

## **Outline of How GIS was used throughout the U Albany Fall 2002 Planning Studio project**

- **Identify existing information on the area**
  - Assemble existing data
  - Produce base maps of the area
  - Analyze existing information
  - Analyze the area - look for areas with vacant buildings
- **Produce new information for the area with the survey**
  - Define the data gathering process
  - Identify new information needs
  - Deploy the survey teams efficiently
- **Follow the progress of the survey**
  - Identify areas covered by the survey
  - Redeploy surveyors to ensure full coverage
- **Record the results of the survey**
  - Enter new information from the survey
  - Combine with the existing information
- **Analyze the results of the survey**
  - Compare the results with the existing information
- **Present the results of the Survey**
  - Produce reports on the progress of the project
- **Track the progress of efforts to resolve the problem**
  - Assemble the information in a reusable/updatable form
  - Identify methods for entering new data as it is acquired
  - Identify methods for archiving old data for future analysis

## Vacant Structure Survey

The surveying process undertaken by the Studio was multifaceted, and included identifying high vacancy areas and developing appropriate maps of these areas. The steps that follow took part after the initial evaluation of pertinent available data, as described below in the Data Collection and Analysis section that follows.



### Step 1-Pilot Testing:

The original survey instrument, created by Dr. Thyagarajan of the University at Albany's Urban & Regional Planning Program, was pilot tested by eight teams of two to four people in a two-block study area on September 28 and 29, 2002. As a result of this pilot deployment, Studio participants made

modifications to the instrument to incorporate more detail on critical survey elements. During this phase, Studio participants discussed requirements for building inclusion and determined to base the survey on observation of external characteristics. Only those building that appeared to be uninhabited from the exterior were to be included in this survey.

### Step 2-Training:

One student team created a draft survey training manual complete with digital pictures of structures and characteristics to aid in the consistent identification and rating of structural elements. The Studio took part in discussing various grading levels and criteria of building elements.

### Step 3-Deployment:

The Studio performed a full deployment of the survey of key areas on October 19, 20, 26, 27, and November 2, 3, 2002.

To assist in the deployment, the Historic Albany Foundation sent a letter to neighborhood association representatives to solicit their participation. Groups of students and volunteers



employed the revised instrument for visual identification and assessment of 68 structural elements as viewed from the street. Additionally, digital pictures of each property were taken. Survey teams located over vacant buildings in survey area.

**Step 4-Database Development:**

Survey information was consolidated into a Microsoft Access 2000 database for storage. This program can accommodate easy data entry and easily exports it into various other data file types, such as Excel and dbase. The database was comprised of 29 data fields that directly correspond to the survey instrument, including a data field for the structure’s photo. The resulting database is a comprehensive automated compilation of the survey results. 787 records are included in the database. The database meta-data is provided in the table below.



**Table 1: Survey Instrument and Database Fields**

Field Name	Data Type	Pick List Option, If Available
ID Number	Number	--
Surveyor Name	Text	--
Date of Survey	Date/Time	--
Time of Survey	Date/Time	--
Street Address	Text	--
Use	Text	"Residential, Commercial, Industrial, Institutional, Mix"
Number of Stories	Text	"1, 2, 3, 4, 5, more than 5"
Activity	Text	"Occupied, Vacant, Partially Vacant, Burned, Boarded"
Construction	Text	"Brick, Wood Frame, Stone, Mixed"
Any of the Following	Text	"Daylight Basement, Permits, Notices, See Comments"
Street Facing Wall – Wood Frame	Text	"Good, Average, Poor, Deteriorated, N/A"
Street Facing Wall – Masonry	Text	"Good, Average, Poor, Deteriorated, N/A"
Street Facing Wall – Foundation	Text	"Good, Average, Poor, Deteriorated, N/A"
Side Walls – Wood Frame	Text	"Good, Average, Poor, Deteriorated, N/A"
Side Walls – Masonry	Text	"Good, Average, Poor, Deteriorated, N/A"
Roof	Text	"Good, Average, Poor, Deteriorated, N/A"
Cornice/Eaves/Bracket	Text	"Good, Average, Poor, Deteriorated, N/A"
Window Sills/Lintels	Text	"Good, Average, Poor, Deteriorated, N/A"
Windows – Frame	Text	"Good, Average, Poor, Deteriorated, N/A"
Windows – Glass	Text	"Good, Average, Poor, Deteriorated, N/A"
Front Entry - Door	Text	"Good, Average, Poor, Deteriorated, N/A"
Front Entry - Porch	Text	"Good, Average, Poor, Deteriorated, N/A"
Front Entry – Steps	Text	"Good, Average, Poor, Deteriorated, N/A"
Exterior Finish	Text	"Good, Average, Poor, Deteriorated, N/A"
Chimneys	Text	"Good, Average, Poor, Deteriorated, N/A"
Front Yard	Text	"Good, Average, Poor, Deteriorated, N/A"
Side Yards	Text	"Good, Average, Poor, Deteriorated, N/A"
Comments	Text	--
Photo	OLE Object	--

## **Data Collection and Analysis**

The collection and analysis of information relevant to the vacant building survey was an ongoing process that started in September 2002. Numerous public and private organizations and businesses as well as individuals were contacted and interviewed in order to compile accurate information for mapping, surveying, and understanding the political and financial process of property disinvestment and abandonment in Albany.

## **Mapping**

A GIS/data team compiled information from a variety of resources in order to create the best working maps for the survey deployment and future analysis. The data and resources included:

- Study Area Boundaries and Focus Area Boundaries from Historical Narratives of those already familiar with the City's housing patterns
- Roads, railroads, water features, public lands, and municipal boundaries from The NYS GIS Clearinghouse website.
- Census Tract and Block boundaries, population and housing data from the US Census Bureau Website and ESRI Website.
- Historic Districts, National and State Register Historic Sites, and locally significant Historic Sites from NYS Office of Parks Recreation and Historic Preservation and The Historic Albany Foundation.
- Orthophotos and tax parcel data from NYS agencies and through another project being conducted by UAlbany students
- Listings of registered vacant buildings from Albany County and unregistered vacant buildings from the Neighborhood Associations.
- Scanned images from past City Plans including 1967 Downtown Block Quality, 1970 Building Conditions, and 1986 Areas with poor environmental quality.

Based on the information collected for mapping, the initial number of registered and non-registered vacant buildings in the database was 269.

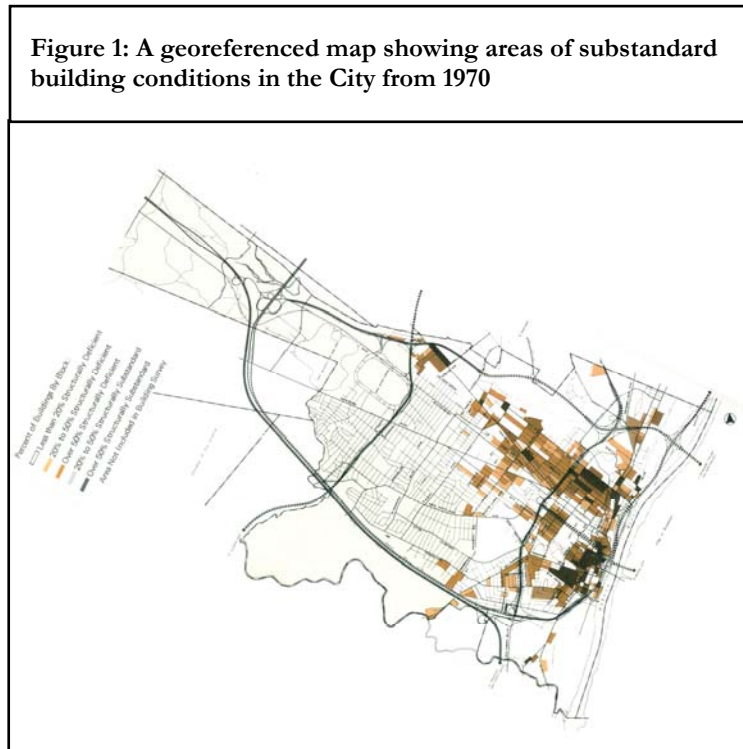
The GIS/data team also created datasets specific to the Studio needs, including:

- Neighborhood Association boundaries
- Individual Survey group deployment areas

- Modified Parcel boundaries used to enter the survey results, and track the progress of the survey deployment
- Case Study areas

Block level Census data was used to identify specific areas to concentrate our efforts on and scanned images from previous City Plans were used to identify areas that had a history of building quality and vacancy problems. From this information, we devised a strategy aimed at completing the survey in the most efficient manner possible.

The survey area was divided into 21 groups for distribution among eight studio teams. A series of



maps was produced to facilitate the gathering of data. Each map showed the parcels within the survey group, color-coded to identify the property class and its listed vacancy status. An accompanying spreadsheet was included that listed every parcel in the group along with its physical address, and ID number. This was used to join the Survey data, digital photo, and existing parcel data together after the completion of the survey. It became evident early on that the existing vacancy data was incomplete. As work progressed on the Survey deployment, Un-surveyed parcels were redistributed among Studio members that had finished their assigned areas. By tracking the progress of the survey deployment using GIS, we were able to verify that all of the properties within the outlined survey area were covered.

After putting the data gathered through the survey into the Access database, vacant buildings were mapped, and further analyzed using GIS. By combining the new survey data with existing historic building information, we were able to reveal that 309, or 7.5% of the 4,184 listed local historic buildings are vacant, and that 36% of the vacant buildings in the survey area are considered historic structures.

U Albany Department of Urban and Regional Planning, Fall 2002 Planning Studio Work on the twelve Case studies began after the survey was complete. A variety of areas affected by high vacancy were identified and mapped. The data we obtained and developed on our own was examined and summarized to produce a profile for each Study Area. The building permit data for 2001 was used to identify the kinds of investments being made in the various areas.

### **Future Uses of the Data**

There is still much that can be done with this information. After the data is tested for completeness, and accuracy, other layers that we were unable to obtain or generate because of the time constraints of the project can be added to the GIS. The vacancy rates for the 2000 Census can be compared to what we found in the field. Bus routes can be added to see if vacancy rates correlate with mass transit availability. The City's zoning map can be digitized to help make decisions regarding changes in allowed land uses. An interactive mapping application can be developed using ArcView so those interested in particular sites have easy access to all of the information we have on that building.

These were used to identify where project efforts should focus in surveying and analyzing vacant buildings in Albany. Census Block level data was used to confirm that the project was focusing on the appropriate areas of the city.

The database information developed as a part of this Studio for Albany can also have policy implications for the City of Albany. This data can help in the construction of an "early warning" system on vacancy, along the lines of those developed elsewhere.<sup>1</sup> Additionally, surveying system in conjunction with other City and County resources can assist in tracking specific problematic properties and neighborhoods.

Information compiled as a part of this Studio project can also be of assistance in identifying specific programmatic and financing needs for some city neighborhoods. The financing of projects in this neighborhood could be accomplished in a number of ways. Private investment is probably the most common type of funding for renovation and preservation projects, but can be supplemented by various federal programs. By utilizing investment tax credits and grants, a private investor could make a contribution to the neighborhood and still benefit through various incentives.

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<sup>1</sup> Chicago, for example.