

UrbIS Hanoi 2010

**GIS instrument
for comprehensive management
of urban development information**

ir Michel Van Acker

Agenda

- Introduction
 - Need of tools for better knowing the situation and its evolution and to study the measures to be taken
- 2000-2003 : Asia Rehab project
 - Realization of a GIS for a pilot zone
- 2003-2006 : Hanoi 2010 project
 - Amplification of the effects of the first project
 - Generalization of the GIS to the whole of the Old Quarter
- 2006-2009 : Transition phase
 - Training and assistance in GIS
 - Preparation of URBIS HANOI
- 2009-2010 : UrbIS Hanoi 2010 project
 - Extension of the GIS to all the province

Introduction

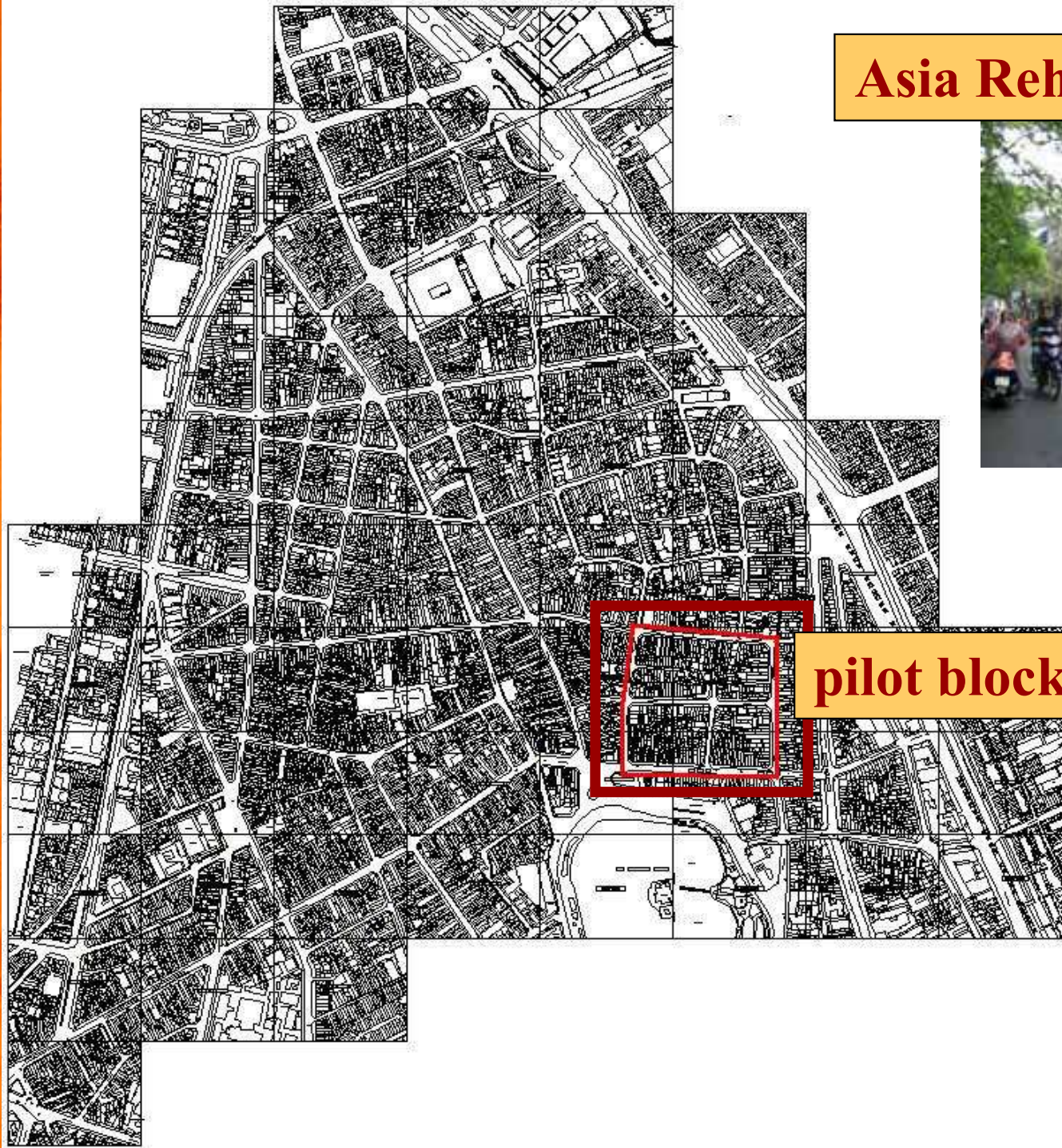


- very fast development of Vietnam
 - real urban explosion of Hanoi
 - many problems in all the fields
 - difficulty of the management of all that relates to the ground
- modification of the size of the province of Hanoi
 - from 900 to 3.300 km² and population x 2
 - reorganization of the administrations according to the new territory of the province is in progress
- it is essential to use tools for better knowing the situation and its evolution and to study the measures to be taken
 - the DONRE also responsible for the cadastral register of Hanoi was charged by the authorities of Hanoi with the installation of the GIS

2000-2003 : Asia Rehab project

- European program Asia Urbs
 - Partners : Hanoi , Toulouse and Brussels
 - charge of the realization of the GIS tool
 - collaboration with DONRE and Belgian Cadastre
- Objectives of the project
 - to support the development and the implementation of the Plan of Safeguarding, Restoration and Development of the Old Quarter
 - to propose solutions to manage the problem of keeping the population in place while allowing economic and commercial development of the Old Quarter
- Study zone
 - located around the small Hang Be block in the middle of the Old Quarter of Hanoi

Asia Rehab Project

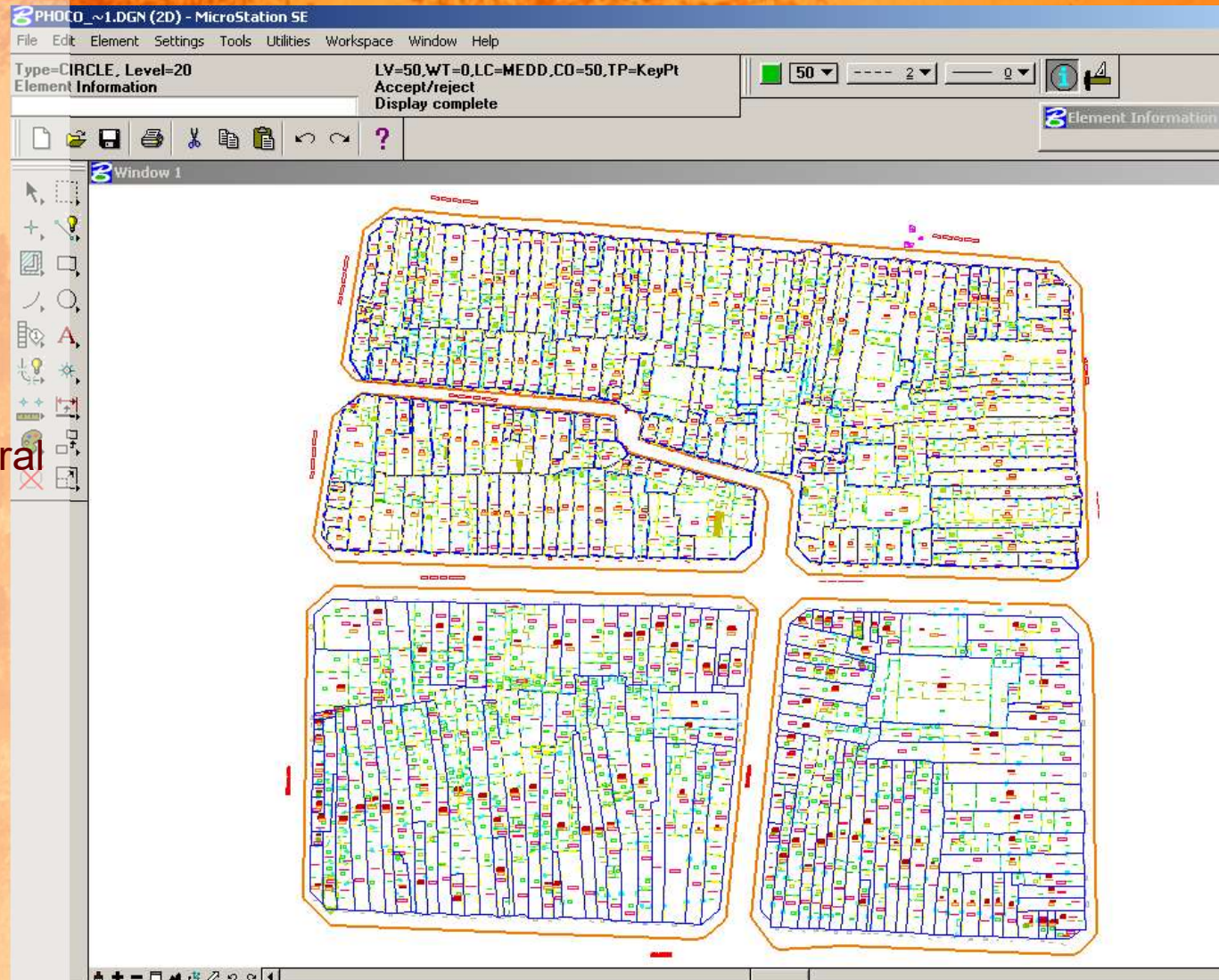


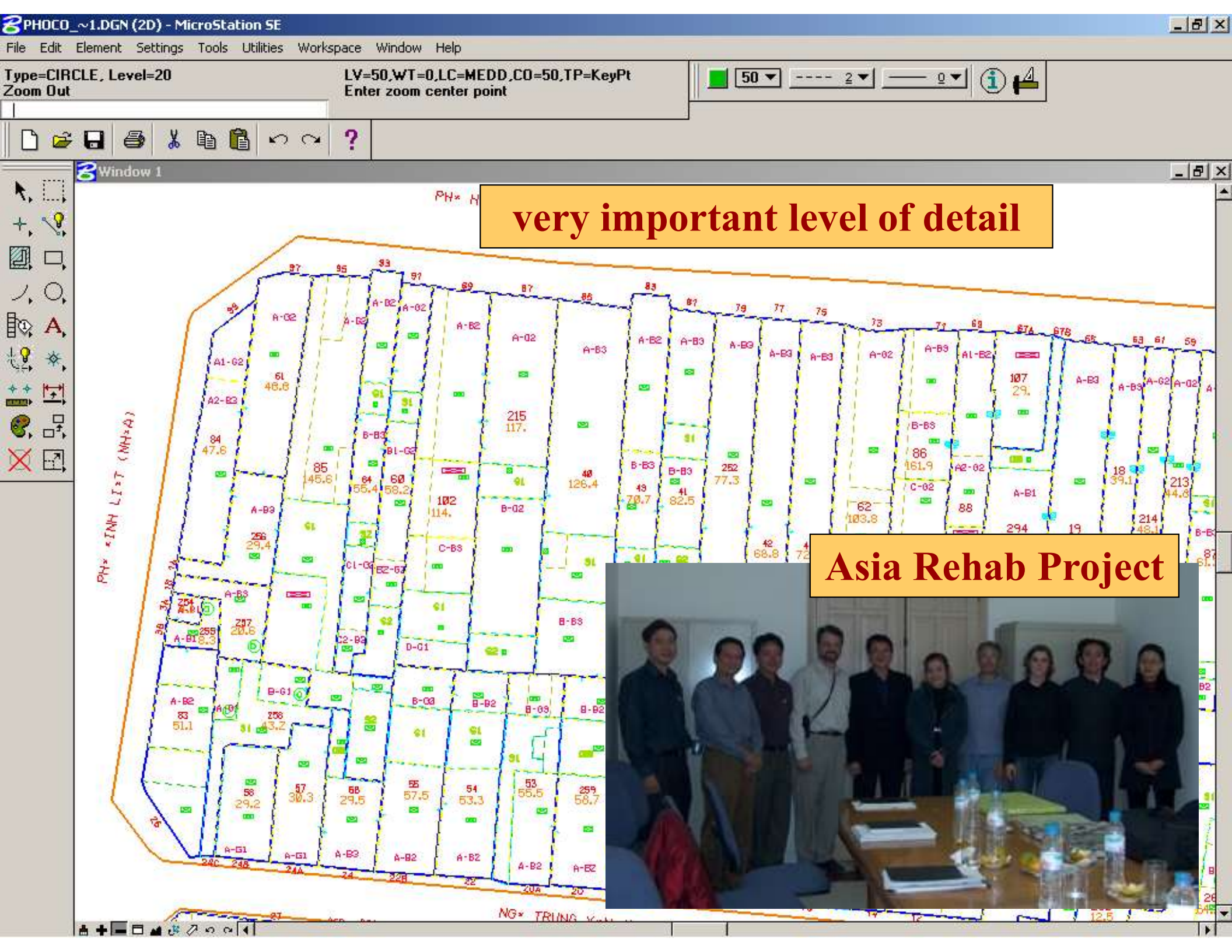
pilot block HANG BE

2000-2003 : Asia Rehab project

- **Realization of a GIS**

- realization of
 - a numerical cadastral map
 - the inventory database of the Old Quarter
- juxtaposition of several analyzes based on different criteria







inventory database

Tep

Ma so: 8

Date du relevé: 24/08/2001 Rem:

ADRESSE 46, Cau Go

Nom actuel

Nom ancien

ENQUETEUR

Ten: Nguyen Dinh

Prénom: Quan

Qualité: Architecte

old ID: 24, 7H-II-42

Parcelle Adresses Bâtiments Cours Occupants Photos

Bâtiment A

Date de construction 1915

Date de réhabilitation

Emprise au sol 38,7

Surface de plancher développé 77,4

Nombres d'étages 2

MaSo ThuaDat: 7H-II-42+24/A Rem: ok

* MaSo ThuaDat: Rem:

Record: 1 of 1

Typologie architecturale

Style ☐ Trad.vietnamien ☐ Trad.chinois ☒ Colonial ☐ Art Deco ☐ Autre

Etat Défiguré

Intérêt à restaurer

Etat des lieux

Etat général de la structure moyen

Conditions d'ensoleillement moyen

Confort thermique moyen

Qualité de l'air mauvais

Toiture

Forme

Décor ☒ faitière

Matériaux

Structure/Matériaux

Murs porteurs Brique

Poteaux Brique

Murs remplissage Brique

Plancher Bois

Charpente Brique

Valeur à restaurer

Typologie d'occu

Maison d'ha

Commerce

?

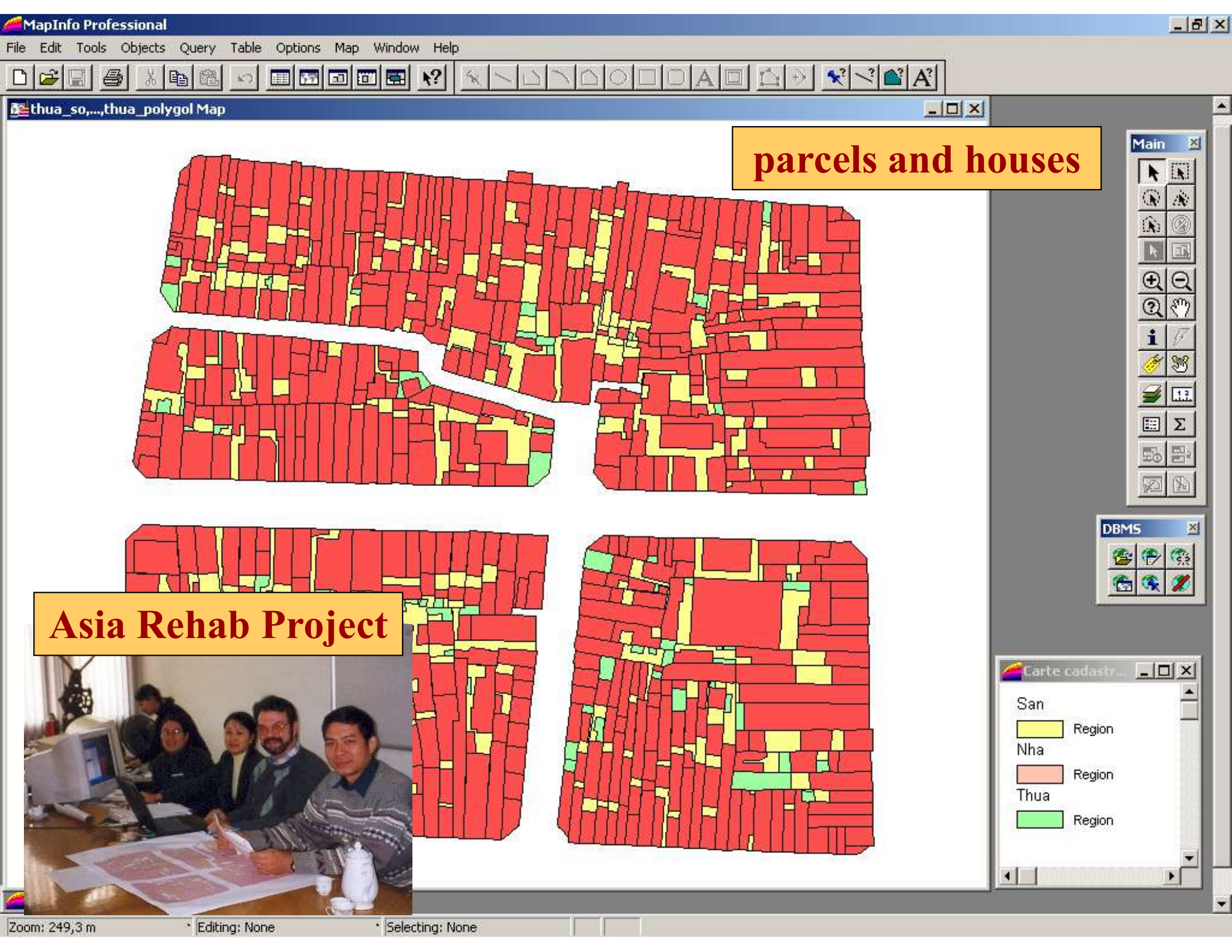
Record: 1 of 3

Record: 8 of 312

Ma so Thua dat _Nha/Identifiant cadastral de la sous-parcelle (parcelle_bâtiment)

Asia Rehab Project





parcels and houses

Asia Rehab Project

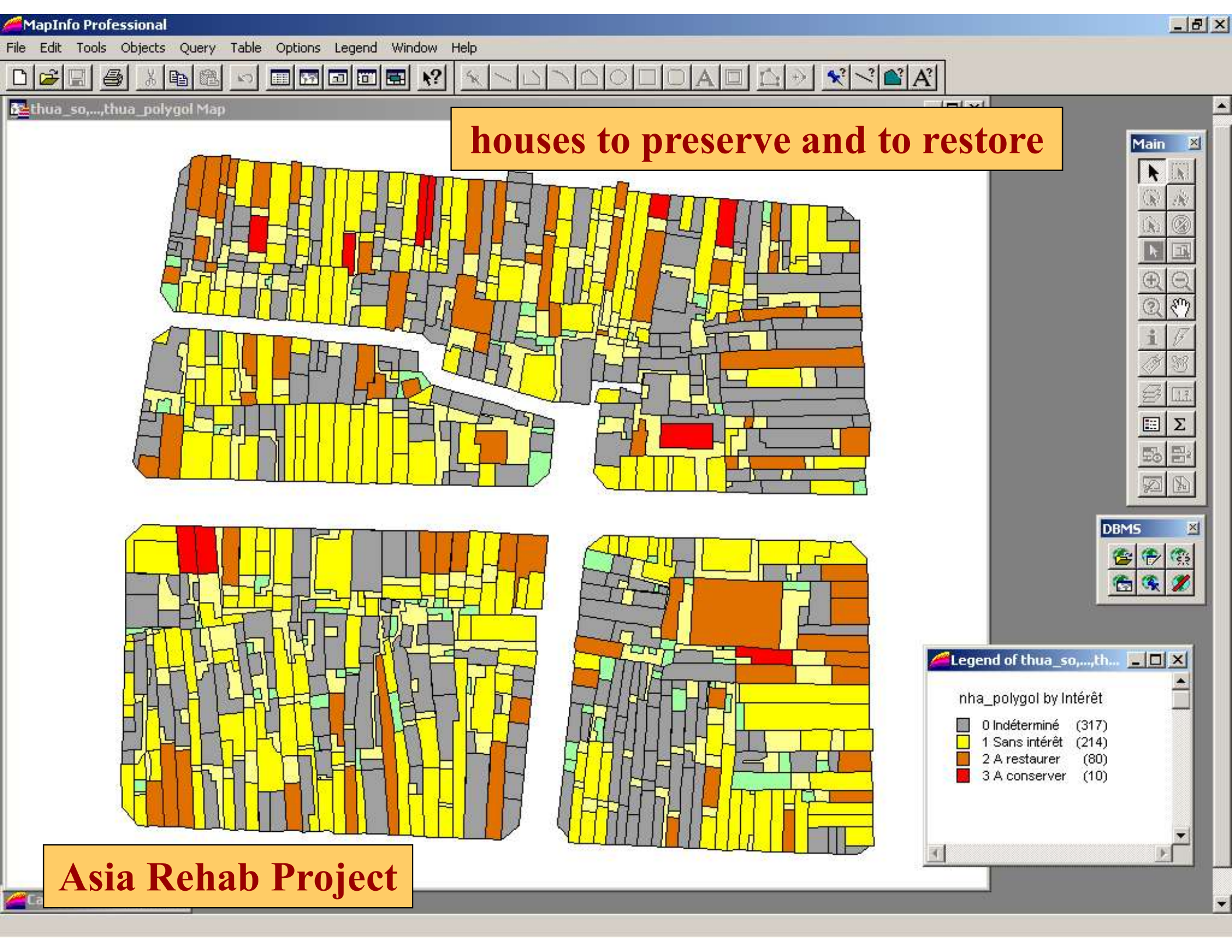


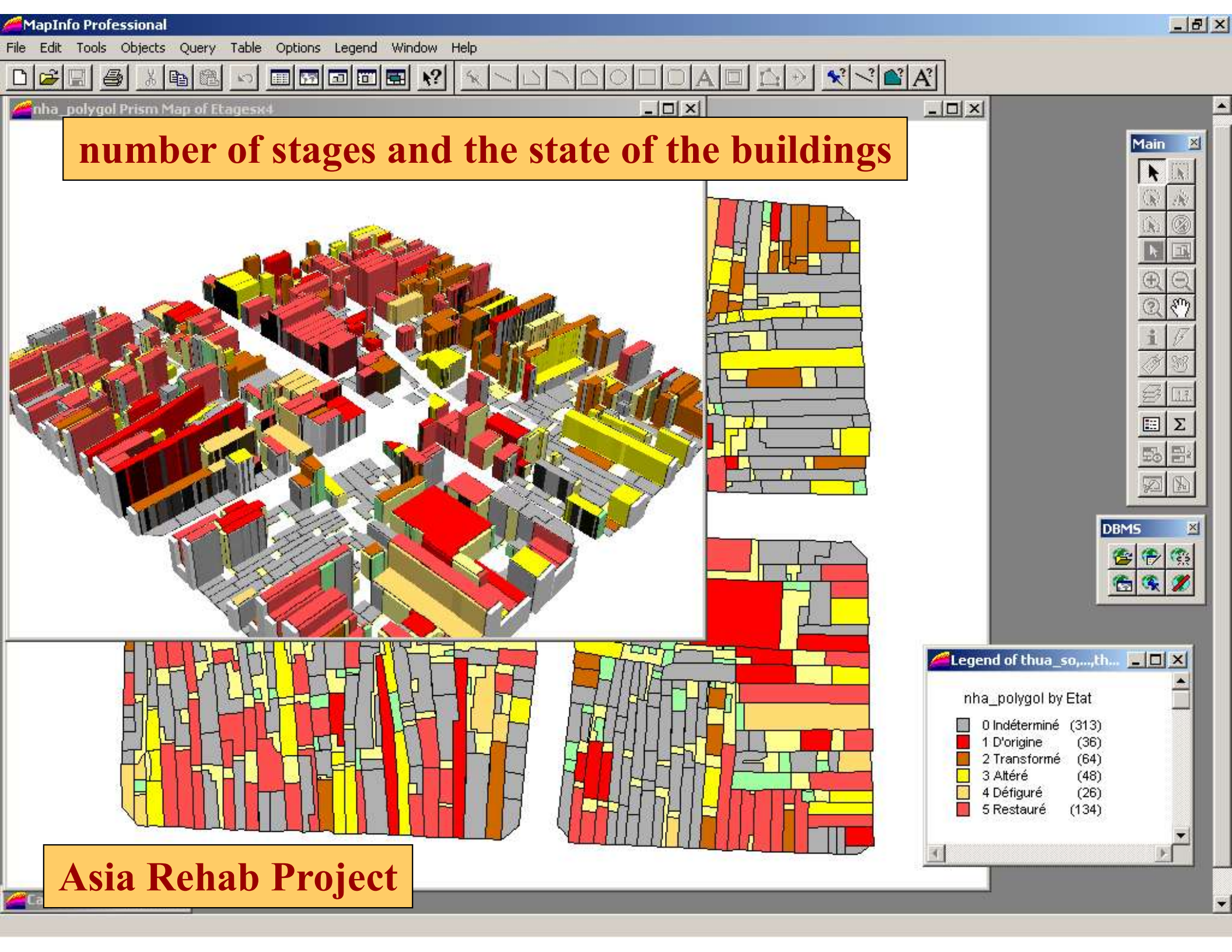
Carte cadastr...

San
Region

Nha
Region

Thua
Region





2000-2003 : Asia Rehab project

- **Conclusions**

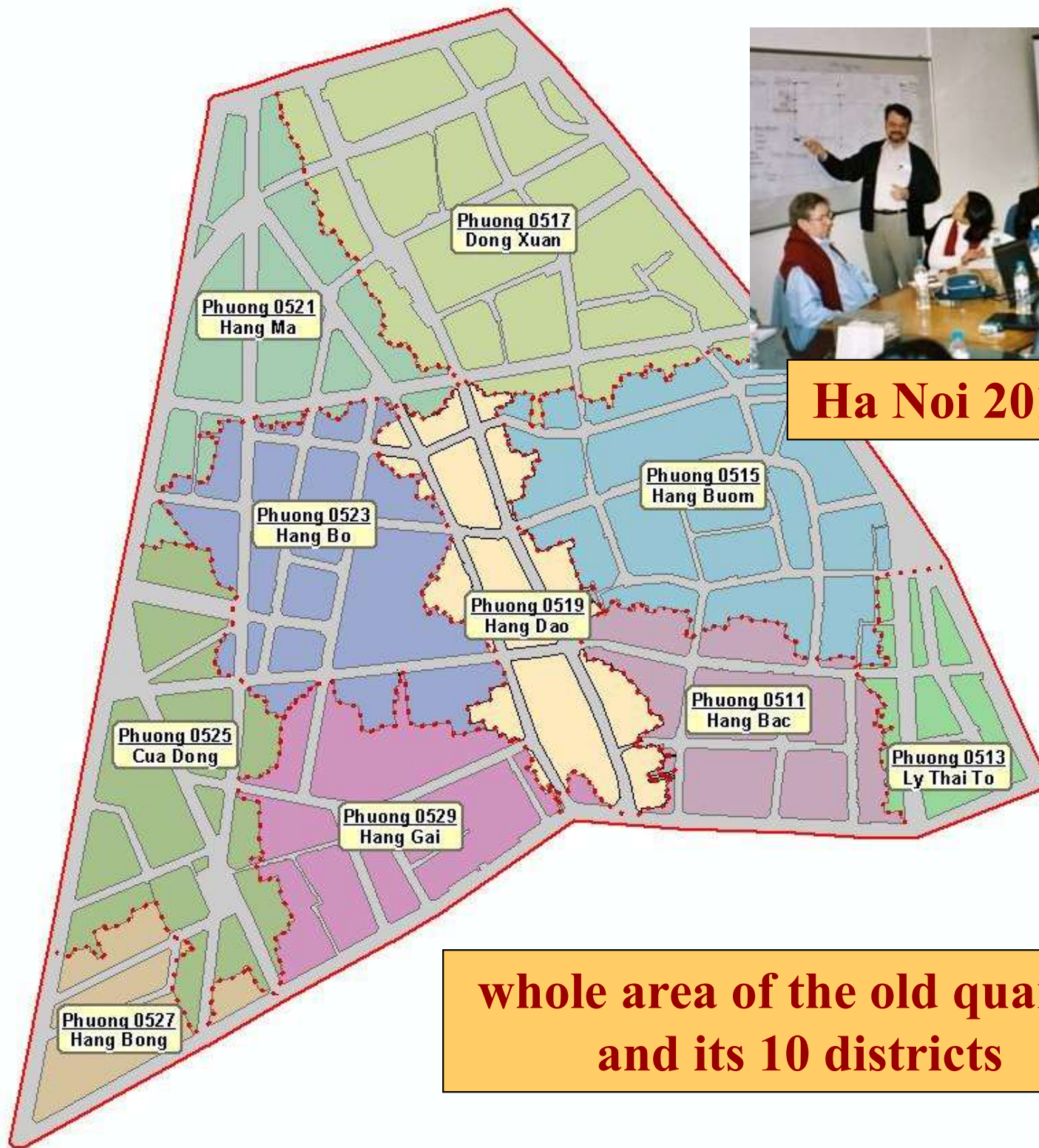
- Experience sharing between the European experts Toulouse and Of Brussels and the experts of Hanoi led to the concretization of an overall project, of a global method of intervention, based on modern computer tools: a Geographical Information System which integrate notably the digitalization of the Cadastral map

2003-2006 : Hanoi 2010 project

- Amplification of the effects of the first project
 - Once the foundations of the project of restoration and development of the Old Quarter had been laid by the ASIA REHAB project, the HANOI 2010 project made it possible to set up a more operational phase.
 - By managing the generalization of the GIS carried out on the pilot block to the whole of the Old Quarter, the Belgian Administration of Patrimonial Documentation was an important partner of this project HANOI 2010.
- Objectives of the project
 - To preserve the cultural identity and the material and immaterial patrimony of the Old Quarter
 - To durably continue the restoration of the Old Quarter
 - To associate the inhabitants with the restoration
 - To ensure the diffusion of the experiments of protection of the patrimony in Vietnam and other Asian countries

2003-2006 : Hanoi 2010 project

- Action of generalization of the GIS to the whole of the Old Quarter
 - Context and specific objectives of this action
 - Project HANOI 2010 aimed at generalizing the Geographical Information System (GIS) to the whole of the Old Quarter. The realization of the GIS on the totality of the perimeter of the quarter of the 36 streets was necessary to the good performance of the majority of the other actions.
 - Two level of detail
 - To work on the highest level of detail only on in-depth studied small zone, in extension of the zone of the preceding project.
 - To create a simpler cartography on the whole of the Old Quarter while using as background the layout of the available parcels by assembling the digitized cadastral sheets.



Ha Noi 2010 Project

whole area of the old quarter
and its 10 districts



Ha Noi 2010 Project

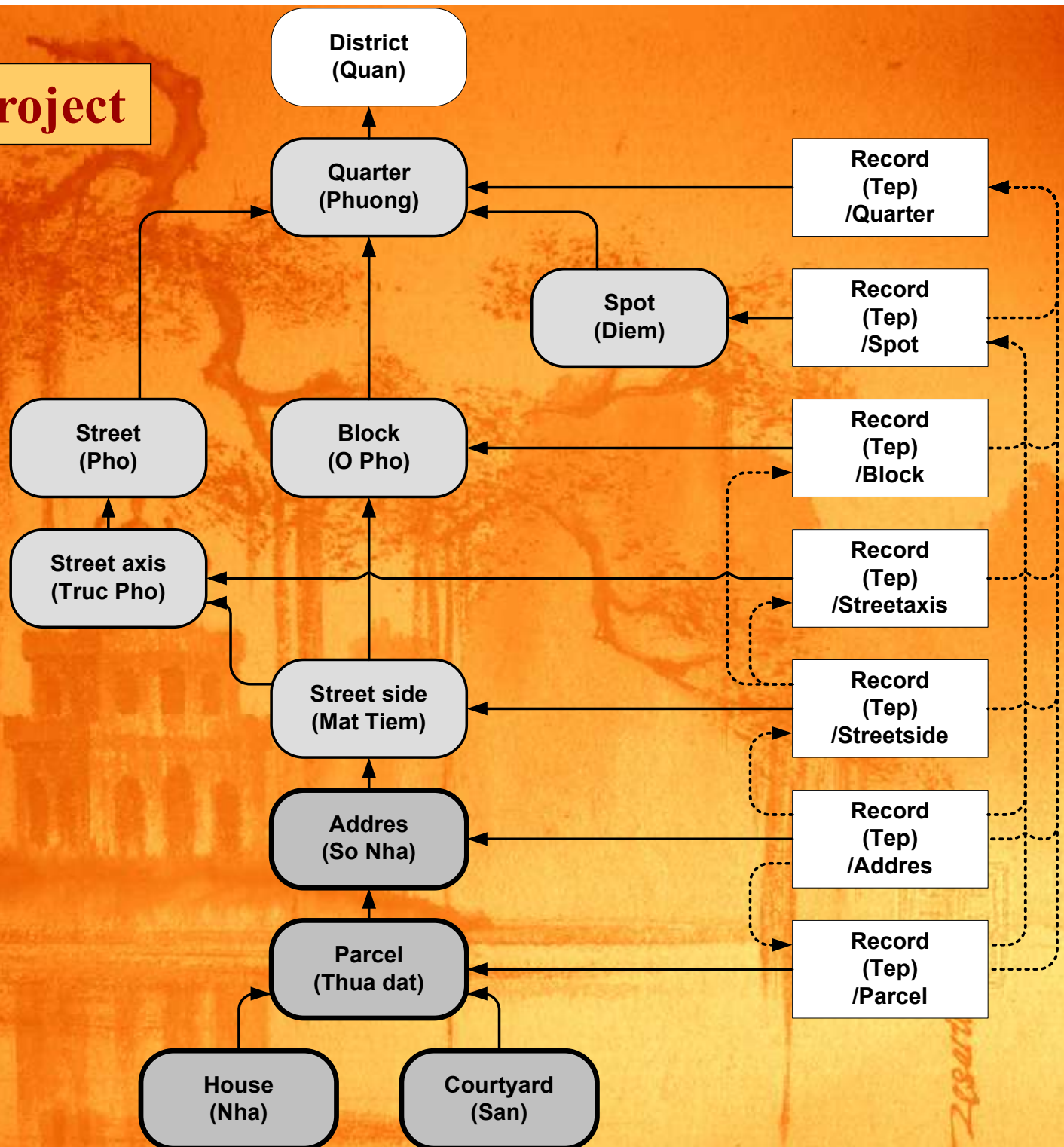
house blocks with
parcels and houses,
street sides and
street axes

2003-2006 : Hanoi 2010 project

- Achievements

- The various objects of the GIS (except for the parcels) were all identified and codified to allow various levels of relation and representation.
- The basic great principle was to use standard addresses based on the codes of street which are numbered by quarter and district.
- Statistics could then be calculated by street sides and be used in various ways, either collecting for an axis of street the data of the 2 sides of this street, or collecting for a block the data of the street sides of its contour. The data by block could in their turn being calculated by quarter and district

Ha Noi 2010 Project



**addresses of houses
are also located**

Ha Noi 2010 Project



2003-2006 : Hanoi 2010 project

- Ma May block

- In addition, the integration of the Ma May block in the GIS was executed in a detailed way, like the Hang Be block in first project ASIA REHAB.
- All the objects Parcels, Houses and Courtyard were represented and identified in this area



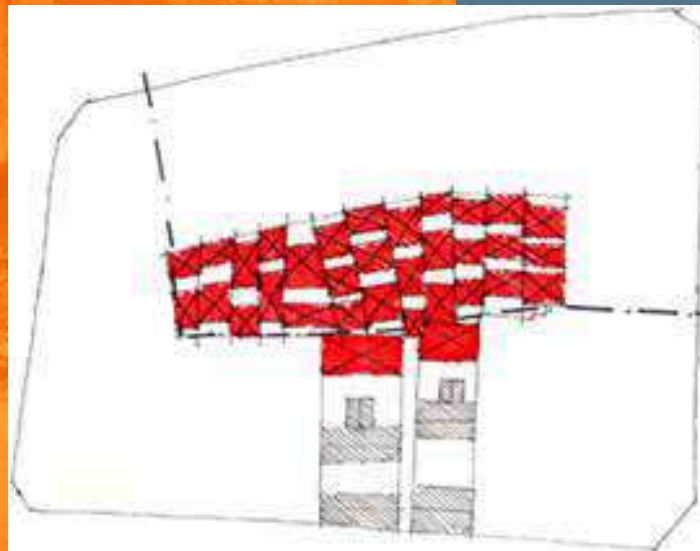
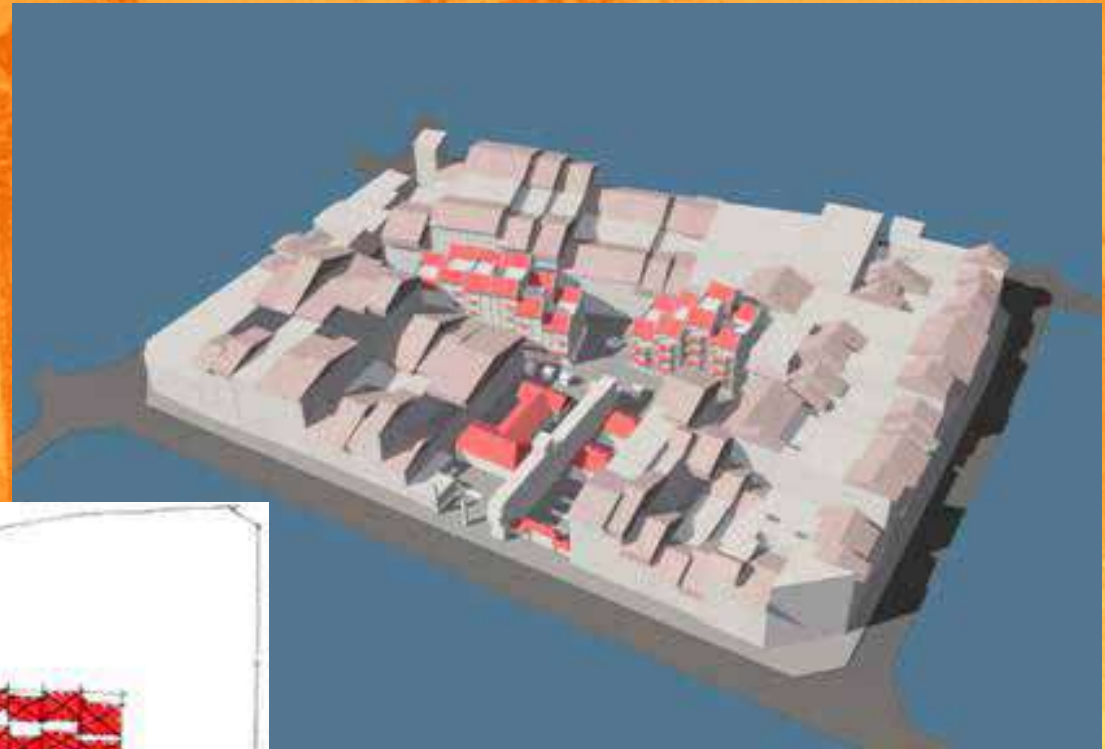
Ma May-Hang Bac

thematical maps



Ma May-Hang Bac

different restoration projects



2003-2006 : Hanoi 2010 project

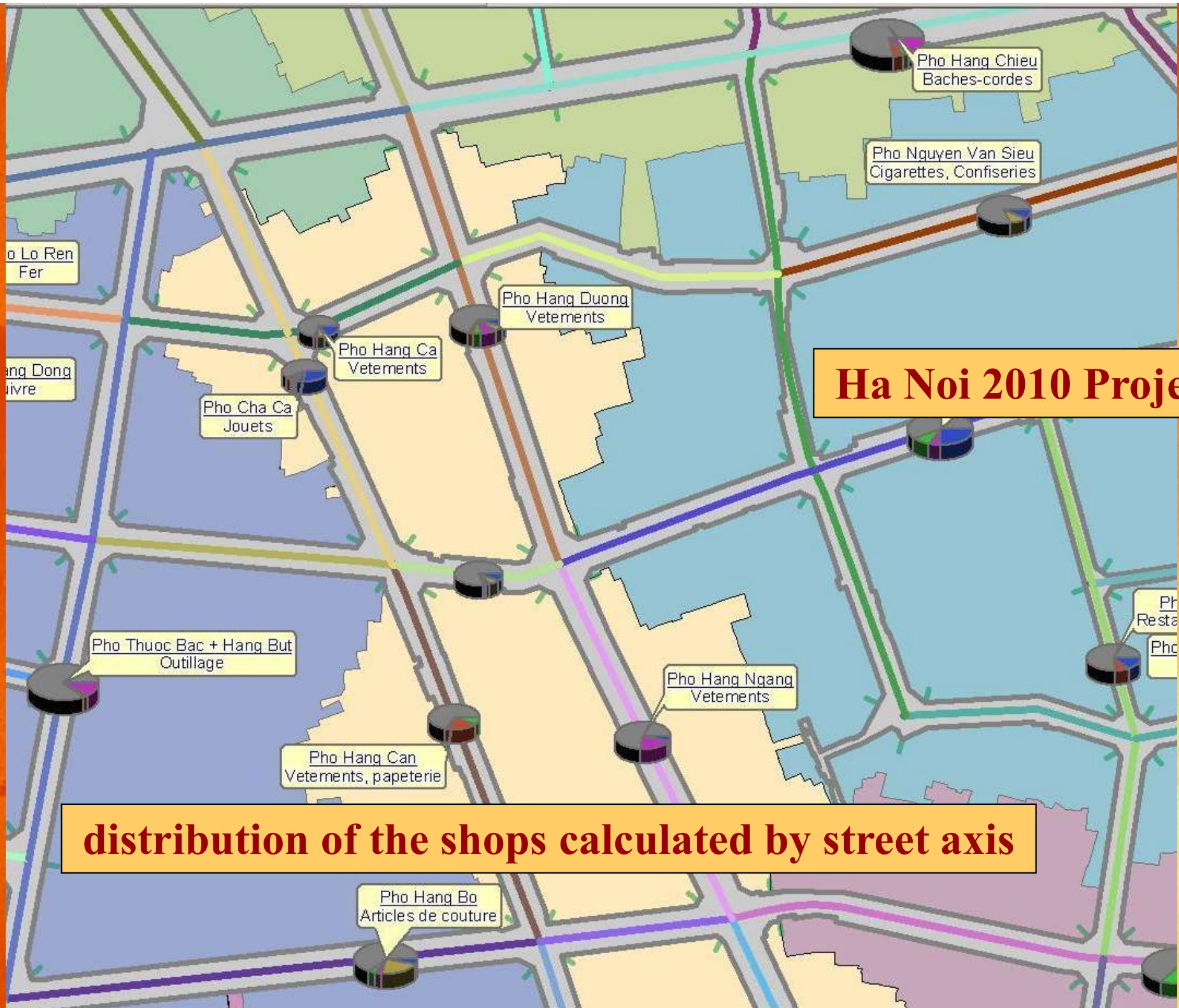
- Applications

- Inventory of the buildings classified by types:

- communal houses, houses of great value, historic buildings, unhealthy buildings, dangerous buildings, houses without architectural value, etc...

- Creation of statistics:

- With the creation of a very detailed database including the inventory of the buildings and the streets, of the social and economic situation, the statistical analysis of these data and the thematic representation becomes possible by assembling the individual data by address on the level of the streets.



number and state of the houses calculated by street axis

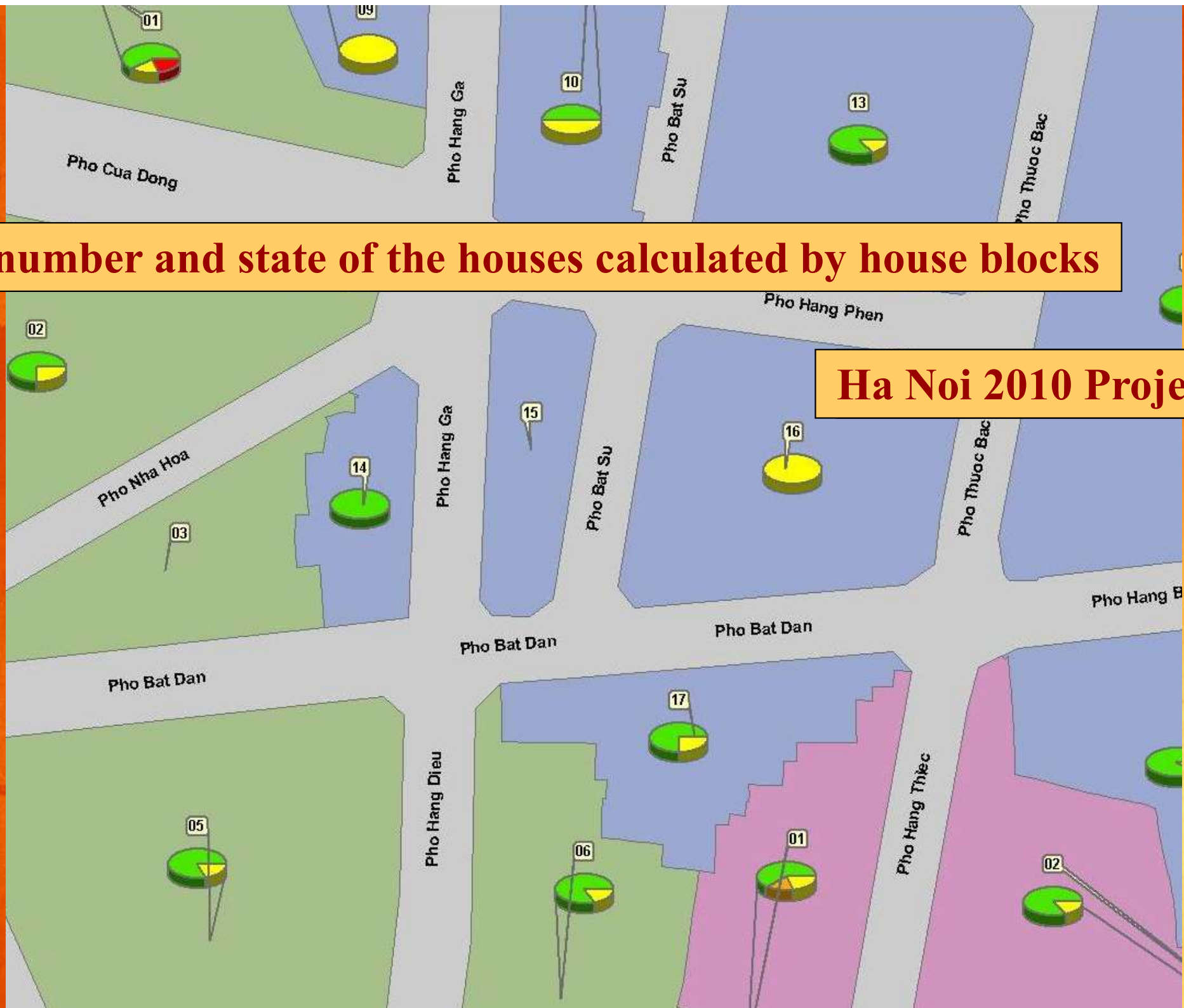


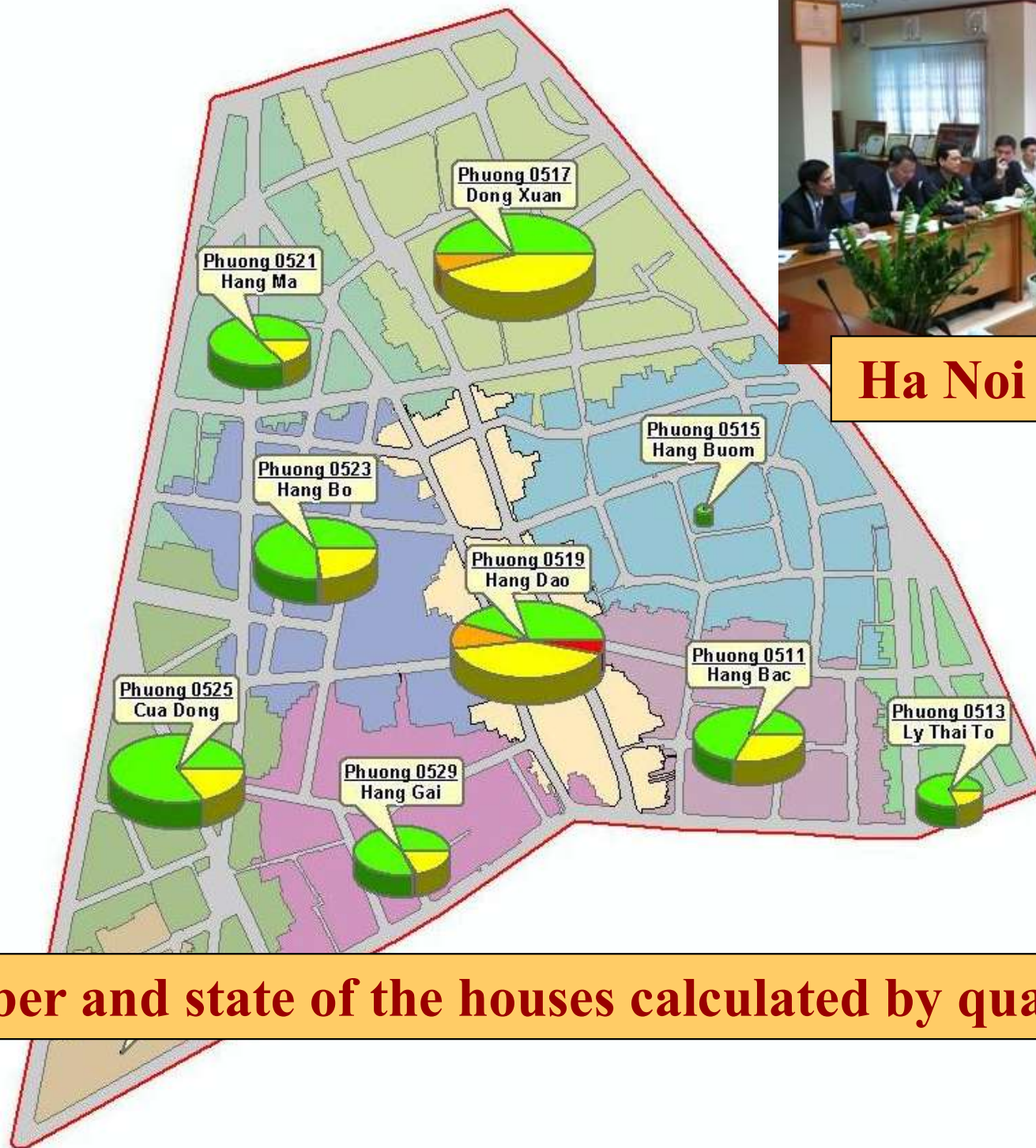
Ha Noi 2010 Project



number and state of the houses calculated by house blocks

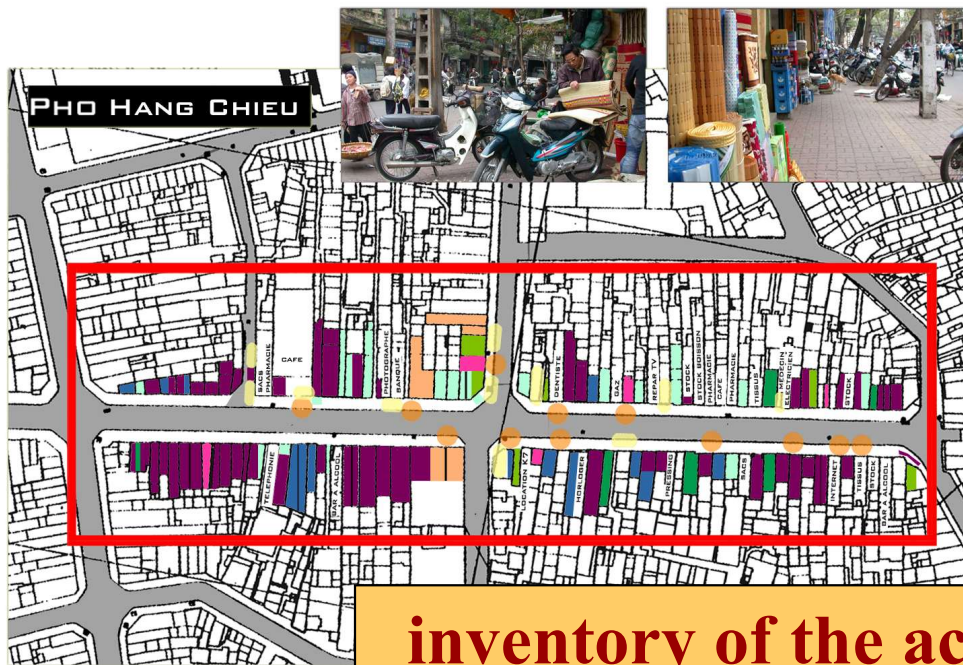
Ha Noi 2010 Project





Ha Noi 2010 Project

number and state of the houses calculated by quarter



inventory of the activities in the streets



ACTION 1 / MAINTENIR LES METIERS TRADITIONNELS
BUREAU DU VIEUX QUARTIER / HANOI 2004

ACTION 1 / MAINTENIR LES METIERS TRADITIONNELS
BUREAU DU VIEUX QUARTIER / HANOI 2004

ancienne rue des nattes

2006-2009 : Transition phase

- Training and assistance in GIS
 - Missions in Hanoi and in Brussels
 - Maintenance and reinforcement of HANOI 2010 results
 - Exchanges between Belgian and Vietnamese experts
- Brussels UrbIS as example
 - There are strong similarities at the conceptual level between project URBIS HANOI and what was carried out in Brussels. It is what pushed the Vietnamese authorities to choose this name.

Brussels UrbIS



FOT

MAP

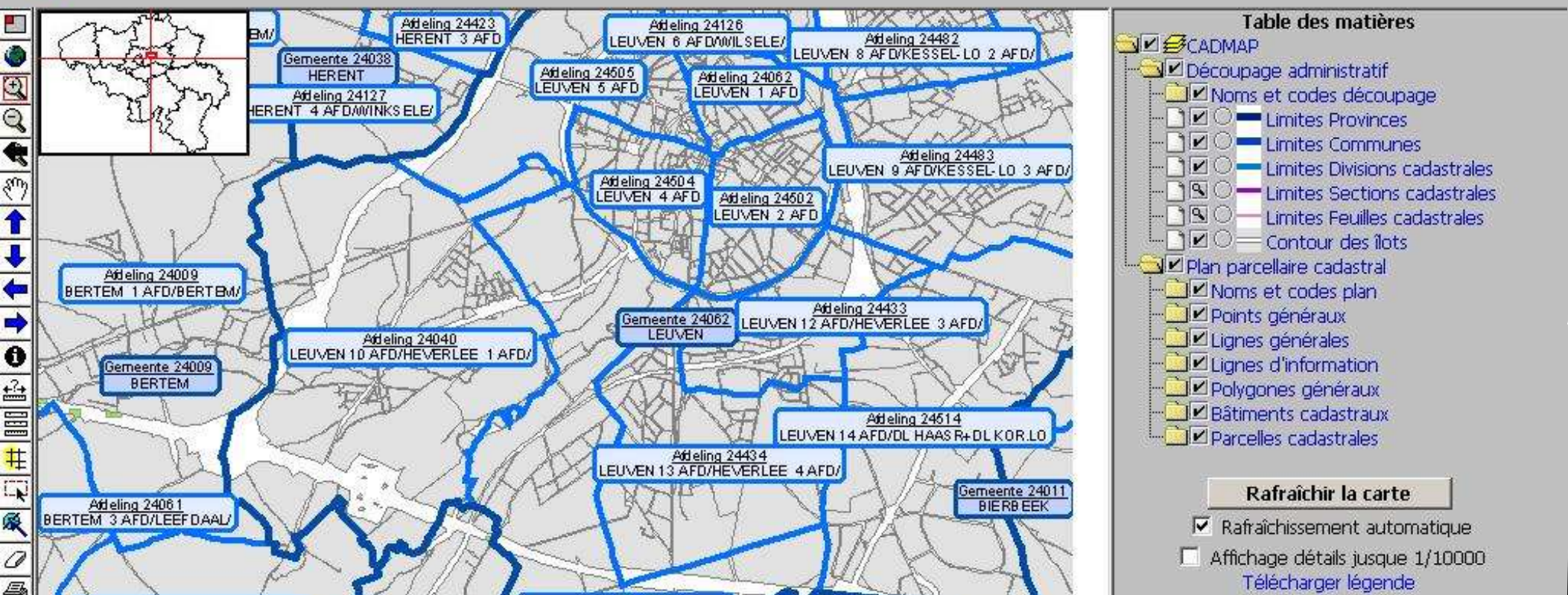
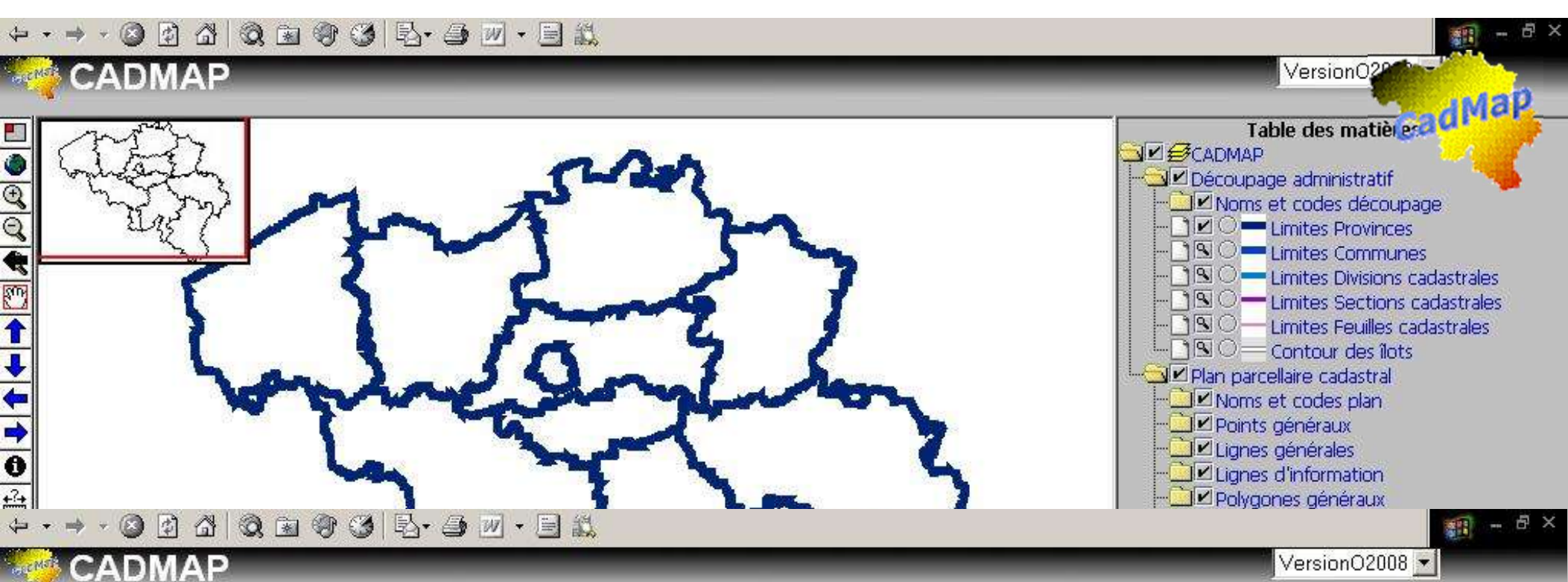
TOP

ADM

2006-2009 : Transition phase

- Belgian Cadastre as example
 - In 2003, I had joined the Belgian federal level to take the direction of the project of digitalization and numerical update of the cadastral map of Belgium.
 - All is operational since 2006 and the following phase of modernization and integration of all the patrimonial data with a cadastral GIS is in under way in Belgium
 - This work in progress made it possible to document in a rather precise way the Vietnamese experts who work in a similar concept of integration.





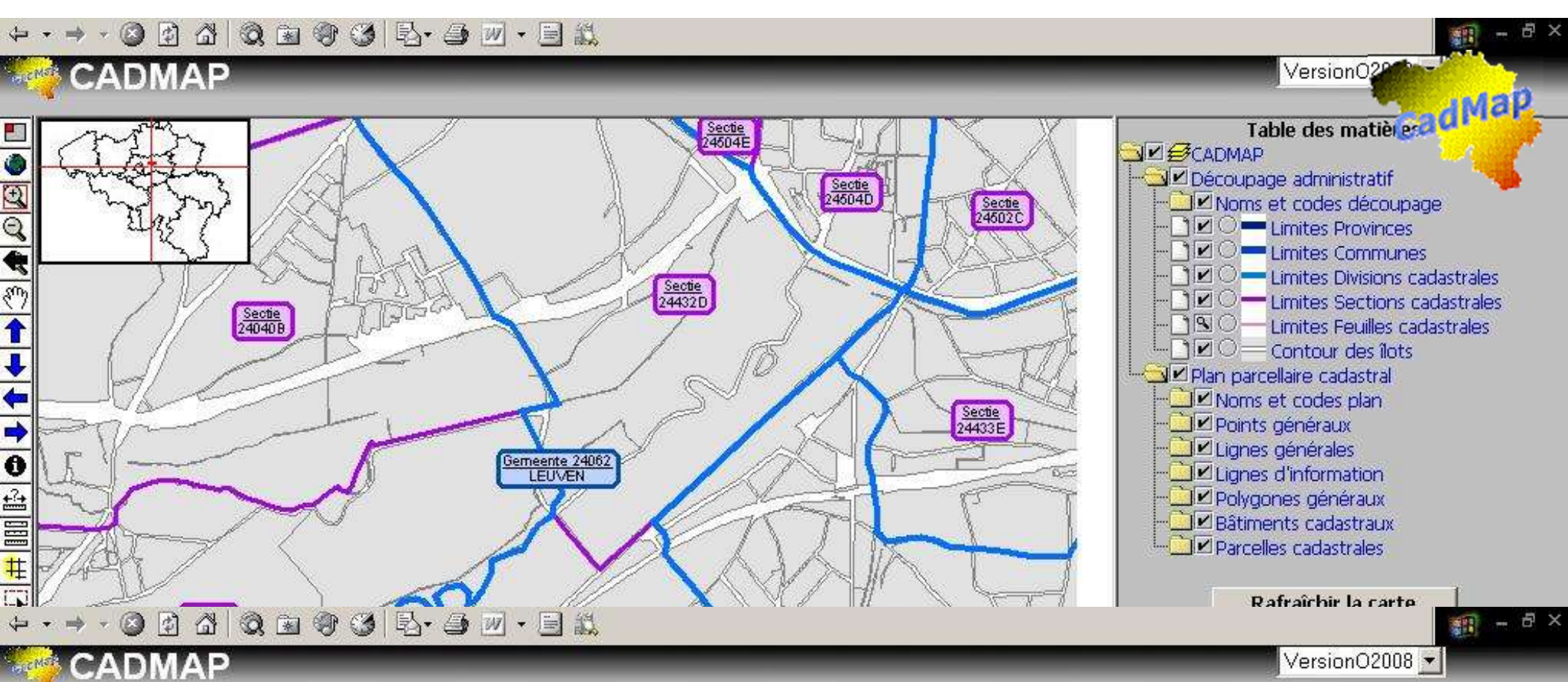


Table des matières

- CADMAP
 - Découpage administratif
 - Noms et codes
 - Limites Provinces
 - Limites Communes
 - Limites Divisions cadastrales
 - Limites Sections cadastrales
 - Limites Feuilles cadastrales
 - Plan parcellaire cadastral
 - Noms et codes
 - Points généraux
 - PB - Borne frontière principale
 - SB - Borne frontière secondaire
 - MB - Borne de limite communale
 - NG - Borne IGN
 - TP - Point trigonométrique
 - PP - Point de polygonale
 - PS - Borne de propriété privée
 - RA - Point de périmètre de remembrement
 - MI - Points divers
 - Lignes générales
 - RA - Périmètre de remembrement
 - MU - Limite communale
 - DI - Limite de division
 - SE - Limite de section
 - PL - Limite de lieu-dit
 - PW - Limite de polders et watergaten
 - WA - Limite de fossé, cours d'eau
 - EA - Servitude et sentier
 - PD - Limite de domaines et ouvrages
 - MI - Divers (terrain de sport, p...

Query/Selection Results - Microsoft Internet Explorer

Rec	CARKEY	CAPATY	CODEINS	SHEET	SHAPE.ST_Area()
1	21616A0076/00G000	PR		21616A010002_20060	0 ha 7 a 94 ca

Commune

Division

Section

Radical

Bis

Exp.A.

Exp.N.

UCCLE

UCCLE - UKKEL 6 DIV

A

76

21016

21616

Saisie de l'échelle

1: 1000

Sélection de l'échelle

1: 1000

Pan

Sélection de l'outil de recherche Recherche cadastrale

2006-2009 : Transition phase

- Preparation of URBIS HANOI

- It is during this transition phase that the concept of UrbIS HANOI was elaborate to set up a GIS for the whole area of the Province of Hanoi in close cooperation with the Vietnamese Authorities and the Belgian Cooperation.
- During this period, the Administration of the Town of Hanoi has been organized and prepared according to facing this new challenge. In particular, a specific service has been created within the DONRE and young specialists have been recruited and new equipment installed.
- For several years, the evolution of the Vietnamese legislation has also contributed to reinforce competences of the DONRE, which will allow a better coherence of patrimonial and urban management.

2009-2010 : UrbIS Hanoi 2010 project

- Extension of the GIS to all the province
 - Projects ASIA REHAB and HANOI 2010 and the phase of transition allowed the DONRE to implement new technologies and to develop a concept of integrated management tools for Hanoi.
 - Also the Popular Committee of the City decided to base itself on these new competences to charge this service with the generalization of the pilot project carried out in the Old District for the whole of the territory of the City, in order to carry out a global GIS which would be the support of a multisector management system.
- Strategy
 - The two strategic main axes are
 - the management of the urban areas by the authorities of HANOI
 - and the supply of information to the population.
 - Installation of a multisector strategy of urban management and information by effectively integrating the locatable data managed by different administrations

2009-2010 : UrbIS Hanoi 2010 project

- Objectives

- The overall aim is:

- to contribute to the public administrative reform in Hanoi through strengthening the policy-making capacity for the City's state management agencies, and enhancing transparency in administrative procedures and efficiency of public service delivery in the domain of urban management in Hanoi.

- The particular objectives are:

- to enhance the management capacity in public administration in Hanoi. Especially, the inter-link of information amongst departments and sectors will improve their performance in urban management and development, thus enabling the municipal authorities to develop timely and proper solutions.

2009-2010 : UrbIS Hanoi 2010 project

- Phases

- application of GIS in macro-level management,
- specialized information system regarding urban management in two pilot districts

- Feasibility study

- A feasibility study of the URBIS HANOI project is under way and will give the opportunity to the City of Hanoi to conduct the realization from 2010.

Thank you for your attention

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of the Patrimonial Documentation

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