Reality Capture
Utilizing Drone Technology
For Photographic Collection

Alfred State Center for Architecture and Remote Sensing (C.A.R.S.)
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Photogrammetry
- The use of photography in surveying and mapping to measure distances between objects.

Images can be captured using a Smart Device / Camera. Images Should be Strategically Captured and have an Overlap.
Photogrammetry and Architecture

Adaptive Reuse:
The process of reusing an old site or building for a purpose other than which it was built or designed for.
Photogrammetry and Architecture

Historic Preservation:
To preserve, conserve and protect buildings, objects, landscapes or other artifacts of historical significance.

Guaranty Building (Completed 1896) By Louis Sullivan Located in Buffalo, New York
• Reality Capture

- Workflow:

Capture ➔ Process ➔ Sculpt ➔ Share

- Capture:
  • Any Camera
  • Smart Device (Geo Tag)
  • Drone (Geo Tag)

- Process:
  • PIX 4D
  • Autodesk 360
  • Visual SFM (Open Source)

- Sculpt:
  • Autodesk Products
  • Blender
  • Many More

- Share:
  • Web
  • 3D Prints
  • Virtual Reality
• Adaptive Reuse
  - Alfred State College:
    Step 1:
    Capture strategically flown coordinates from the Drone.
• Adaptive Reuse
  - Alfred State College:
    Step 2:
    Process the photos by via Geo Tag coordinates.
• **Adaptive Reuse**
  - Alfred State College:
    - Step 3:
      - **Point Cloud:** Existing and Model Data.
• Adaptive Reuse
  - Alfred State College:
    Step 4:
    Share 2D Image.
• Adaptive Reuse
  - Alfred State College:
    Step 4:
    Share 2D Image.
• **Historical Preservation**

**Louis Sullivan’s Guaranty Building:**

Step 1: Capture.
• Historical Preservation
  - Louis Sullivan’s Guaranty Building:
    Step 2: Point Cloud Data.
**Historical Preservation**

- **Louis Sullivan’s Guaranty Building**:
  Step 3:
  3d Mesh Data.
- Historical Preservation
  - Alfred State College:
    Step 4:
    3D Printable Objects.
• Reality Capture

- Blue Sky Mausoleum by Frank Lloyd Wright:
  Step 1: Capture.
• **Reality Capture**
  - Blue Sky Mausoleum:
    - Step 2: Photo Stitching.
• **Reality Capture**

  **Blue Sky Mausoleum:**
  
  **Step 2:**
  Photo Stitching.
• Reality Capture
  - Blue Sky Mausoleum:
    Step 2: Point Cloud Data.
• Reality Capture

- Blue Sky Mausoleum:
  Step 2: Mesh Data.
• Reality Capture
  - Blue Sky Mausoleum:
    Step 3:
    FBX Mesh Ready to Sculpt/ Clean.
- **Reality Capture**
  - Blue Sky Mausoleum:
    - Step 3: FBX Mesh Cleaned.
Reality Capture

Blue Sky Mausoleum:
Step 4:
3D Print.
- Reality Capture

Blue Sky Mausoleum:
Step 4:
2D Image.
• **Reality Capture**
  
  Blue Sky Mausoleum:
  
  Step 4:
  
  Virtual Reality.