

**COMPUTERISATION OF THE CADASTRAL AND LAND REGISTRY:
THE ABUJA EXPERIENCE**



PRESENTED AT
5TH FIG REGIONAL CONFERENCE
(PROMOTING LAND ADMINISTRATION AND GOOD GOVERNANCE)
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2

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INTRODUCTION



- Problems of Lagos in the 1970s led to a decision to relocate the seat of Government to a more central location,
- The Legal Framework for Land Administration in the FCT and Nigeria in general – the FCT Act of 1976 and the Land Use Act of 1978



3

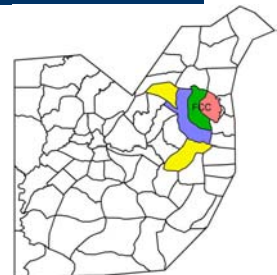
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ESTABLISHMENT OF THE FCT



- Establishment of the Federal Capital Territory, (FCT) in 1976.
- Covers a total land area of approximately 8,000 sq.km.



4

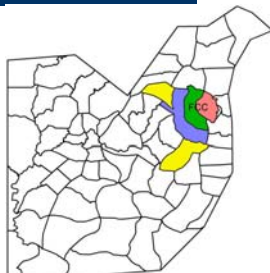
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FCT LAND RELATED DEPARTMENTS



- Land Administration
- Urban and Regional Planning
- Survey and Mapping
- Development Control
- Engineering Services
- Resettlement and Compensation
- FCT Water Board
- Abuja Environmental Protection Board, (AEPB)
- Zonal Offices
- Satellite Towns Development Agency (STDA)



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LAND ADMINISTRATION



- The City proper covers a total land area of 250 sq. kilometers
- Developed in Phases (1-4)
- Development now within phases 1-3
- Ultimate population planned for a little above 3 million people
- Current population within phases 1-2 close to 2 million people
- Rapid expansion a major problem of land administration
- Reliable and up-to-date land records a major tool for efficient land administration

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LAND RECORDS IN FCT

- All the land related Departments keep their records manually
- No proper coordination between the Departments
- Retrieval of such records often cumbersome and time consuming
- Subject to abuses such as:
 - lost of valuable documents
 - Forgery
 - Mutilations of documents etc



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LAND RECORDS



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WHY COMPUTERISE?

- Rapid expansion of the City can not be sustained with manual record keeping
- Uncoordinated operations of the land related departments within the FCT can no longer sustain an efficient land management and administration
- Need to move with time and be up-to-date



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PROJECT SCOPE

- Coordination of the Computerisation of the Cadastral and Land Registry
- Supply and install relevant Hardware and Software
- Training of FCTA/FCDA Staff on the installed software
- Provision of the necessary office space and facilities for the implementation taskforce
- Purchase of relevant data, satellite images and Aerial photos
- Delivery of the state-of-the-art Geographic Information System, integrating land maps with comprehensive data on landholders.

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OBJECTIVES

- Computerization of the Land Registry
- Computerization of the Cadastral maps of Phases 1 & 2 of the FCC
- Identification of multiple allocations and method of eliminating them
- To subsequently computerized the remaining phases of the City and the remaining part of the FCT fully

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OBJECTIVES

- Provisions of land data, as well as detailed maps of the City and those of the Area Councils
- Products at the end to include information related to ownership of plots as well as historical information such as changes in property ownership etc.
- To be able to set up Abuja Geographic Information Systems-(AGIS) as the only source of geospatial information within the FCT that would guarantee

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OBJECTIVES

- CONTINUITY
- SCALABILITY
- FLEXIBILITY
- CONSISTENCY and
- SUSTAINABILITY

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METHODOLOGY

- In executing the project the following was done
 - Visits to land related departments/agencies to create awareness and understudy their needs
 - Review of computerisation reports prepared earlier for the defunct MFCT by other Consultants
 - Identification/Classification of sources of data
 - Data Collection
 - Data Entry/Processing
 - Field Verification/Evaluation

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METHODOLOGY

- Design and Customization of Software
- Introduction/ Familiarisation of Taskforce members to GIS/LIS
- Procurement of updated Satellite Images
- Analysis of result and report writing

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PROBLEMS OF EXISTING SYSTEM

- Unattended applications
 - 105,701 total as at April 2003
 - 21,420 granted rights of occupancy
 - 84,281 applications yet to be attended to
- Multiple allocations
- Forgeries of Land Documents
- Unauthorised Bodies involved in Land Allocation
- Land Use Abuses

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PROBLEMS OF EXISTING SYSTEM

- Encroachments
- Multiple Surveys
- Revenue Generation
- Unplanned/Squatter Settlements
- Lack of current topographical base maps
- Obsolete Survey Equipment
- Rampant subdivision and redesign of plots
- Extensions beyond the FCC Master Plan Limits

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ACHIEVEMENTS SO FAR

- Hardware
 - 60 Laptops with 512MB RAM, 3.06 GHZ and 60 GB HDD
 - 12 TFT Screen PCs with 2GB RAM, 2.06 GHZ and 80 GB HDD
 - 3 Servers with 1 GB RAM, 3GHZ and 350 GB HDD
 - 2 Domain Controllers
 - 2 A0 Colour Plotter and 3 A3 laser colour printers

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ACHIEVEMENTS



19

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ACHIEVEMENTS

- Software: the installed Computer hardware runs the following software packages;
 - Windows Server 2003 with Veritas Backup Exec
 - Oracle 9i database
 - Windows XP Pro Workstation with Office Professional and Trend Micro AntiVirus
- 12 GeoMedia and 12 GeoMedia Professional
- Microsoft Visio, Adobe Photoshop, Sybase Powdesigner, Microsoft Visual Studio Professional 2003

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ACHIEVEMENTS

- Data
 - General - Aerial Photos, Satellite Images beyond phase 2
 - Map index of various scales and administrative boundaries digitized
 - "as built" drawings of districts scanned and stored in form of raster data
 - Drawings of trunk water lines scanned and store in form of raster data
- Water Board
 - Digital data for trunk water lines in AutoCAD® migrated into GIS environment
- Development Control
 - Master Plan & Land Use Plans for City scanned, georeferenced and digitized into GIS
 - Complete street net work for phases 1&2- over 660 digitised

21

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ACHIEVEMENTS

- Planning and Survey
 - Topo maps 1:10,000 scanned, clipped and georeferenced, available in GIS as raster backdrop
 - 800 layout maps
 - Digital cadastral data
 - Over 15,000 TDPs scanned
 - Over 110,000 PBs coordinates calculated from survey data and TDPs
 - Over 32,000 plots digitised
- Land Administration
 - Over 87 land register books captured
 - Ministerial Approval lists
 - Transaction registers
 - Field verification records
 - Digital photos of properties
 - Satellite images covering up to Gwagwalada acquired

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CAPABILITIES OF STAGE 1

- Can give information on
 - Landed properties
 - Cadastral maps
 - Land records
 - Land use
 - Street network
 - Engineering infrastructure
 - Trunk sewer- and water lines

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CAPABILITIES

- Can produce a variety of
 - Graphic and tabular information products such as
 - Lists
 - Report and paper maps
 - Vector and Raster database
 - The information product can be used for
 - Decision support in land allocation
 - All kinds of land related matters like
 - Detecting, documenting and resolving cases of multiple
 - Encroachment on corridors of roads

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CAPABILITIES: Asokoro Park



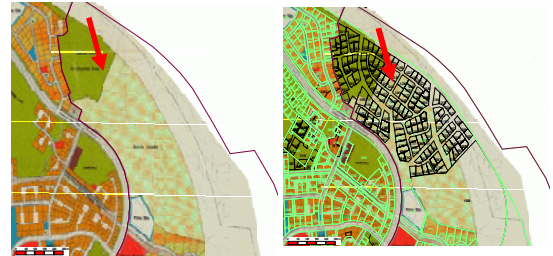
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CAPABILITIES: Maitama Sport Complex lost to residential development



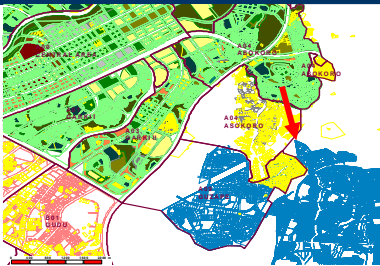
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CAPABILITIES: Extensions beyond City limit



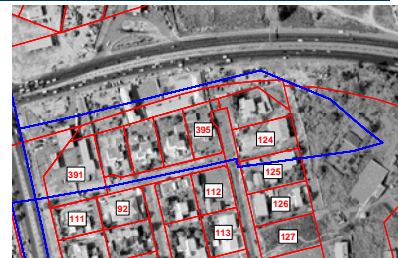
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CAPABILITIES: buildings on water mains



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CAPABILITIES: digitised water mains from AutoCAD®



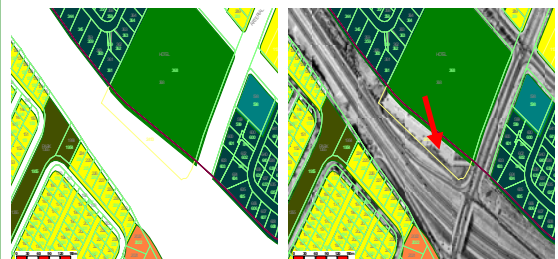
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CAPABILITIES: illegal development in road reservation



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LIMITATIONS

Key requirement

- Inclusion of integrated
- Customised GIS and LIS software
- Expected product,
 - user-defined
 - Menu-driven application
 - With point-and-click functionality
 - Such graphic user interface would enable ease of data entry and validation
 - with capabilities for automatic report generation
- This is not yet in place, ongoing stage II project expected to remedy the this limitation

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LIMITATIONS

- The software is limited
 - Restricted only to entering data from land department
- Capture of textual data from other land related departments would be taken care of in the Stage II of the project now ongoing.

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CONCLUSION

- When fully operational, a computerized cadastral and land registry will facilitate easy storage, access, analysis/modeling and presentation of geospatial data which is vital in assisting decision makers and professionals alike in efficient and effective execution of their work.
- It will also go along way in bringing sanity in the activities of the FCTA and its Agencies, improve their revenue base and put an end to the persistent land administration and management problems in the FCT.

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THANK YOU FOR YOUR ATTENTION

QUESTIONS?

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CAPABILITIES

- Water and sewer trunk lines
- As well as land use mismatches
- The System is scalable in its components hardware and software
 - Can be expanded in detail and in range to cover the whole of FCT and
 - Support all FCTA/FCDA Departments and its Agencies



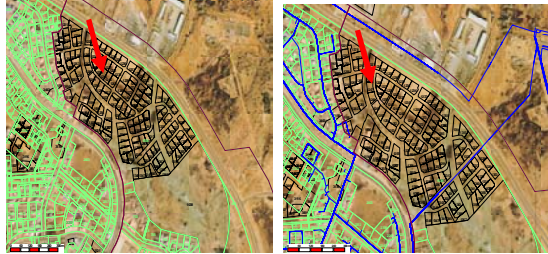
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CAPABILITIES: Maitama Sport Complex
lost to residential development



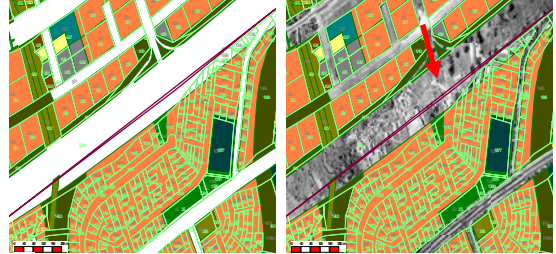
37

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CAPABILITIES: illegal development
in road reservation



38

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