AEC & Geospatial

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AEC

glTF for Architecture, Engineering, and Construction

- Millions of objects
- Geometry + materials + metadata
- Complex data models: IFC, Revit, etc.
AEC - glTF optimizations

- Single draw call while still preserving interactivity
  - Vertex colors
  - Batching
  - Instancing
  - Feature IDs
- Compression
  - Meshopt
  - KTX2 / Basis Universal
AEC - Scaling

- Snowdon Towers: 42.7 MB .glb
- Larger models can be 500 MB+
- 3D Tiles + glTF
  - Streaming
  - Level of detail
  - Culling
AEC - Metadata

EXT_mesh_features

- Feature ID attribute
- Lookup into property table or external DB

EXT_structural_metadata

- Efficient binary encoding for metadata
- Type system + domain specific semantics

Recently added to https://github.com/NASA-AMMOS/3DTilesRendererJS
AEC - Future Work

- Implicit surfaces
- Improvements to EXT_structural_metadata
  - Class hierarchy
  - Object hierarchy
  - Split into multiple extensions?
- Semantic data model for AEC