

Article

# A Systematic Approach of Optimal Land-Use Planning by Applying Geo-Environmental Techniques: A Case Study

Essam A. Morsy <sup>1,2</sup>

<sup>1</sup> Department of Environmental and Health Research, Umm Al-Qura University, P.O. Box 6282, Makkah 21555, Saudi Arabia; [essamibrahim@uqu.edu.sa](mailto:essamibrahim@uqu.edu.sa)

<sup>2</sup> Geophysics Department, Faculty of Science, Cairo University, Giza P.O. Box 12613, Egypt

**Abstract:** This article demonstrates the capabilities and integrity of the environmental geological and geophysical techniques for planning the suitability of the extension of Helwan city for construction and engineering purposes. The geological and topographical mapping were utilized as well as environmental geophysical techniques (seismic refraction, ground penetrating radar (GPR), and resistivity soundings) for optimal land-use planning. The seismic refraction profiles were conducted to evaluate the geotechnical characteristics of the bedrock, GPR was applied to define the main subsurface reflectors, and the geoelectrical resistivity survey was used to identify the subsurface stratigraphic sequence and the distribution of main structural elements impacting the investigated area. The integrated results and findings of the environmental geological and geophysical survey inferred two major distinctive subsurface layers: a thin surface layer represented by highly weathered limestone, with an average thickness of 3 m, and a bottom layer equivalent to the bedrock composed of hard limestone. In addition, GPR performed an analysis of two remarkable subsurface layers, which supported the generated model of other geophysical surveying techniques. Finally, all the geological and various geophysical techniques were integrated and merged to generate the optimal land-use plan of the extension of Helwan city for construction and engineering purposes and to avoid high-risk areas to reserve the sustainability of the new urban communities.

**Keywords:** integrity; environmental; geological; geophysical; sustainability



**Citation:** Morsy, E.A. A Systematic Approach of Optimal Land-Use Planning by Applying Geo-Environmental Techniques: A Case Study. *Appl. Sci.* **2023**, *13*, 1749. <https://doi.org/10.3390/app13031749>

Academic Editor: Jianbo Gao

Received: 17 November 2022

Revised: 15 January 2023

Accepted: 27 January 2023

Published: 30 January 2023



Copyright: © 2023 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

As populations grow, available land will become a scarce natural resource, especially for the already-existing urban communities. As more land is planned to be developed, effective planning will counteract the negative effects of its use and development. The numerous benefits of effective land-use planning can include the following: creating a generic framework for the proposed urban project, aiding the anticipation of the future plan of the investigated site, implementing sustainable infrastructure utilities, direct positive impact on the local urban economy, optimal use and conservation of natural resources along with protection of the environment, minimizing the associated risks of the natural hazards, and avoiding land-use conflicts [1–3].

For an optimal planning and effective development of the investigated site, a suggested joint integrated approach of geophysical methods including the electrical resistivity, seismic refraction methods, ground penetrating radar, and geological mapping were implemented throughout the study area. Geophysical indicators, including electrical resistivity, seismic velocity, and electromagnetic signature, give a clear image about the subsurface layering sequence and the degree of rock weathering or fracturing [4,5].

The investigated site is situated at the southeastern sector of Cairo, Egypt, which was designated for a proposed residential extension of the already-existing Helwan city, to reduce/minimize the random distribution of the unplanned urbanization in addition to providing millions of job opportunities, which takes into account the provision of a

# Land Use Planning Abstracts Volume 4

**Anthony S. Fauci**



## Land Use Planning Abstracts Volume 4:

**Energy Abstracts for Policy Analysis** ,1980      **Land Use Planning Abstracts** ,1975      **Urban Mass Transportation Abstracts** ,1982      **Scientific and Technical Aerospace Reports** ,1979      **Highway Noise; a Design Guide for Highway Engineers** Bolt, Beranek, and Newman,Bolt, Beranek, and Newman, inc,1971 Various methods of assessing noise loudness and noise annoyance are reviewed and explained sources types and intensities of traffic noise are noted typical means of abatement and attenuation are described design criteria for various land uses ranging from low density to industrial are suggested and compared with the results of previous BBN and British systems for predicting annoyance and complaint and a design guide for predicting traffic noise capable of being programmed for batch and on line computer applications is presented in form suitable for use as a working tool A flow diagram describes the interrelationships of elements in the traffic noise prediction methodology and each element is discussed in detail in the text The text is presented of a tape recording that takes the listener through a series of traffic situations with such variables as traffic distance flow velocity distance outdoors and indoors and presence or absence of absorbers and attenuators      *Urban Transportation Abstracts* ,1984      **Library Searching** Jacquelyn M. Morris,Elizabeth A. Elkins,1978      *U.S. Government Research & Development Reports* ,1970      **Behavior & Society** ,1979      **Index of Conference Proceedings** British Library. Document Supply Centre,2001      Government Reports Announcements & Index ,1978      **Abstract Journal in Earthquake Engineering** ,1981      **Selected Water Resources Abstracts** ,1991      **Energy Research Abstracts** ,1990      *Bibliography and Index of Geology* ,1977      *Review of Potential Host Rocks for Radioactive Waste Disposal in the Southeast United States* Dames & Moore,1980      **Host Bibliographic Record for Boundwith Item Barcode 30112124661692 and Others** ,2013      Environmental Pollution & Control ,1979      **Government Reports Annual Index** ,1982      *Guidelines for Watershed Management* Food and Agriculture Organization of the United Nations. Forest Conservation and Wildlife Branch,1977

Thank you totally much for downloading **Land Use Planning Abstracts Volume 4**. Maybe you have knowledge that, people have look numerous times for their favorite books later than this Land Use Planning Abstracts Volume 4, but end happening in harmful downloads.

Rather than enjoying a fine ebook bearing in mind a mug of coffee in the afternoon, then again they juggled later some harmful virus inside their computer. **Land Use Planning Abstracts Volume 4** is simple in our digital library an online permission to it is set as public in view of that you can download it instantly. Our digital library saves in merged countries, allowing you to acquire the most less latency period to download any of our books in the manner of this one. Merely said, the Land Use Planning Abstracts Volume 4 is universally compatible later than any devices to read.

<https://auld.rmjm.com/public/publication/index.jsp/Teaching%20Your%20Child%20To%20Handle%20Peer%20Pressure.pdf>

## **Table of Contents Land Use Planning Abstracts Volume 4**

1. Understanding the eBook Land Use Planning Abstracts Volume 4
  - The Rise of Digital Reading Land Use Planning Abstracts Volume 4
  - Advantages of eBooks Over Traditional Books
2. Identifying Land Use Planning Abstracts Volume 4
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Land Use Planning Abstracts Volume 4
  - User-Friendly Interface
4. Exploring eBook Recommendations from Land Use Planning Abstracts Volume 4
  - Personalized Recommendations
  - Land Use Planning Abstracts Volume 4 User Reviews and Ratings

- Land Use Planning Abstracts Volume 4 and Bestseller Lists
- 5. Accessing Land Use Planning Abstracts Volume 4 Free and Paid eBooks
  - Land Use Planning Abstracts Volume 4 Public Domain eBooks
  - Land Use Planning Abstracts Volume 4 eBook Subscription Services
  - Land Use Planning Abstracts Volume 4 Budget-Friendly Options
- 6. Navigating Land Use Planning Abstracts Volume 4 eBook Formats
  - ePub, PDF, MOBI, and More
  - Land Use Planning Abstracts Volume 4 Compatibility with Devices
  - Land Use Planning Abstracts Volume 4 Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Land Use Planning Abstracts Volume 4
  - Highlighting and Note-Taking Land Use Planning Abstracts Volume 4
  - Interactive Elements Land Use Planning Abstracts Volume 4
- 8. Staying Engaged with Land Use Planning Abstracts Volume 4
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Land Use Planning Abstracts Volume 4
- 9. Balancing eBooks and Physical Books Land Use Planning Abstracts Volume 4
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Land Use Planning Abstracts Volume 4
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Land Use Planning Abstracts Volume 4
  - Setting Reading Goals Land Use Planning Abstracts Volume 4
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Land Use Planning Abstracts Volume 4
  - Fact-Checking eBook Content of Land Use Planning Abstracts Volume 4
  - Distinguishing Credible Sources

13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

### **Land Use Planning Abstracts Volume 4 Introduction**

Free PDF Books and Manuals for Download: Unlocking Knowledge at Your Fingertips In today's fast-paced digital age, obtaining valuable knowledge has become easier than ever. Thanks to the internet, a vast array of books and manuals are now available for free download in PDF format. Whether you are a student, professional, or simply an avid reader, this treasure trove of downloadable resources offers a wealth of information, conveniently accessible anytime, anywhere. The advent of online libraries and platforms dedicated to sharing knowledge has revolutionized the way we consume information. No longer confined to physical libraries or bookstores, readers can now access an extensive collection of digital books and manuals with just a few clicks. These resources, available in PDF, Microsoft Word, and PowerPoint formats, cater to a wide range of interests, including literature, technology, science, history, and much more. One notable platform where you can explore and download free Land Use Planning Abstracts Volume 4 PDF books and manuals is the internet's largest free library. Hosted online, this catalog compiles a vast assortment of documents, making it a veritable goldmine of knowledge. With its easy-to-use website interface and customizable PDF generator, this platform offers a user-friendly experience, allowing individuals to effortlessly navigate and access the information they seek. The availability of free PDF books and manuals on this platform demonstrates its commitment to democratizing education and empowering individuals with the tools needed to succeed in their chosen fields. It allows anyone, regardless of their background or financial limitations, to expand their horizons and gain insights from experts in various disciplines. One of the most significant advantages of downloading PDF books and manuals lies in their portability. Unlike physical copies, digital books can be stored and carried on a single device, such as a tablet or smartphone, saving valuable space and weight. This convenience makes it possible for readers to have their entire library at their fingertips, whether they are commuting, traveling, or simply enjoying a lazy afternoon at home. Additionally, digital files are easily searchable, enabling readers to locate specific information within seconds. With a few keystrokes, users can search for keywords, topics, or phrases, making research and finding relevant information a breeze. This efficiency saves time and effort, streamlining the learning process and allowing individuals to focus on extracting the information they need. Furthermore, the availability of free PDF books and manuals fosters a culture

of continuous learning. By removing financial barriers, more people can access educational resources and pursue lifelong learning, contributing to personal growth and professional development. This democratization of knowledge promotes intellectual curiosity and empowers individuals to become lifelong learners, promoting progress and innovation in various fields. It is worth noting that while accessing free Land Use Planning Abstracts Volume 4 PDF books and manuals is convenient and cost-effective, it is vital to respect copyright laws and intellectual property rights. Platforms offering free downloads often operate within legal boundaries, ensuring that the materials they provide are either in the public domain or authorized for distribution. By adhering to copyright laws, users can enjoy the benefits of free access to knowledge while supporting the authors and publishers who make these resources available. In conclusion, the availability of Land Use Planning Abstracts Volume 4 free PDF books and manuals for download has revolutionized the way we access and consume knowledge. With just a few clicks, individuals can explore a vast collection of resources across different disciplines, all free of charge. This accessibility empowers individuals to become lifelong learners, contributing to personal growth, professional development, and the advancement of society as a whole. So why not unlock a world of knowledge today? Start exploring the vast sea of free PDF books and manuals waiting to be discovered right at your fingertips.

### **FAQs About Land Use Planning Abstracts Volume 4 Books**

**What is a Land Use Planning Abstracts Volume 4 PDF?** A PDF (Portable Document Format) is a file format developed by Adobe that preserves the layout and formatting of a document, regardless of the software, hardware, or operating system used to view or print it. **How do I create a Land Use Planning Abstracts Volume 4 PDF?** There are several ways to create a PDF: Use software like Adobe Acrobat, Microsoft Word, or Google Docs, which often have built-in PDF creation tools. Print to PDF: Many applications and operating systems have a "Print to PDF" option that allows you to save a document as a PDF file instead of printing it on paper. Online converters: There are various online tools that can convert different file types to PDF. **How do I edit a Land Use Planning Abstracts Volume 4 PDF?** Editing a PDF can be done with software like Adobe Acrobat, which allows direct editing of text, images, and other elements within the PDF. Some free tools, like PDFescape or Smallpdf, also offer basic editing capabilities. **How do I convert a Land Use Planning Abstracts Volume 4 PDF to another file format?** There are multiple ways to convert a PDF to another format: Use online converters like Smallpdf, Zamzar, or Adobe Acrobats export feature to convert PDFs to formats like Word, Excel, JPEG, etc. Software like Adobe Acrobat, Microsoft Word, or other PDF editors may have options to export or save PDFs in different formats. **How do I password-protect a Land Use Planning Abstracts Volume 4 PDF?** Most PDF editing software allows you to add password protection. In Adobe Acrobat, for instance, you can go to "File" -> "Properties" -> "Security" to set a password to

restrict access or editing capabilities. Are there any free alternatives to Adobe Acrobat for working with PDFs? Yes, there are many free alternatives for working with PDFs, such as: LibreOffice: Offers PDF editing features. PDFsam: Allows splitting, merging, and editing PDFs. Foxit Reader: Provides basic PDF viewing and editing capabilities. How do I compress a PDF file? You can use online tools like Smallpdf, ILovePDF, or desktop software like Adobe Acrobat to compress PDF files without significant quality loss. Compression reduces the file size, making it easier to share and download. Can I fill out forms in a PDF file? Yes, most PDF viewers/editors like Adobe Acrobat, Preview (on Mac), or various online tools allow you to fill out forms in PDF files by selecting text fields and entering information. Are there any restrictions when working with PDFs? Some PDFs might have restrictions set by their creator, such as password protection, editing restrictions, or print restrictions. Breaking these restrictions might require specific software or tools, which may or may not be legal depending on the circumstances and local laws.

#### **Find Land Use Planning Abstracts Volume 4 :**

teaching your child to handle peer pressure

*team enterprise solution*

*teachings of lama thubten yeshe*

*teachings of presidents of the church br*

*teaching aids*

~~teaching fiction in the primary school clabroom approaches to narratives~~

technical control modern pn pianist

tears of strangers a family memoir

**teaching authority in the early church message of the fathers of the church 14**

technical readout 3025 battletech

~~teaching problems and the problems of teaching~~

~~teaching children science a discovery approach~~

**teaching first grade a practical guide**

~~technique of fine art lithography~~

~~teachings of the cat zen masters~~



## Land Use Planning Abstracts Volume 4 :

Digital Film and Television Production < University of Florida To graduate with this major, students must complete all university, college, and major requirements. Department Information. The Media Production, Management, ... Film and Media Studies - UF Catalog - University of Florida Courses. ANT 3390 Visual Anthropology 3 Credits. Grading Scheme: Letter Grade. Uses photography and film as tools and products of social science ... Media Production, Management, and Technology - UF Catalog The University of Florida's Media Production, Management, and Technology program is one of the most comprehensive in the country, offering specializations ... Film and Media Studies - Department of English Welcome · Undergraduate Studies · Graduate Studies · About Our Faculty · Courses · Filmmaking · UF · Stay Connected. Photography » Creative Services » The information will help ensure that your photo shoot will go smoothly. Our goal is to produce the best images that tell your stories in order to further the ... Production Guidelines UF Health Communications uses the project management system, Asana, to input and manage our workload. Print Production Timeline The purpose of the print ... Plan & Market Events - Filming & Photography in the MSC Filming in the Marshall Student Center may not interfere with building operations and requires prior approval. University Departments, Current Students, and ... College of Motion Picture Arts - Florida State University Rigorous, hands-on programs (BFA or MFA) that provide a story-first education and prepare students for a career in film with industry-standard skills. Filming location matching "university of florida, gainesville ... Exclude · Steve Martin, Keanu Reeves, Martha Plimpton, Tom Hulce, Rick Moranis, Jason. 1. · Just Cause (1995). 2. · Run the Race (2018). 3. · The Naked Ape (1973) ... Are there any movies about UF? : r/ufl The Scream horror movie franchise is based off of the UF/Santa Fe murders in the 1990s. Even though they changed the story so it takes place ... Wordchains Wordchains. L.M. Guron. Wordchains is a group reading test, designed to act as a possible indicator for pupils with specific learning difficulties such as ... Miller-Guron, L. (1999). Word chains A word reading test ... Two experimental versions of this unique, silent, group-administered screener of reading fluency and comprehension require adolescents and adults either to read ... Wordchains: A Word Reading Test for All Ages Bibliographic information ; Title, Wordchains: A Word Reading Test for All Ages ; Author, Louise Miller-Guron ; Publisher, NFER-Nelson ; Length, 80 pages. Wordchains Test Nfer Nelson Pdf It will agreed ease you to look guide Wordchains Test Nfer Nelson pdf as you such as. ... If you goal to download and install the Wordchains Test Nfer Nelson pdf, ... Rapid Assessment of Beginning Reading Proficiency This test has great potential as a quick assessment of word recognition skills. In this test, children are required to divide chains of letters (e.g., ... WordSword: An Efficient Online Word Reading Assessment for ... Sep 1, 2023 — The test targets word identification skills. The examinee identifies letters in the first part and reads aloud individual words in the second ... NFER Tests NFER's termly tests for years 1-6 enable reliable attainment and progress monitoring. Benefit from national benchmarking data and a free online analysis ... Unique Screener of Reading Fluency and Comprehension ... by SM Bell · 2012 · Cited by 5 — Word chains: A word

reading test for all ages. Windsor, England: NFER-Nelson. National Institute of Child Health and Human Development (2000). Report of the ... A technique for group screening of dyslexia among adults by U Wolff · 2003 · Cited by 92 — Wordchains. A word reading test for all ages. Windsor: NFER-Nelson. Google Scholar. Miller Guron, L., & Lundberg, I. (2003). Identifying ... The Space Shuttle Decision Dec 31, 1971 — ... THE SPACE SHUTTLE DECISION the University of Michigan's Department of Aerospace Engineering, the librarian Kenna Gaynor helped as well ... contents Space Shuttle: The Last Moves. The Hinge of Decision. Loose Ends I: A Final Configuration. Loose Ends II: NERVA and Cape Canaveral. Awarding the Contracts. The Space Shuttle Decision By T A Heppenheimer – NSS As space resources are discovered and developed more and more people will find it advantageous to live and work in space, culminating in a sustainable ecosystem ... The Space Shuttle Decision: NASA's... by Heppenheimer, T A This is a detailed account of how the idea of a reusable shuttle to get people into low Earth orbit, evolved from the Werner Von Braun influenced articles in ... The Space Shuttle Decision: NASA's Search for a ... The OMB was a tougher opponent. These critics forced NASA to abandon plans for a shuttle with two fully reusable liquid-fueled stages, and to set out on a ... The Space Shuttle Decision: Chapter 1 The X-15 ascended into space under rocket power, flew in weightlessness, then reentered the atmosphere at hypersonic speeds. With its nose high to reduce ... The Space Shuttle Decision: NASA's Search ... - Project MUSE by A Roland · 2001 — what kind of shuttle to build. The first decision replaced the Apollo program's Saturn rocket with a reusable launch vehicle intended to lower costs,. The Space Shuttle Decision: NASA's Search for a ... The Space Shuttle Decision: NASA's Search for a Reusable Space Vehicle Issue 4221 of NASA SP, United States. National Aeronautics and Space Administration space shuttle decision The Space Shuttle decision - NASA's Search for a Reusable Space Vehicle (The NASA History Series NASA SP-4221) by T.A. Heppenheimer and a great selection of ... The Space Shuttle Decision: NASA's Search for a ... This book portrays NASA's search for continued manned space exploration after the success of Apollo. During 1969, with Nixon newly elected and the first ...