This map allows for simultaneous communication of three things: the relative geography of Boston and outlying suburbs; Class A and B submarket rent ranges by square foot; and the local public transportation routes.

Boston Rent Ranges





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5: Information Accessibility

Finally, mobile-enabled web map applications and virtual tours allow for quick surveys of areas when clients are unable to see a location in-person. This has been a significant tool during the pandemic, as people were less able to travel to location at a moment's notice. GIS also allow for the layering of data, such as demographic information and crime statistics, providing all the information that is needed for decision-makers in a format that allows easy comparison and contrast. Having this information at your fingertips has proven to be an essential asset for those in the real estate industry who are constantly on the go, and need solid, trustworthy information guickly.

If you're interested in seeing how data can improve solutions for your organization, don't hesitate to reach out to Cresa's seasoned team of analysts. We have the expertise to utilize the latest technology and platforms to find vital insights and solutions that can help your company make informed business and real estate decisions.



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About Cresa Boston

Cresa is the world's largest commercial real estate advisory firm that exclusively represents occupiers and specializes in the delivery of fully integrated real estate solutions. We work with our clients to align their business plans and their real estate needs, increase their productivity, and consistently save them money - results that have earned us numerous industry awards along the way. Our team of real estate advisors, project managers, strategic planners, analysts, and space planners listen to tenants' needs, meticulously research market conditions, firmly negotiate terms, and manage the design and construction of projects to customize the best possible occupancy solutions.

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