

AI in Construction

# Achieving 80% Accuracy in Accessibility Guidelines Violation Detection



## ABOUT THE CLIENT

Our client is a prominent public-benefit corporation in the USA dedicated to designing and constructing public schools. With a substantial budget of \$10 billion and a workforce exceeding 3000 employees, they have earned recognition as leaders in school construction, having built and renovated over 1,600 schools.

## THE CHALLENGE

Ensuring accessibility in every school is crucial for the public-benefit corporation, whose mission revolves around creating safe, attractive, and environmentally sound public schools across the USA. However, their current approach heavily relies on experienced human employees for routine inspections of their vast infrastructure networks. This traditional method suffers from several limitations:

- **Manual Overload:**  
Handling over 1000 construction designs annually, each spanning 100+ pages, necessitating extensive manual inspection.
- **Inefficiency and Errors:**  
The manual validation process is prone to inefficiencies and errors, risking delays and potential legal risks and accessibility compliance.
- **Precision Required:**  
Verifying accessibility requirements for each element within the designs – from toilets and ramps to doorways and elevators – is critical. Any violations necessitate precise recording of deviation measurements, further adding to the manual burden and demanding attention to detail.


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## SOLUTION

In response to these challenges, Acuvate introduced the Google Vertex AI-powered Accessibility Object Detection and Violation Identification Solution. The solution doesn't just examine construction designs; it also analyzes accessibility guidelines to pinpoint specific types of violations.

It provides a cost-effective solution for conducting accurate and timely inspections of infrastructure assets. By automating the validation process, it streamlines operations, enhances accuracy, and reduces the heavy manual workload of the Accessibility Division.

## KEY FEATURES

 **AutoML-powered object detection**  
Accurately identifies accessible elements (ramps, doorways, etc.) within designs, reducing manual workload.

 **Automated validation process**  
Streamlines workflows, reduces manual effort, and minimizes human error for increased accuracy.

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## TECHNOLOGIES USED

Vertex AI

GCS

Looker Studio

Cloud Run

## RESULTS



### 80% Accuracy in Object Detection

Automating element identification slashed manual effort, freeing up valuable time and resources.



### 50% Productivity Boost

The Accessibility Division experienced a significant uptick in efficiency, allowing for strategic resource allocation.



### Enhanced Compliance

The solution ensured adherence to government accessibility guidelines, promoting inclusive educational environments.



### Faster Violation Detection

Increased identification of violations led to quicker remedial actions.

## About Acuvate

With over 17+ years of experience in digital solutions, accelerating enterprise-wide digital transformation with our AI accelerators, we provide solutions and services that modernize, automate and support organizations. We help our customers transform their conventional processes to match the next-generation technological trend. We have a strong presence in the US, Europe, and the Middle East, where we serve multiple Fortune 500 companies. We specialize in New-age AI solutions, Migration & Modernization, and Digital Workplace Solutions. With our multi-skilled experts and packaged AI accelerators, we deliver unparalleled efficiencies and accelerate time-to-value for our customers