Using location-related knowledge to maintain a historic residence
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1. Starting with traditional museum databases

Historic buildings are firstly represented by how they look, secondly by where they are located. The correct and exact name starts to be a problem, and the exact address seems to be even bigger one. The same problem concerns the exact names of interiors, as they have their official names, historic names, popular names - all in use. Asking a traditional database for any information is difficult without knowing numbers or exact names. In addition, historic buildings often make a shelter to historic collections. It is worth noting now that a typical museum inventory database consists of isolated inventory cards that represent real museum objects, with their given numbers, basic information such as title, date, author, material, size, more or less detailed notation about the state of preservation, and a photo for visual identification. On the other hand, a typical historical residency database consists of several, isolated maps and architectural plans, preferably in form of scanned drawings saved in form of TIF or PDF files, or preferably of CAD files. In addition, a typical restoration department database, which contains all information on the state of preservation of all the historic objects and finished conservation works represents another set of isolated paper or digital documents. All the said databases are usually isolated and used by completely different staff: art historians, technicians and restorers. It is useful to combine said databases, and create a new spatial database containing data related to all aspects of the property. All data is strictly location-related. This allows to integrate all data coming from few existing museum’s databases, which are usually isolated and used by completely different staff: art historians, technicians, restorers or guards.

2. Finding GIS as a good reflection of reality

Setting data in Geographical Information System (GIS) software environment is essential here. The GIS enables archiving all data in an easily accessible 2-dimensions matrix rather than as lists. This kind of database is widely known, both in academia and business (used by authorities to administer land, or managers of commercial marketing), as well as in everyday popular use by almost everyone (represented by many "finders" working as simple viewers, including Google Maps or Google Earth). Access to data is run mainly by context, intuition and familiarity with reciprocal spatial relations between objects, as it is in reality, not by knowledge of thousands of exact names and complicated codes. Most of tabular data can be represented here by graphic (symbols, colours) codes. Moving a cursor and clicking it is like walking and pointing or touching real objects. They can be viewed by linked images, or studied by linked documents as well. Another issue of the system is that data can be placed on unlimited amount of thematic layers put over a base map. Layers can be switched on and off in various configurations, which allows control and organization of the stream of data as well as both immediate and detailed analysis of relations between apparently distant phenomena. By using "zoom
in and out” tool a geo-referred spatial database makes another step in developing monitoring systems which establish links between the various scales of monitoring: landscape, site and detail scale, exposed to the same natural and environmental (or even social) effects.

3. Improving the preventive maintenance of a historic residence
Once there’s a conservation risk assessment system established, risk management is improved. A classic 2D risk matrix, which is in common use as a risk managing tool nowadays, can be now de-constructed into form of a residency layout or interiors layout. Risks have can be identified by their localization this way. The rules: “these risks are to be monitored/monitored frequen-
tly/monitored continuously, and appropriate response starts immediately“ can be replaced with: “these locations are to be monitored/monitored frequently/monitored continuously, and appropriate response starts immediately”. A preventive conservator is able to localize the problem instantly, and to plan logistics efficiently. Many data sources can be used together instantly to analyze the situation and work out the right decision. Such matrix generates productive management decisions (for example, once a risk arising from exposure to optical radiation is detected at specific location, a conservator moves objects from the location, or covers the windows with different types of foils, etc.). A simple colour code (which represents the level of risk) also allows for quick and efficient communication between various museum staff - including those relatively new to the place, who don’t know the exact names and numbers yet, but do know the look and localization of the buildings and interiors.

References
Wyatt P., Ralphs M, 2003, GIS in Land and Property Management, Efef Verlag AG.