DOCUMENT for life.

PLAN
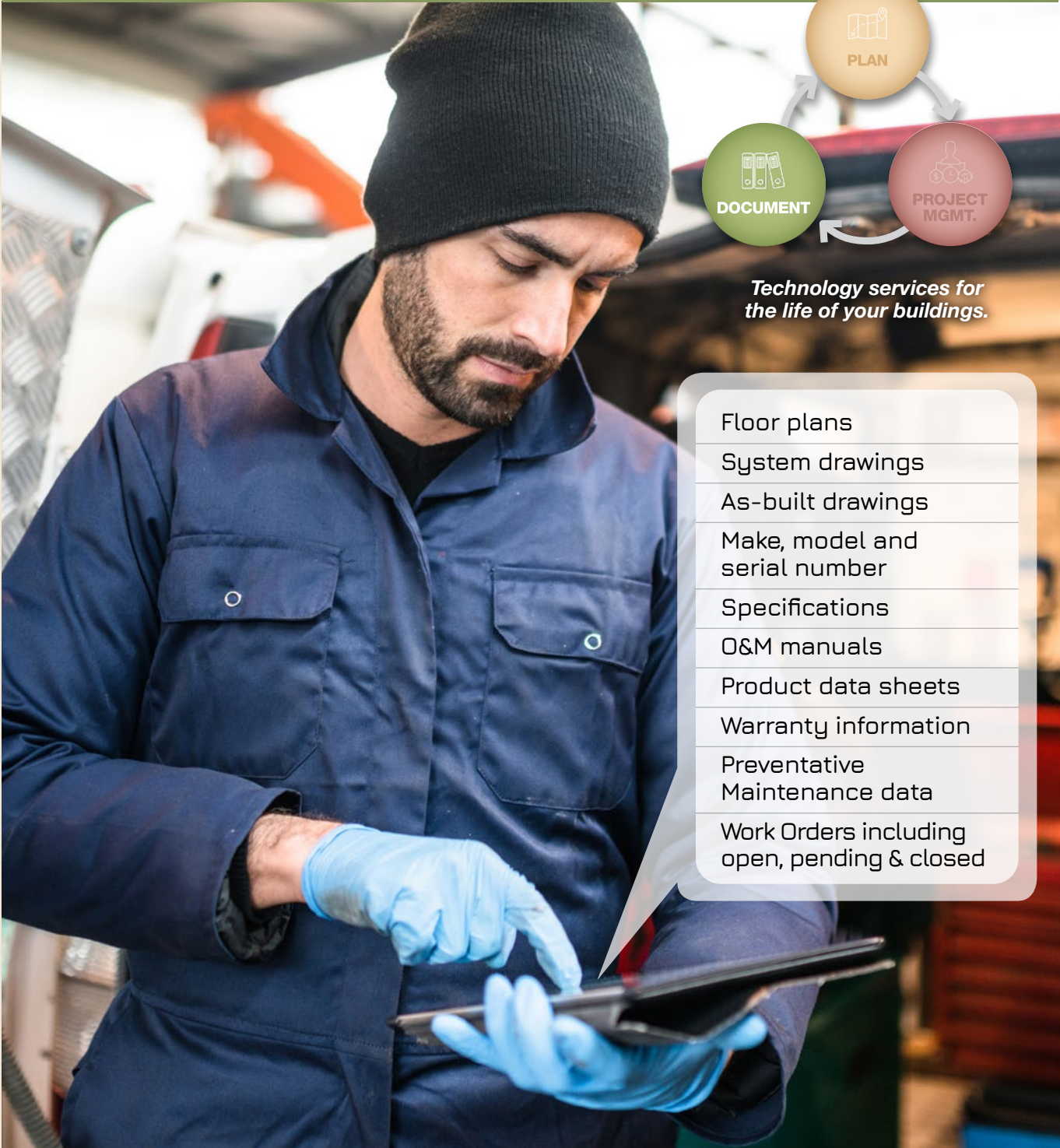
DOCUMENT

PROJECT MGMT.

Technology services for the life of your buildings.

Floor plans

System drawings

As-built drawings

Make, model and serial number

Specifications

O&M manuals

Product data sheets

Warranty information

Preventative Maintenance data

Work Orders including open, pending & closed

Get more from your building systems.
Improve operations and extend systems' lives with our Documentation Services.

Archi-Technology
Technology Consultants LLC

Connecting people, technology and buildings.

GSA Contract Holder
Contract 47A20D0018

How a good facilities documentation system can help your district do more with less.

Running efficient school district facilities has never been more challenging.

From the need to upgrade building MEP and technology systems with reduced budgets to delivering new seemingly non-stop COVID-mandated processes and procedures, facility directors and their staffs are stretched thinner than ever.

To meet these myriad challenges, everyone needs to think and act more strategically to do more with less in an ever-changing environment.

> *Effective facility data maintenance enables more effective work processes at multiple levels*

Centralizing the storage of facility drawings and data into a unified, secure digital repository is one initiative that allows facility managers, staff, and vendors to improve operational efficiency.

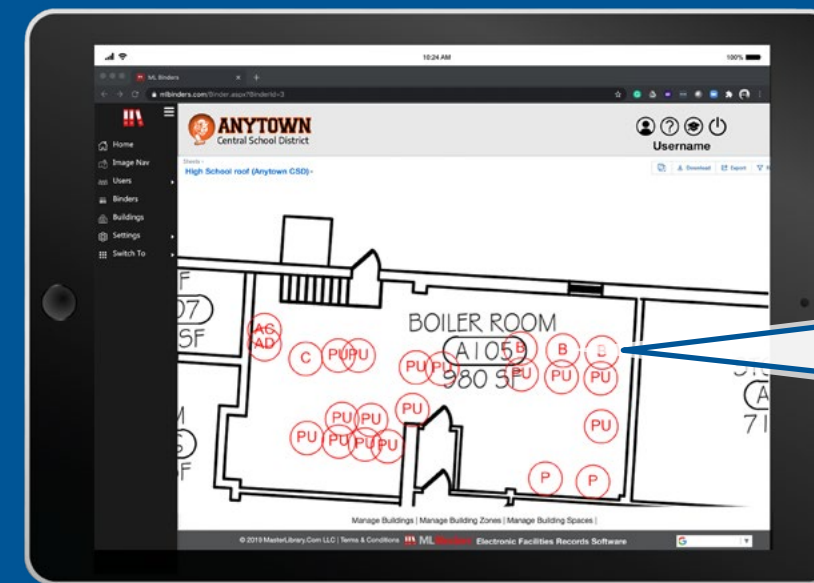A recent NIST study "noted the importance of effectively maintaining facility data for improved building services. Effective facility data maintenance enables more effective work processes at multiple levels"[1]:

- Eliminates additional trips to the same location by providing accurate field conditions and maintenance information before leaving the office.
- Increases completeness in Preventive Maintenance Work Orders through accurate equipment inventory.
- Reduces costs for repairs by providing faster response times to emergency Work Orders.
- Provides mobile access to linked/integrated data eliminating making trips back to the office.
- Reduces O&M contract costs from 3% — 6% due to incomplete equipment inventories.

There are other long-term benefits to taking an Electronic Facility Records (EFR) approach to your district's facilities documentation including succession planning and knowledge capture.

Let Archi-Technology be your guide and assistant to create an end-to-end facilities data management solution specifically customized to your district's short- and long-term needs.

[1] NIST study on the Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry. View source.

How accessible and secure are your facility plans and building systems information?

Get more from what you've got with our facilities Documentation Services.

ASSET NAME: Boiler

MLID : 2

Building : High School

Space : Boiler Room

Barcode : 7695045047

Vendor : Burnham Commercial Boilers

Asset Cost : $24,900.00

Installation Date : 9/22/2016

Description : High School Boiler

Assigned Users :

Find any facility system or component data—including drawings—in 30 seconds or less.

Create a virtual plan room for staff and vendors

If your NYS school district's facility documentation "system" primarily consists of drawing rolls and hard-copy documents, consider the benefits of moving to an Electronic Facility Records (EFR) system:

- Reduce or eliminate AMEP and technology building systems downtime.
- Reduce service call frequency, duration and expenses.
- Increase the usable lives of facility systems.

Archi-Technology LLC can guide your district through the development of an EFR Management System that allows authorized staff and vendors to find any facility-related data or drawing in 30 seconds or less.

For NYS school districts, our Documentation services are BOCES-aidable and also available through our federal GSA contract.

GSA Contract Holder
Contract 47A20D0018

qualifies for **BOCES** aid in NYS

What are Electronic Facility Records (EFR)?

Applying new technologies to brick-and-mortar buildings

Computer-Aided Drawing (CAD)

Electronic Facility Records (EFR)

Databases

The Internet

While many "old school" industries have successfully harnessed the power of technology, the facilities management industry lags the adoption of high-tech solutions to long-standing problems.

Witness the state of most district plan rooms where the storage and accessibility of important facility drawings and data is disorganized at best and chaotic for many.

Facility management executives can take control of their plan rooms by taking an EFR approach to plant documentation that overlays CAD, internet, and database technologies.
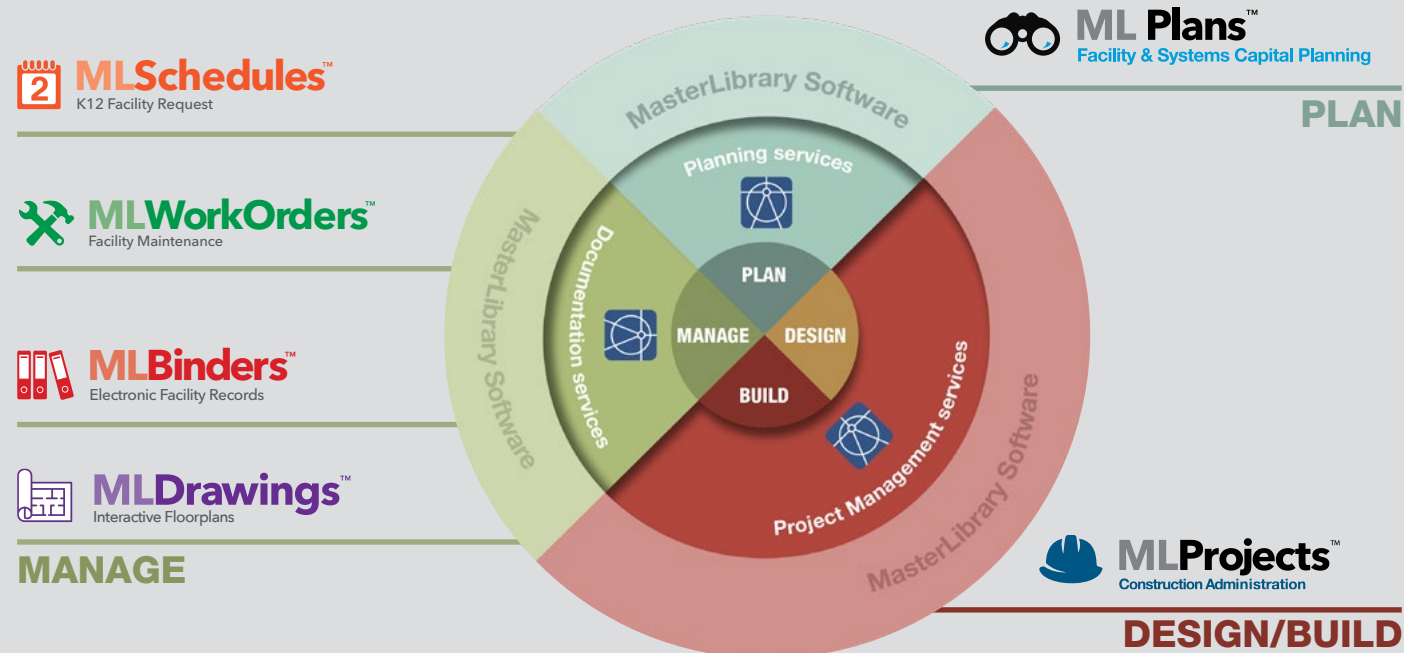
Effective EFR systems are available due to the ubiquity of three key underlying technologies.
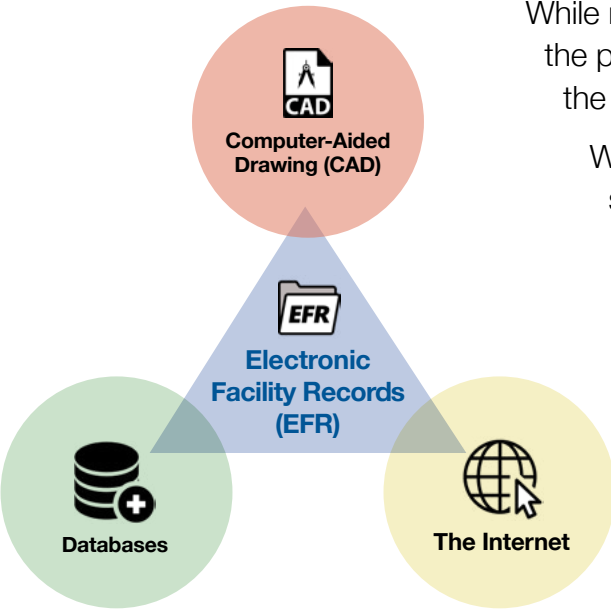
EFR is Electronic Records Management for facilities data.

## Professional services and software for every phase of a building

*Archi-Technology's **Documentation services (middle ring)** use its own **MasterLibrary software** applications (outer) to support client EFR initiatives throughout every phase of a **facility's life (inner)**.*

MLSchedules™
K12 Facility Request

MLWorkOrders™
Facility Maintenance

MLBinders™
Electronic Facility Records

MLDrawings™
Interactive Floorplans

MANAGE

ML Plans™
Facility & Systems Capital Planning

PLAN

MLProjects™
Construction Administration

DESIGN/BUILD

EFR compared to Electronic Medical Records

Electronic Medical Records (EMR) capture data throughout a patient's lifetime to improve decision-making by doctors and specialists. Collecting EMR data from birth through childhood provides better health and quality-of-life outcomes when the patient reaches adulthood.

Electronic Facility Records (EFR) does the same thing as EMR but for the life of a building. EFR data captured during the Plan, Design and Build stages has value to facility managers and specialists for building automation and daily operations in the Manage phase.
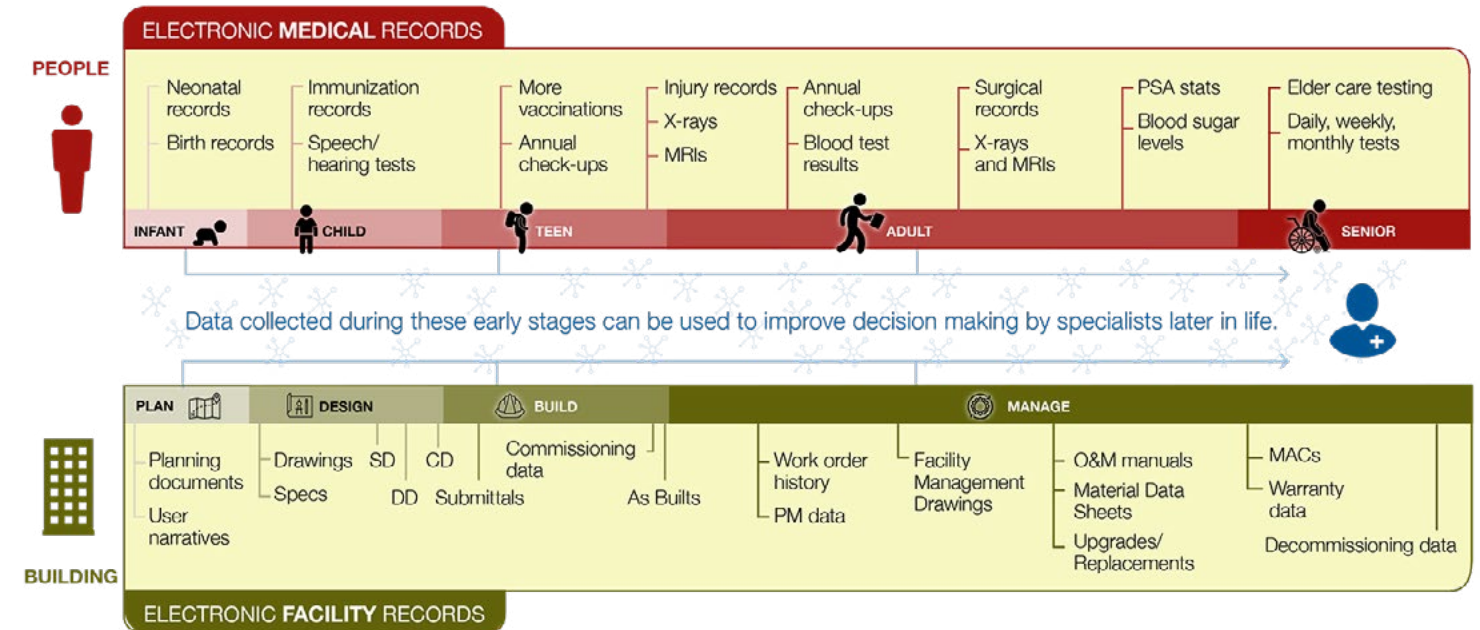
## EFR data types: Graphical and data points

Like **EMR** for people, **EFR organizes** two types of data around **systems** (e.g., Mechanical, Electrical, Technology) and **components** (e.g., air handlers)—discrete **data points** that can be entered in a spreadsheet or database, and **graphical** representations such as plans, drawings and photographs.
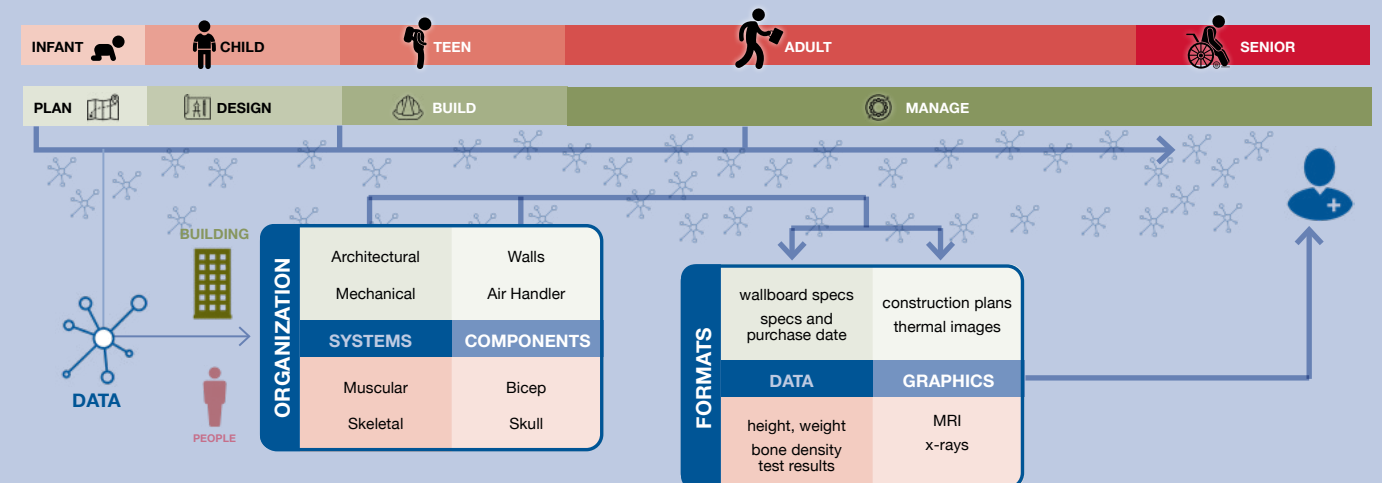
Manage and extend asset life with an EFR platform at your school district.

Meet your district's virtual Facility Control Center.

Leverage existing facilities data—including drawings—to develop an Electronic Facility Records Management System (EFRMS) at your district. 24/7 control and reporting are as close as your computer, tablet, or smartphone.
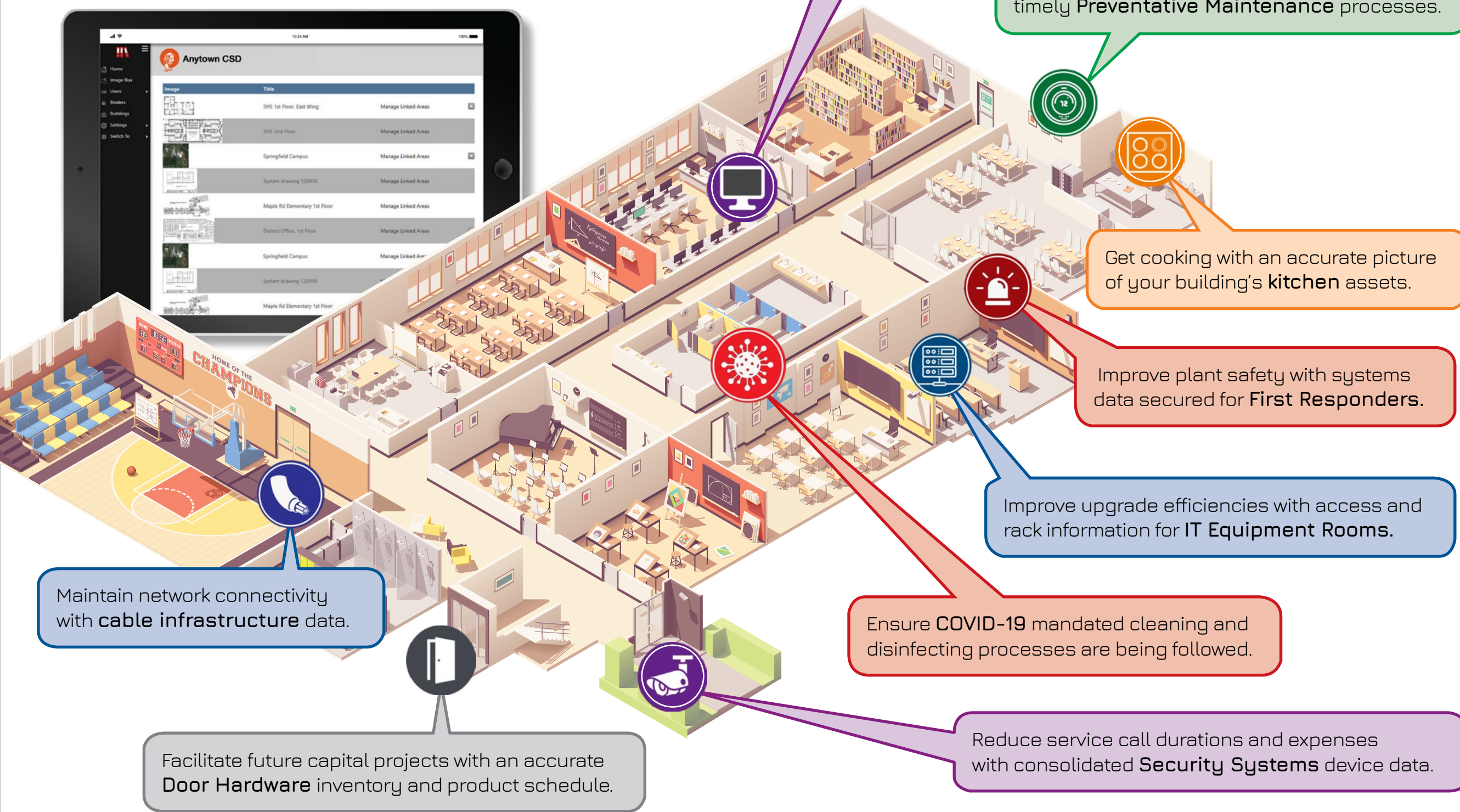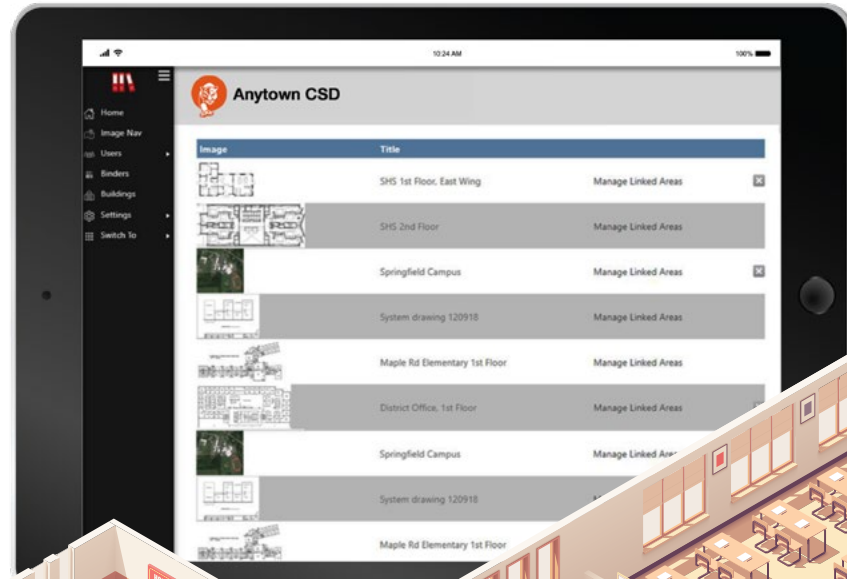
Improve onsite and remote curriculum delivery with an accurate inventory of the **Instructional Technology devices** at your district.

Extend the usable lives of **MEP systems** with timely **Preventative Maintenance** processes.

Get cooking with an accurate picture of your building's **kitchen** assets.

Improve plant safety with systems data secured for **First Responders**.

Improve upgrade efficiencies with access and rack information for **IT Equipment Rooms**.

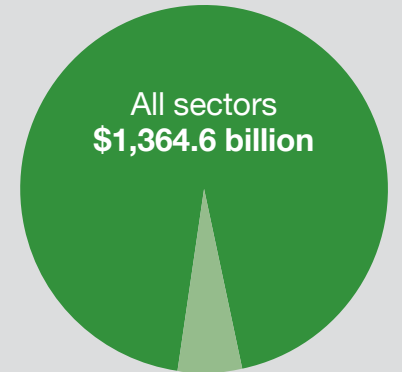Ensure **COVID-19** mandated cleaning and disinfecting processes are being followed.

Maintain network connectivity with **cable infrastructure** data.

Reduce service call durations and expenses with consolidated **Security Systems** device data.

Facilitate future capital projects with an accurate **Door Hardware** inventory and product schedule.
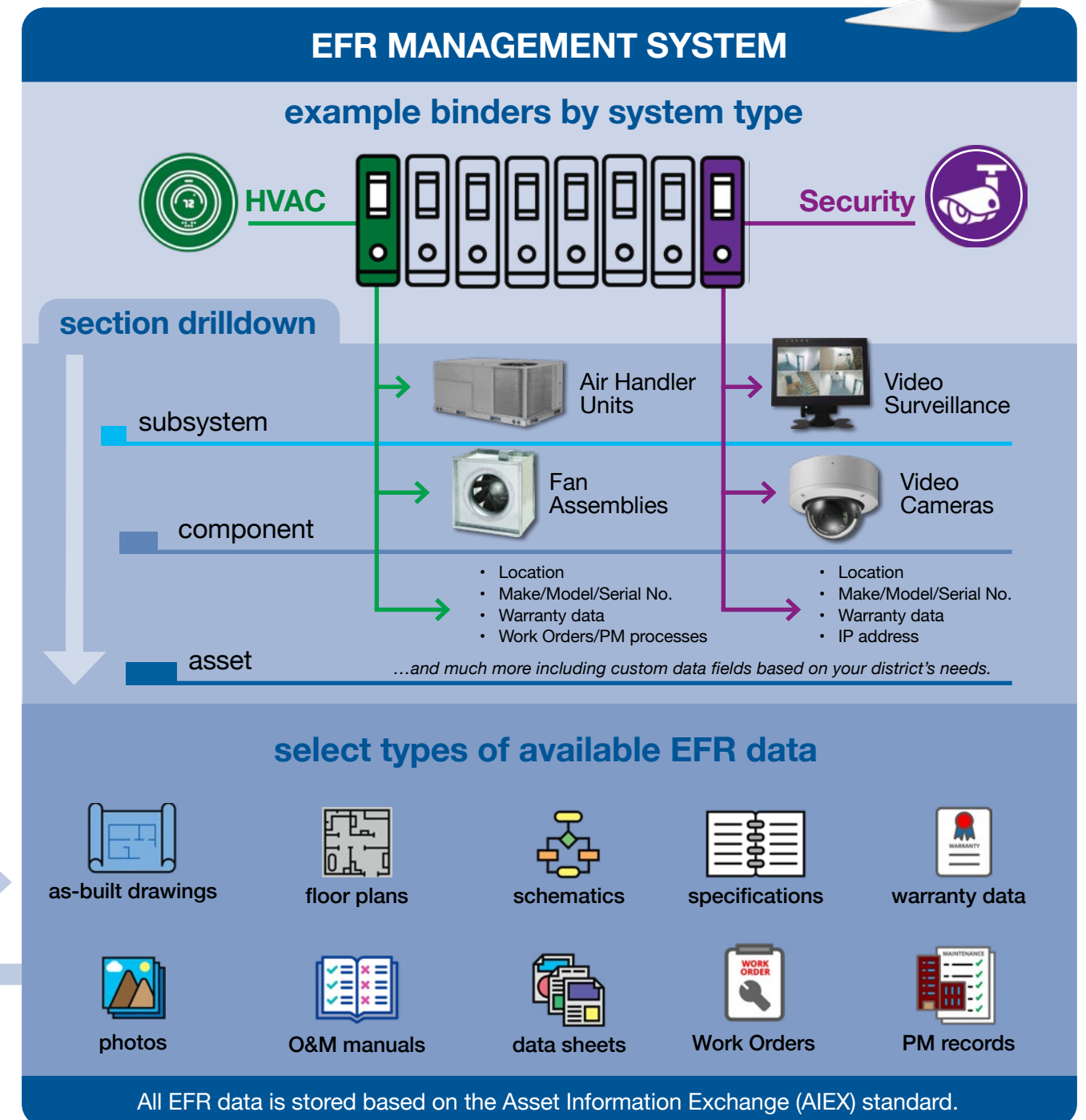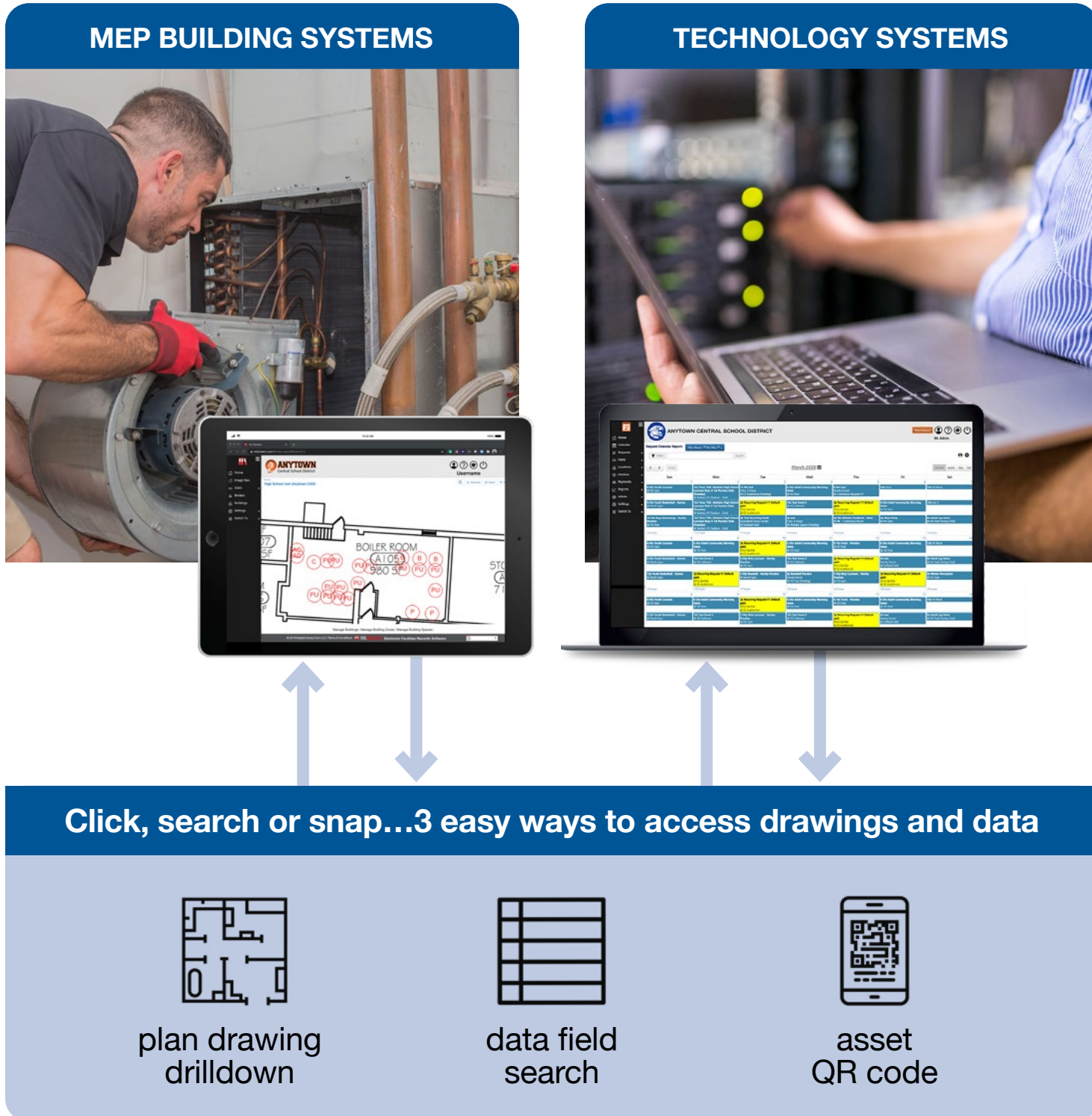
Find the exact facility system drawings and data you need in 30 seconds or less.

Using a standard binder/tab/record structure, an Electronic Facility Records Management System (EFRMS) saves facility and IT maintenance staff and vendors hundreds of hours annually by putting important data at their fingertips.

MEP BUILDING SYSTEMS

TECHNOLOGY SYSTEMS

Click, search or snap...3 easy ways to access drawings and data

- plan drawing drilldown
- data field search
- asset QR code

Real-time monitoring and reporting

Whether you're working from your office or out of your home, operational oversight of your district's facility systems is as close as your computer, tablet, or phone.

Monitor the status of Work Orders. Ensure Preventative Maintenance procedures are followed. Oversee contractor service. Review staff service call details...and more!

EFR MANAGEMENT SYSTEM

example binders by system type

HVAC   Security

section drilldown

- subsystem
  - Air Handler Units
  - Video Surveillance
- component
  - Fan Assemblies
  - Video Cameras
- asset
  - • Location
  - • Make/Model/Serial No.
  - • Warranty data
  - • Work Orders/PM processes

  - • Location
  - • Make/Model/Serial No.
  - • Warranty data
  - • IP address

  ...and much more including custom data fields based on your district's needs.

select types of available EFR data

- as-built drawings
- floor plans
- schematics
- specifications
- warranty data
- photos
- O&M manuals
- data sheets
- Work Orders
- PM records

All EFR data is stored based on the Asset Information Exchange (AIEX) standard.

Take your facility operations to the next level with our Documentation services.

qualifies for **BOCES** *aid in NYS*

Just like a building's lifecycle, an accurate EFR Management System (EFRMS) has three distinct phases: **Plan, Design/Build and Manage.**

The relative duration of these lifecycles is also similar. While the planning, design, and building of both a construction and EFRMS project can take a few years, the Maintenance phases last far longer (e.g., 95+ years), constantly evolving over time to reflect the changing needs of the facility.

While Archi-Technology's Documentation services are organized around these three phases, your district can begin to develop an EFRMS during any phase of a facility or capital project.

In fact, capturing data during the Plan and Design/Build phases of a construction project provides some of EFR's lowest-hanging fruit for Facility and IT Directors.

The drawings, specs, narratives, schematics, and other data that are already generated during the construction process can be leveraged to improve operations and reduce expenses in the years ahead.

PLAN 1 year

DESIGN/BUILD 3 years

MAINTAIN 95+ years
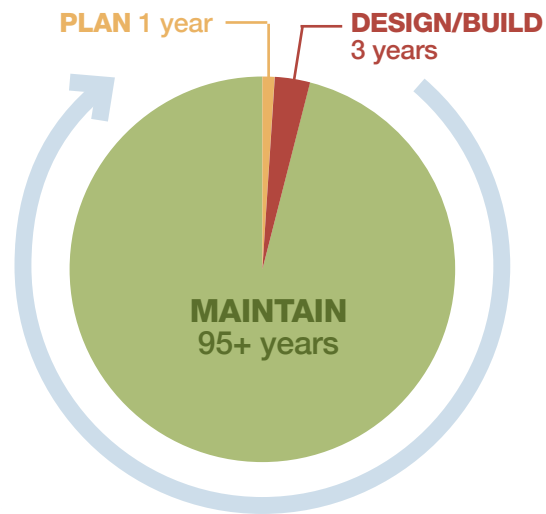
The Maintenance phase of a facility and its EFRMS comprise the vast majority of a building's usable life.

Overview of Archi-Technology Documentation services

1
- Needs analysis
- Strategic planning
- EFRMS set up and staff training
- Staff interviews and engagement
- Documentation inventory...and more

PLAN

2
- Plan Room(s) site surveys
- Scan hardcopy drawing plans
- Harvest existing building systems digital data
- Onsite surveys for asset data
- Collect Warranty and PM data
- Collect MDS and O&M manuals
- Upload & catalog scanned and harvested asset data
- Post assets and PM procedures to Work Order system
- Team communications
- ...and more

3
- Further Work Order asset uploading and cataloging
- Add more PM procedures
- CAD and Revit drafting
- Additional on-site asset surveys and data collection
- Tech System upgrades
- ...and more

MANAGE

DESIGN/BUILD (Development)

DOCUMENTATION PLANNING
Plan to succeed

Getting started on an Electronic Facility Records Management System (EFRMS) can be a daunting task for many school districts. Facility department resources are already stretched with increasing responsibilities due to the evolving effects of the Covid health emergency on classrooms.

Archi-Technology can guide your staff through the process of prioritizing and organizing an EFRMS that meets your district's specific needs.

We can also act as an extension of your staff with our data collection and site survey Development services.

Documentation Planning services include:
- Needs analysis and strategic planning
- Staff interviews, engagement, and responsibilities
- EFRMS set up and initial staff training
- Existing hardcopy and digital data inventory

Best of all, our Documentation Planning services are BOCES aidable so a customized EFRMS is typically within most districts' annual budgets.

Documentation planning tools like this multi-year planning worksheet help prioritize projects for school district Facility and IT directors.

Building Systems and Subsystems of Interest

Here are some of the building system and subsystem drawings and data that we can help organize into electronic binders include:

HVAC Systems
- Heating Systems
- Cooling Systems
- Rooftop Packaged Units
- Air Distribution

Technology Infrastructure (CP)
- Entrance cable & conduit
- Cable Plant
- Pathways
- CERs, MTRs and ITRs

Network Connectivity (CA)
- Wired networks
- Wireless networks including WAPs

Security (SS)
- Cameras
- Access Control doors
- Door Hardware
- Lockdown buttons
- Door intercoms

Audio-Video (AV)
- Public Address
- Master Clock
- CCTV
- Door intercoms
- Digital Signage
- Boardroom/Conference Room Systems
- Classroom AV Systems
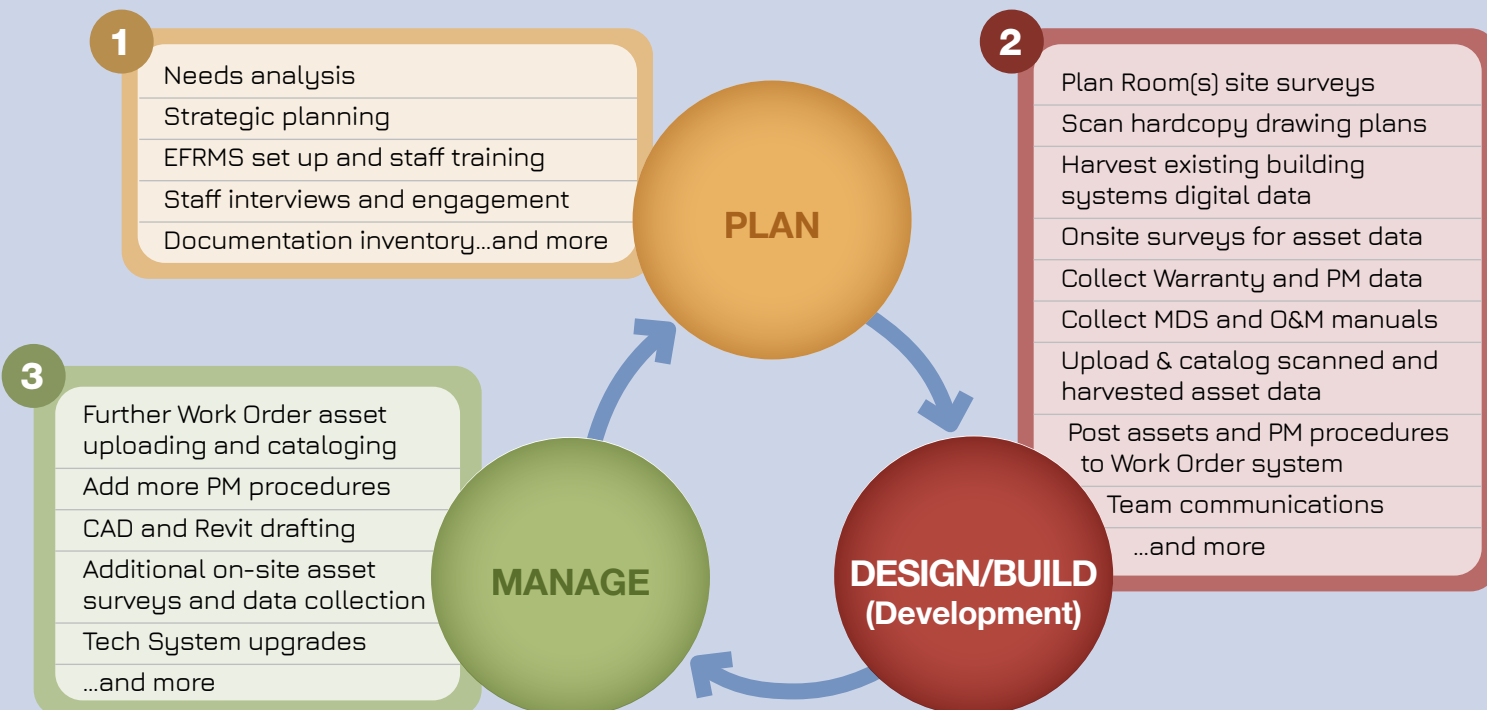- Chromebooks/laptops
- Tablets/iPads

Fire Protection
- Sprinkler System
- Fire Alarm
- Exit Lighting & Signage
- Emergency Power Systems
- Extinguishers & Hoses

Emergency Responders

Also available: Plumbing, Electrical and Communications (CM) systems; Kitchen fixtures and equipment; Grounds Maintenance equipment; and, Maintenance Vehicles.

Harvest existing hardcopy and digital data.

The best starting point in developing an Electronic Facility Records Management System (EFRMS) is to inventory your existing hard-copy and electronic records for data that will improve operations and extend systems usable lives.

Typically **MEP building systems** such as HVAC that experience the most daily wear-and-tear are prime candidates for your district's first EFR documentation project.

For **Technology Systems,** Commissioning Worksheet binders are indispensable for both staff and vendor troubleshooting and support.

Our documentation specialists will work with your staff to determine what existing system data is needed and where to find it—whether a physical or electronic location. We can then gather the data for you or work in conjunction with your available staff and vendor support.

Our Plan Room site survey service finds the 20% of your district's drawings and specs that have value to your current facility maintenance operations.

Data from existing digital sources...

- Hard drives
- Thumb drives
- Network storage
- Vendor stored
- Online for O&M manuals and product data sheets
- Business office for warranty information
- Facilities office for PM data and procedures

As Built Drawings with hand-written annotations can be scanned with all notes converted to editable, searchable text.

Changes, Additions and Moves can be incorporated into CAD or Revit files.

Past capital project system specifications can be digitized and uploaded into the appropriate online binder.

Add data with site surveys.

If your district lacks reliable data about specific MEP or Technology subsystems or components, our staff can perform on-site asset surveys including location marking on floor plans, photos, and capture of basic data.

Our tiered asset data survey services (listed at right) allow school district facility directors to get the specific types of data they need about the systems and subsystems of the highest concern.

Our site surveys are equally applicable to MEP assets and to IT-related systems such as equipment rooms, and security system devices. First Responder asset surveys cut across AMEPT systems to collect the data required to respond to an emergency based on district plans.

Avoid expensive out-of-warranty service calls.

Collecting your building's systems/subsystem warranty information in one accessible, secure location allows automatic notification a set number of days before a Service Level Agreement (SLA) expires. This provides time to either renew the SLA, adjust the terms, or cancel it based on the assets to which it applies.

Add Work Orders with PM procedures.

HVAC and other subsystems that benefit from regular Preventative Maintenance are another area of focus for data survey and collection. Asset data can be used for an efficient Work Order system with related PM checklists for service techs.

QR code provide even faster data access.

Once an asset record is created, a durable, weather-proof QR code can be placed on the physical asset. The asset data can then be accessed instantly via a smartphone app.

Keep your finger on the pulse of your buildings 24/7 from any internet-connected smart device.

Documentation Services Asset Data Deliverables

Here are examples of typical building system asset data that Archi-Technology can collect via on-site surveys and online asynchronous research and communications.

Tier 1: Basic (Required)
- Location (as text and plan stamp)
- Manufacturer
- Model
- Serial No.
- (1) asset photo
- (1) asset tag photo (if available and legible)

Tier 2: Enhanced (Warranty)
All Tier 1 deliverables plus…
- QR code printed/affixed to physical asset
- Installation/Service company
- Installation dates
- Warranty duration
- Warranty expiration date
- O&M Manual (link to online PDFs)

Tier 3: Comprehensive (Preventative Maintenance)
All Tier 1 and 2 deliverables plus…
- Asset useful life
- Asset estimated replacement cost
- PM replacement part #1 name
- PM replacement part #1 next PM date
- PM replacement part #1 cost
- PM replacement part #1 inventory
- Custom as needed.

Note: These are the optimal standard deliverables for each Documentation service tier. These deliverables can change based on specific data available from your organization and its strategic goals.

Keep data as up-to-date as your systems.

Like your district's buildings, once your EFRMS is up and running, it will require regular maintenance to stay current and reflect any replacements, upgrades, or changes made to MEP or Technology systems can be a daunting task for many school districts.

Archi-Technology can act as an extension of your staff using our BOCES-aidable Documentation services such as:

- **CAD or Revit drafting** to update floor plans with Moves, Changes, and Additions (MACs).
- **Work Order system refinement** with addition of more assets, QR codes, and Preventative Maintenance data.
- **Data entry** and/or spreadsheet imports
- Integration of **As Built drawings and specs,** and other capital project documentation after each design and construction phase.

All our Documentation Maintenance service deliverables leverage valuable facilities data to solve pressing issues facing your district.

About MasterLibrary.com software

Archi-Technology uses MasterLibrary.com cloud-based applications to collect, catalog, and process facilities data into critical practices such as Work Orders and following Preventative Maintenance procedures.

A cloud-based software development firm, MasterLibrary was spun off of Archi-Technology in 2016. The company currently has more than 400 national school district clients including more than 120 in New York State.

Learn more at MasterLibrary.com.

MLDrawings™
Interactive Floorplans

MLWorkOrders™
Facility Maintenance Software

MLBinders™
Electronic Facility Records

"ML Binders is the best solution for quick access to critical facilities information…It makes maintaining facilities infinitely more productive, and is much more cost effective than centralized servers and infrastructure for electronic storage of facility documentation."

— Joe Magliocca, CDF
Director of Facilities III/Elmira City School District, NY

NYS school district use cases

Elmira City School District
MEP Asset Inspections

Problem: The 500,00 sq. ft. of facilities lacked a comprehensive assessment of more than 5,000 MEP assets.

Solution: A set of online system binders with all asset data that could be used to satisfy NYS inspection needs while ensuring timely, accurate PM procedures were being implemented.

Documentation Services provided:
- Strategic planning and project management
- Plan Room surveys/digitization
- Site surveys of assets
- EFRMS set up and population
- Supplementary CAD/Revit drafting
- Data entry

Central Valley School District
As-Built Documentation

Problem: The District has completed extensive multi-year capital projects with As Built drawings and specs, and Technology Systems Commissioning data available to harvest.

Solution: Start with the at-hand data, create and populate online binders that will be augmented with additional MEP and Technology systems asset data via site surveys and data harvesting.

Documentation Services provided:
- Strategic planning and project management
- Plan Room surveys/digitization
- Site surveys of assets
- EFRMS set up and population
- Supplementary CAD/Revit drafting
- Data entry

Clinton Central School District
MEP and Tech Systems

Problem: The District was completing a multi-year capital project with As Built drawings and specs available as starting points. A Technology Systems Commissioning Workbook was also available to catalog.

Solution: Use a phased approach to develop an effective EFR Management System based on the existing conditions of building systems.

Documentation Services provided:
- Strategic planning and project management
- Physical site surveys for select MEP and Technology systems
- EFRMS set up and population
- Build out PM Procedures and checklists
- Affix QR codes to assets for real-time integration into maintenance workflow

N. Tonawanda City School District
AMEPT Systems EFRMS

Problem: The 877,218 City School District wanted to extend the life of select building systems with accurate, accessible and actionable facilities data.

Solution: Archi-Technology is developing an EFRMS that will include Work Order and Preventative Maintenance processes that are managed via cloud-based apps.

Documentation Services provided:
- Strategic planning and project management
- Staff end-use interviews
- Site surveys of assets
- EFRMS set up and population
- Supplementary CAD/Revit drafting
- Data entry

EXPERIENCED guidance
for every phase of your school district's technology projects

PLAN

DOCUMENT
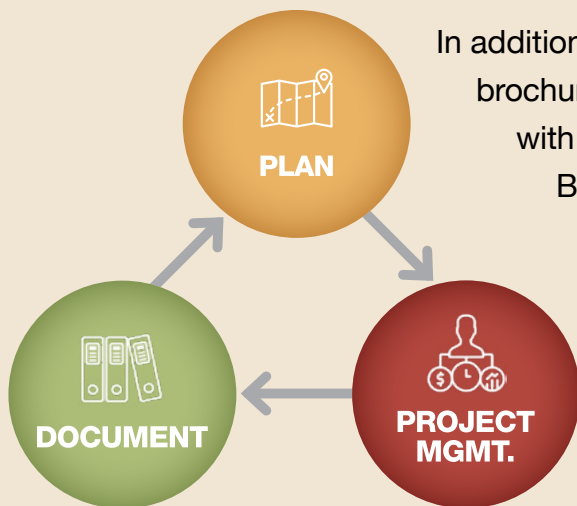
PROJECT MGMT.

In addition to the Documentation services described in this brochure, Archi-Technology LLC provides NYS school districts with professional Planning and Project Management (Design/Build) services that optimize budgets, meet short- and long-term goals, and improve quality.

Our state-aidable services are especially appropriate for smaller districts that lack the internal resources for a dedicated technology manager to coordinate initiatives and programs across departments and organizations including BOCES and vendors.

PLANNING SERVICES

Take control of all your district's building technology systems—including critical infrastructure—with planning services based on more than 20 years of experience. Tap into specialized K12 school district services that are BOCES-aidable in New York State.

1. Technology Conditions Surveys
2. Comprehensive Technology Planning
3. Smart Schools Investment Planning
4. Systems Design and Installation Standards
5. Technology Room Master Plans
6. Instructional Technology Guidance

PROJECT MANAGEMENT

Take control of the technology components of capital and other projects. Our project management services coordinate the efforts of vendors and contractors to reduce Change Orders and ensure all systems operate correctly from Day 1.

1. Technology Systems Design (SD, DD & CD)
2. Technology Systems Design Review
3. Technology Construction Bidding
4. Technology Procurement Assistance
5. Technology Construction Administration
6. Technology Construction Management
7. Technology Systems Commissioning

For more information about our services, please visit **Archi-Technology.com.** Then call **585.286.4500** to discuss how we can help your district overcome its most difficult technology-related challenges.

qualifies for
BOCES
aid in NYS

Archi-Technology
Technology Consultants LLC

Connecting people, technology and buildings.

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585-424-1952 Archi-Technology.com