

# Technology and Historical Image Preservation

The Grandview Heights/Marble Cliff  
Historical Society



## GH/MC Historical Society

- ◆ 150 years (documented) history
- ◆ No formal historical preservation until 1978 - now housed in Grandview Library
- ◆ Collection now has artifacts, physical photos, and documents
- ◆ Started digital archiving in 1997
- ◆ Digital collection is 5+ Gigabytes





- ◆ Technology has dramatically impacted how organizations like ours collect, save, restore and disseminate historical documents and information



## Images

- ◆ We have a “Virtual” collection of
  - ◆ Photographs
  - ◆ Document scans
  - ◆ Videos
  - ◆ Other media



## Issues we face

- ◆ New photos
- ◆ Scanning old photos
- ◆ Restoring photos
- ◆ Archiving photos
- ◆ Disseminating what we have
- ◆ Ethics of image manipulation



## First question...

- ◆ What is the ultimate purpose for the photograph?
  - ◆ archiving?
  - ◆ publication?
  - ◆ web use?
  - ◆ accompanying text?
  - ◆ to create derivative work?



## Taking new photos

- ◆ We photograph and/or videotape historical houses/buildings when they change hands

- ◆ Digital camera issues

- ◆ Resolution
- ◆ Storage formats
- ◆ Documentation



## Taking photos

- ◆ Rule 1: we can always downsample, but we can never upsample!

- ◆ highest resolution the camera allows
- ◆ no compression, or lossless compression
- ◆ RAW format if supported
- ◆ digital video



## Scanning photos

- ◆ Fundamental problem: The future use of the image is not known. Also, technological changes years from now are not known
- ◆ So, decisions related to archival image scanning quality are very critical.



## Scanning questions

- ◆ use original or intermediate?
  - ◆ is the original fragile?
  - ◆ will scanning affect original?
- ◆ scan negative or print?
- ◆ how do we do large photos?
- ◆ what is "photographer intent"?
- ◆ is the scanner adjusted correctly?





## Dangers

- ◆ tintypes or ambrotypes can be physically damaged or can damage scanner
- ◆ heat from scanner can damage waxed calotypes
- ◆ albumen or cyanotypes can suffer light damage



## Silver-based prints

- ◆ Silver gelatin, silver bromide, silver chloride, ...
  - ◆ As the print ages, the halide deteriorates and the silver rises to the top of the print, and reflects light when scanned
    - ◆ “blooming”
      - ◆ use intermediate
      - ◆ repair in Photoshop



## Large items

- ◆ Photograph original
- ◆ BGSU's Cruse Camera (60"x96" - 10kx15kx48b)
- ◆ Fine Arts Library - book scanner



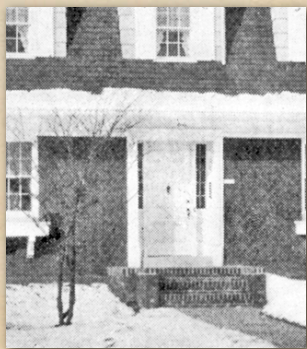
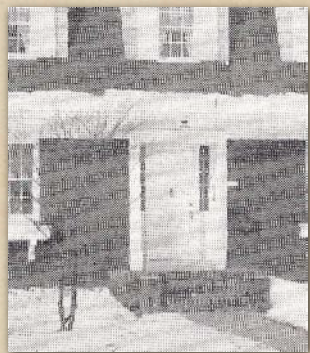
## Scanning guidelines

- ◆ include edges (no trimming)
- ◆ 10-12 bit depth
  - ◆ 3000 pixels at 10"
- ◆ no compression
- ◆ record scanning parameters
- ◆ no image modification at scan time (eg, descreening, brightening, ...)





## Descreening



## Restoring old photos

- ◆ After capture
  - ◆ Color/tono correction
  - ◆ Straighten and crop
  - ◆ Resize
  - ◆ Sharpen
  - ◆ Clean dust and spots
  - ◆ Repair scratches, tears, holes, ...



## Correcting tone



## Correcting color





## Cropping photos



## Cleaning photos



## Repairing problems



## Repairing problems



## Archiving photos

- ◆ U.S. National Archives and Records Administration (NARA)
  - ◆ Technical Guidelines for Digitizing Archival Materials for Electronic Access: Creation of Master Files
    - ◆ Surrogates, not replacements



## Image archiving

- ◆ Rule 1 - Do everything that we can, using existing technology, to recreate and protect the original content, and document the process of creating the digital version.



## Photo variations

- ◆ Full resolution archival image
  - ◆ 300 dpi; 3000 pixels
- ◆ High resolution printable image
  - ◆ 200 dpi; 1200 pixels
- ◆ Medium resolution Web image
  - ◆ 72 dpi; 600 pixels
- ◆ Low resolution thumbnail image
  - ◆ 72 dpi; 200 pixels



## Image storage format

- ◆ TIFF for archive and print (RAW, if available)
  - ◆ no compression, or LZW/ZIP lossless compression
  - ◆ IBM (Intel) byte order
  - ◆ all Photoshop layers if used
- ◆ JPEG for Web and thumbnail
  - ◆ medium to high quality compression





## Metadata

- ◆ Identification
- ◆ Management
- ◆ Access/restrictions
- ◆ Use
- ◆ Search and retrieval
- ◆ Preservation of content and context



## Metadata types

- ◆ Descriptive
  - ◆ identifier, title, creator, date, ...
- ◆ Administrative
  - ◆ rights, limitations, collection, ...
- ◆ Technical
  - ◆ capture/scan details
- ◆ Structural
  - ◆ sequence, derivative, version, ...

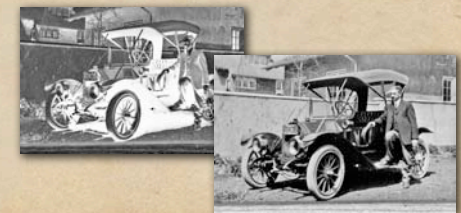


## Metadata standards

- ◆ EXIF
  - ◆ Dimensions, Compression, Camera details, Color space, Time stamp, ...
- ◆ IPTC
  - ◆ Copyright, Photographer, Caption, Title, Keywords, Date, Location, ...
- ◆ XML
  - ◆ combines both of above

## Original tone orientation

- ◆ The master archived image will be in the original orientation as the physical artifact (eg, if the original is a negative, the archived image will be the negative scan)





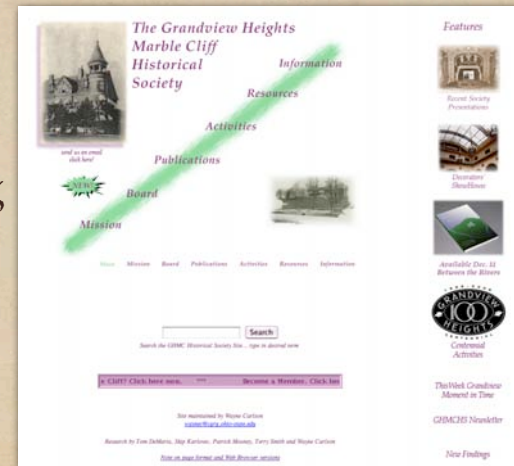
# Providing public access to our collection

- Our mission is to discover, collect, protect and preserve, and disseminate historical information regarding the history of our community

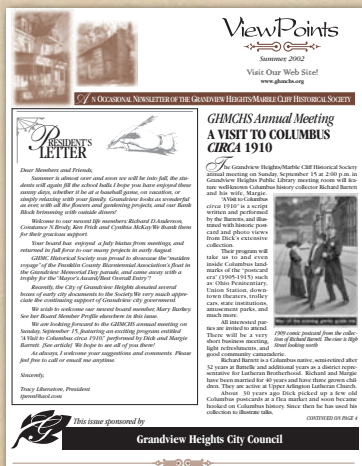


# Website

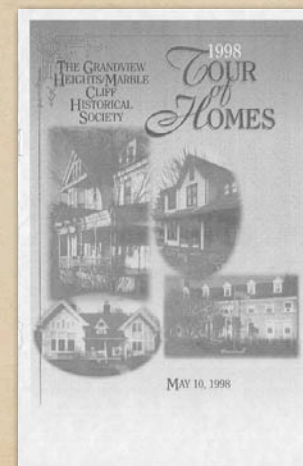
ghmchs.org



# Newsletter



# Home tour







## Never allowed

- ◆ Adding/moving objects or subjects
- ◆ Cropping if it alters meaning
- ◆ Changing colors, expressions, clothing, ...
- ◆ Any change that misleads events, participants, context or location
- ◆ Age progression/regression
- ◆ Cropping secondary support (watermarks, frames, stamps, ...)
- ◆ Adding phenomena (clouds, stars, ...)



## Generally allowed

- ◆ Color balance and correction
- ◆ Correction of lens distortion
- ◆ Dust & scratch cleanup
- ◆ Focus adjustments
- ◆ Glare elimination
- ◆ Overall lightening/darkening
- ◆ Red-eye elimination
- ◆ Photo repair
- ◆ Despeckling/descreeing





Bob Jackson (1963)



George Mahlberg (1996)

Thank you!

