

Product Presentation

- Application Name:
PA19-005
- Product Name:
FARO Focus S350



- Core Function:
Record of the existing features with HDR Panoramic image;
Detail As-built measurement; Inspection with Design Model
(CAD/ BIM model)
- Technology Used:
Terrestrial Laser Scanning Technology
- Construction Process involved:
Initial design
Retrofits and Renovation
As-built
- Key Improvement in Construction Process:
 - Productivity
 - Quality
 - Safety
- Job Reference:
 - The Old Dairy Farm Senior Staff Quarters, Pok Fu Lam, Project, 2014
 - Midfield Concourse, Hong Kong International Airport, Project, 2014
 - Lift Shaft Wall Plumbness Analysis, Quarry Bay, Trial, 2021



Specifications:

	FARO Focus S350
General:	
- Weight:	4.2 kg
- Size:	240 x 200 x 100 mm
Laser (optical transmitter):	
- Laser class:	Laser class 1
- Wavelength:	1550 nm
- Beam divergence:	Typical 0.3 mrad (0.024°)(1/e)
- Beam diameter at exit:	Typical 2.12 mm (1/e)
Data handling and control:	
- Data storage:	SD, SDHC™, SDXC™
- Scanner control:	Through touchscreen display and WLAN connection. Access by mobile devices through HTML5.
Ranging unit:	
- Distance Accuracy @25m	Distance Accuracy: 1 mm
- Angular Accuracy:	Horizontal: 19 arcsec
- Vertical:	19 arcsec
- Unambiguity interval:	614m for 122 to 488 kpts/s; 307m for 976 kpts/s
- Range:	0.6 m - 350 m indoor or outdoor with upright incidence to a 10% reflective surface
- Measurement speed (pts/sec):	122,000 / 244,000 / 488,000 / 976,000
- Ranging error1 FocusS :	±1 mm

	FARO Focus S350
Color unit:	
- Resolution:	Up to 165 megapixel color
- HDR:	2x, 3x, 5x
- Parallax:	Co-axial design
Multi-Sensor:	
- Dual axis compensator:	Levels each scan: Accuracy 0.019°; Range ±2°
- Height sensor:	Via an electronic barometer the height relative to a fixed point can be detected and added to a scan.
- Compass:	The electronic compass gives the scan an orientation.
- GPS:	Integrated GNSS receiver
Interface Connection:	- WLAN:802.11n (150 Mbit/s), Ad-hoc and Infrastructure mode
Deflection unit:	
- Field of view:	(vertical/horizontal): 300° / 360°
- Step size:	(vertical/horizontal):0.009° (40,960 3D-Pixel on 360°) / 0.009° (40,960 3D-Pixel on 360°)
- Max. vertical scan speed:	97 Hz
Ambient Conditions:	
- Ambient Temperature:	5 °C - 40 °C
- Extended operating temperature:	-20 - 55°C



Innovative Features

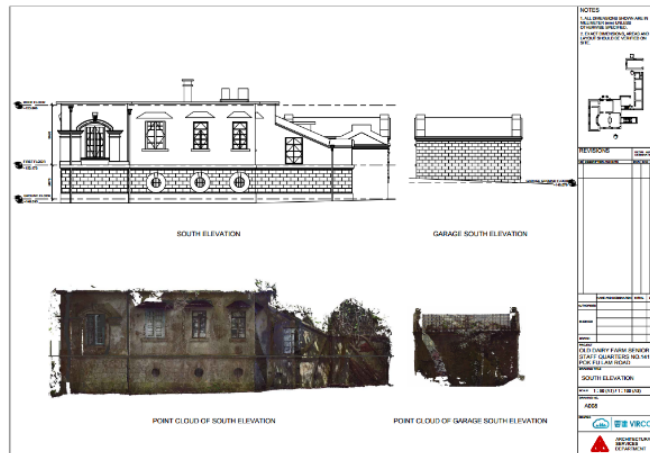
- Core Technology:
 - Terrestrial Laser Scanning
- Comparison with current practice and popular models:
 - Technology: Mobile Mapping System
 - Specification: GeoSLAM Horizon Handheld Laser Scanner
 - Benefits: Accurate result (3D position accuracy: 2mm at 10m/ 3.5mm at 25m); higher resolution (Up to 1.5mm at 10m range); lower noise range
- Comparison with similar Pre-approved list products and competitors:
 - Technology: Terrestrial Laser Scanning
 - Specification: Leica RTC 360
 - Benefits: Smaller & lighter model; Up to 350m Scanning Range; Standard SD Card Storage
- First Launch Date: 10/10/2016

Adoption Example

- Project for Illustration: The Old Dairy Farm Senior Staff Quarters
- Work Process: Collect dataset in multiples scan stations to capture a complete model
- Use/ Function in project: Record of the existing features and based on the Pointcloud data convert to BIM model



Site Photo



2D Plan extracted from BIM Model



PointCloud model

Adoption Example

- Project for Illustration: Midfield Concourse Linkbridge & Skylight inspection
- Work Process: Collect data of each Linkbridge & Skylight, then compare to the design model
- Use/ Function in project: Record of the existing features and inspection



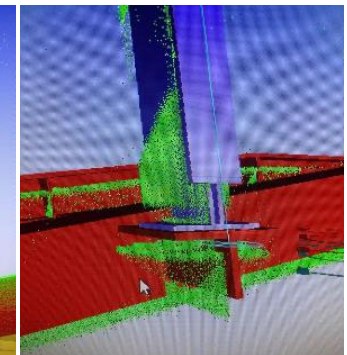
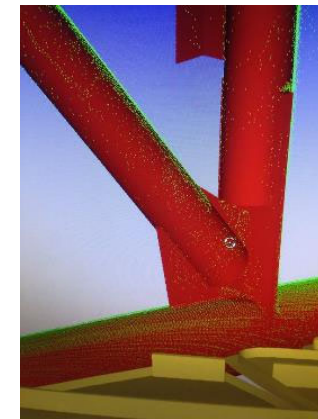
Site Photo



Complete Point Cloud Model



PointCloud model



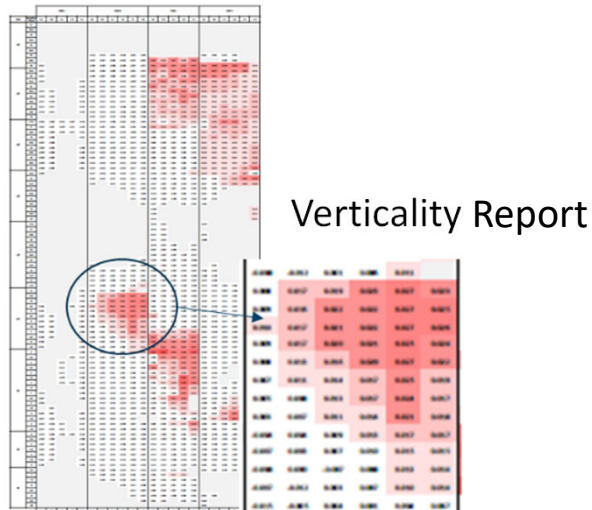
Inspection Result

Adoption Example

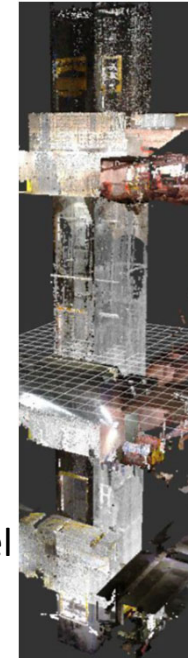
- Project for Illustration: Lift Shaft Wall Plumbness Analysis
- Work Process: Collect data on target floors, then compare with design model
- Use/ Function in project: Record of the existing features and provide verticality report of Lift Shaft based on the Pointcloud data



Site Photo



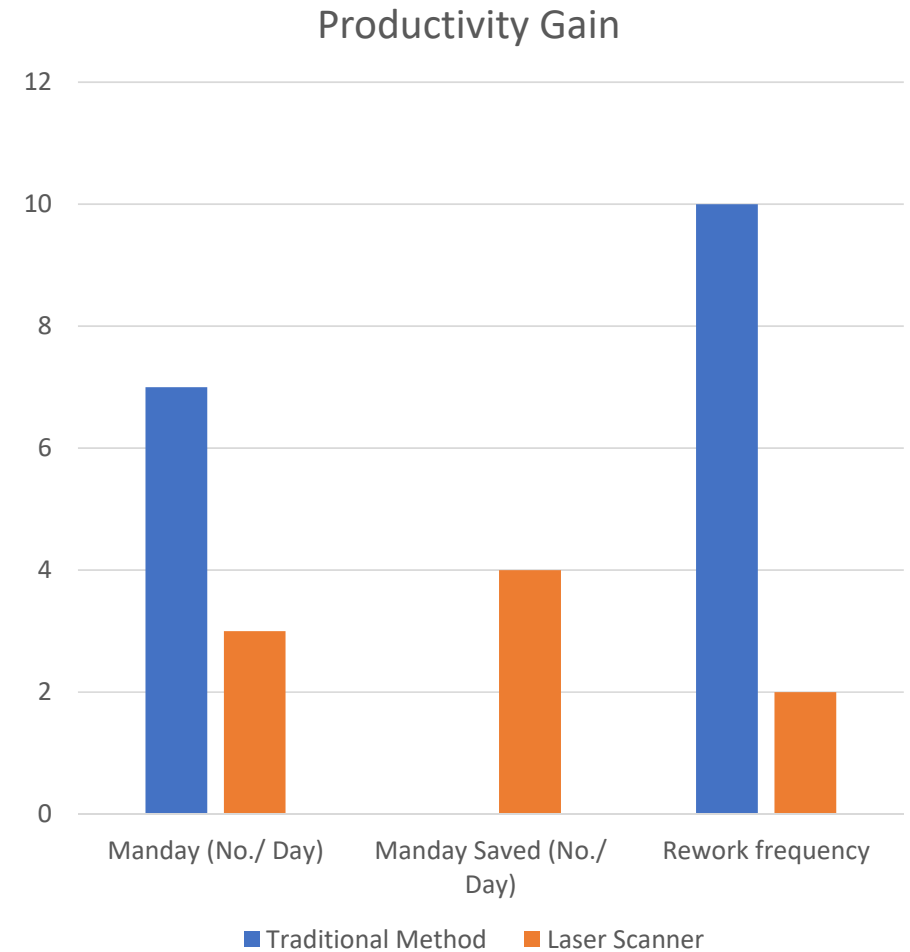
Complete Point Cloud Model





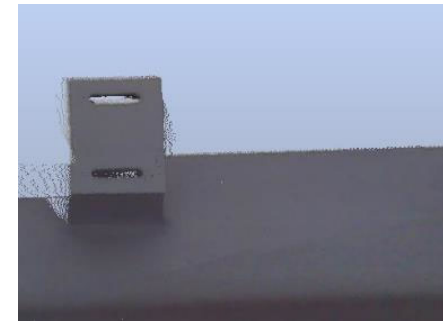
Benefits – Productivity

- Improve productivity by:
 - Improved efficiency (eg. ~600 Clips on Linkbridge)
- Traditional Output:
 - 7 days to complete one Linkbridge
- Output by [FARO Focus Laser Scanner]:
 - 3 days to complete one Linkbridge
- Rework (Traditional Method):
 - High
- Rework (Laser Scanning Method):
 - Low
- Total Saving in Mandays (without rework):
 - 4 days
- Total Saving in Project Period:
 - 76 days



Benefits – Quality

- Improve quality by:
- Error reduction
 - Total Station: Survey the center position of each clips
 - Laser Scanner: Scan the profile of Clip that can check the position and orientation of each clips



Benefits – Safety

- Improve Safety by:
- Dangerous work
 - Traditional method: Worker needs to walk on the beams of Linkbridge to survey clips position
 - Laser Scanner: Place the scanner on the roof of Linkbridge to scan clips profile

