Secure Digital Archiving for Engineering and Municipal Data Training Course



19 - 23 Oct 2026

Cape town

4600 € (Per Person)

Ref: #CAD2537_271606

Course Introduction / Overview:

The management of sensitive engineering and municipal records has transitioned from physical vaults to complex digital ecosystems, presenting unprecedented challenges in security, preservation, and accessibility. This specialized training course is meticulously designed to address the unique complexities of safeguarding digital assets such as architectural blueprints, land registry data, public works schematics, and confidential municipal correspondence. In an era where data integrity is paramount, the principles of secure digital archiving are no longer an IT-exclusive concern but a core organizational competency. Drawing upon foundational concepts from archival science experts like Luciana Duranti and insights from seminal works on digital preservation, this program provides a comprehensive roadmap for establishing and maintaining a robust digital archive. BIG BEN Training Center offers this course to empower professionals with the strategic knowledge and practical skills needed to protect critical infrastructure data and public records against unauthorized access, corruption, and technological obsolescence, ensuring their long-term authenticity and usability for future generations. This course is the definitive guide to navigating the legal, technical, and operational landscape of secure digital archiving in these critical sectors.

Target Audience / This training course is suitable for:

- Records Managers and Archivists.
- IT Managers and Cybersecurity Specialists.
- Municipal Clerks and Public Administrators.
- Civil Engineers and Engineering Project Managers.
- Urban Planners and GIS Specialists.
- Compliance Officers and Legal Counsel.
- Document Control Managers.
- Public Works Department Staff.

Target Sectors and Industries:

- Government and Municipal Agencies.
- Civil Engineering and Construction Firms.
- Architectural and Urban Planning Consultancies.
- Public Utilities and Infrastructure Management.
- Transportation and Transit Authorities.
- Environmental and Regulatory Bodies.
- Real Estate and Land Development Companies.

Target Organizations Departments:

- Information Technology (IT) and Cybersecurity.
- Records and Information Management (RIM).
- Engineering and Public Works.
- Legal and Compliance Departments.
- Urban Planning and Development.
- Administration and Operations.
- Geographic Information Systems (GIS) Department.

Course Offerings:

By the end of this course, the participants will have able to:

- Develop a comprehensive digital archiving strategy tailored to engineering and municipal requirements.
- Implement robust security protocols, including encryption and access control, for sensitive data.
- Master best practices for digitizing physical records while maintaining their authenticity and integrity.
- Create and apply effective metadata schemas for engineering drawings and municipal documents.
- Establish compliant records retention and disposition schedules for digital assets.
- Conduct risk assessments to identify vulnerabilities in digital archiving systems.
- Formulate a disaster recovery and business continuity plan for critical digital records.
- Evaluate and select appropriate technologies and platforms for long-term digital preservation.
- Ensure compliance with legal frameworks such as public records acts and data privacy regulations.
- Manage the lifecycle of complex digital objects like CAD, BIM, and GIS files.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, practical, and highly interactive, moving beyond theoretical lectures to foster tangible skill development. This course employs a blended learning approach that combines expert-led presentations with hands-on exercises and collaborative problem-solving. Participants will engage with real-world case studies analyzing successful digital archiving projects in municipal governments and major engineering firms, as well as cautionary tales of data breaches and record loss. A significant portion of the training will be dedicated to group workshops where attendees will draft mock archiving policies, design security frameworks, and develop risk mitigation plans. These interactive sessions encourage peer-to-peer learning and allow for the exchange of diverse professional experiences. Our instructors facilitate a dynamic environment, providing continuous feedback and guiding participants through practical simulations of archiving workflows. The methodology emphasizes critical thinking and strategic planning, ensuring that attendees leave not just with knowledge, but with the confidence and competence to implement secure and effective digital archiving systems within their own organizations.

Course Agenda (Course Units):

Unit One: Foundations of Secure Digital Archiving

- Introduction to Digital Archiving Principles.
- The Unique Challenges of Engineering and Municipal Records.
- Legal and Regulatory Frameworks for Public and Sensitive Data.
- Understanding ISO 15489 for Records Management.
- Key Terminology: Authenticity, Integrity, Reliability, and Usability.
- The Digital Record Lifecycle from Creation to Disposition.
- Comparing Physical vs. Digital Archiving Risks and Benefits.

Unit Two: Designing the Digital Archive Infrastructure

- Selecting Storage Solutions: On-Premise, Cloud, and Hybrid Models.
- Core Security Principles: Confidentiality, Integrity, and Availability (CIA Triad).
- Implementing Role-Based Access Control (RBAC) Policies.
- Data Encryption Standards for Data at Rest and in Transit.
- Hardware and Software Considerations for Long-Term Preservation.
- Network Security Measures to Protect the Archive.
- Vendor Assessment and Due Diligence for Archiving Solutions.

Unit Three: Archival Processes and Workflow Management

- Best Practices for Digitization and Scanning of Sensitive Documents.
- Developing and Applying Metadata Standards (e.g., Dublin Core).
- Version Control Strategies for Engineering Drawings (CAD/BIM).
- Establishing Naming Conventions and File Organization Systems.
- Workflow for Ingesting, Managing, and Accessing Digital Records.
- Implementing and Auditing Records Retention Schedules.
- Quality Assurance and Control in the Archiving Process.

Unit Four: Advanced Security and Compliance

- Conducting a Threat and Risk Assessment for Your Digital Archive.
- Developing a Comprehensive Disaster Recovery Plan.
- Business Continuity Planning for Archival Systems.
- Managing E-Discovery and Public Records Requests (FOIA).
- Digital Signatures and Ensuring Non-Repudiation.
- Auditing and Monitoring Access Logs for Suspicious Activity.
- Navigating Data Sovereignty and Cross-Border Data Issues.

Unit Five: Long-Term Preservation and Strategic Governance

- Understanding the Challenge of Digital Obsolescence (Hardware and Software).
- Strategies for Long-Term Digital Preservation (LTDP).
- Data Migration, Emulation, and Normalization Techniques.
- The Role of Artificial Intelligence (AI) in Automated Archiving.
- Using Blockchain for Ensuring Record Immutability and Integrity.
- Developing an Information Governance Framework.
- Creating a Strategic Roadmap and Gaining Stakeholder Buy-In.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

Considering the rapid evolution of technology, how can an organization balance the need for long-term data accessibility (over 50+ years) with the risk of format obsolescence and escalating storage costs?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by uniquely converging the distinct and highly regulated worlds of engineering documentation and municipal records management. Unlike generic IT security or records management courses, it directly addresses the specific, complex challenges inherent to these sectors. Participants will not just learn about data encryption; they will learn how to apply it to protect large-scale CAD and BIM files without compromising usability for project teams. The curriculum moves beyond standard archival theory to provide practical strategies for managing the lifecycle of GIS data, public works schematics, and sensitive zoning documents, all of which have unique legal and operational requirements. Furthermore, the course emphasizes a strategic governance perspective, teaching professionals how to build a business case for investment in digital preservation and align their archiving strategy with broader organizational goals. By focusing on the intersection of technology, compliance, and sector-specific workflows, it equips attendees with a holistic and immediately applicable skill set that is rarely found in a single training program.