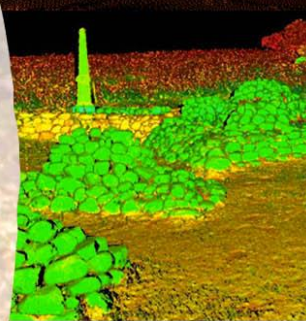
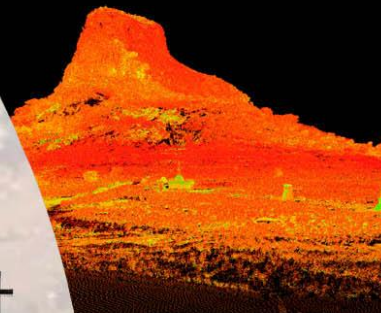


African Conservation Trust Digital Mapping Unit (DMU)



Who we are

The African Conservation Trust (ACT) is an established non-profit and public benefit organisation in South Africa that has been operating since 2000. At the core of ACT's activities is to conserve our environment, natural resources and cultural heritage. ACT is an Evaluated Charity with the American Fund for Charities (Membership No: AFC845) and donations are tax deductible to the extent allowed by US law. ACT is also a member of the International Union for Conservation of Nature (IUCN).

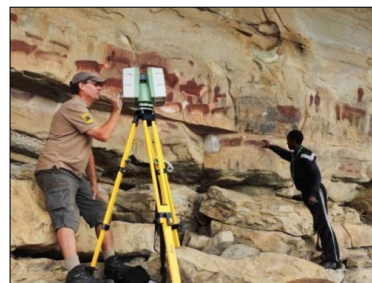
In 2010, ACT together with the University of KwaZulu-Natal implemented two cultural heritage projects using cutting edge 3D laser scanning as a means of digital preservation. These projects were a huge success and as a result, ACT has formed the Digital Mapping Unit that uses laser scanning and other spatial technologies to record significant sites.

What we do

ACT's DMU has worked on a variety of projects that include:

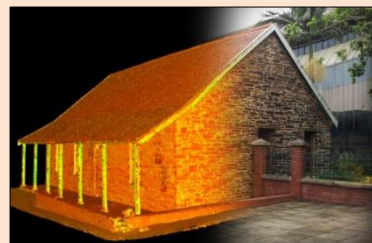
Rock art

ACT and UKZN used laser scanning to document ancient San rock art in the Drakensberg Mountains and Kruger National Park, as well as unique petroglyph sites in the Rooipoort Nature Reserve in the Northern Cape.



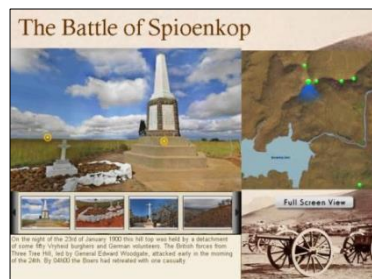
Historic buildings

Laser scanning was used to create permanent digital records of historic buildings. This data can be used for the conservation and restoration of these significant sites.



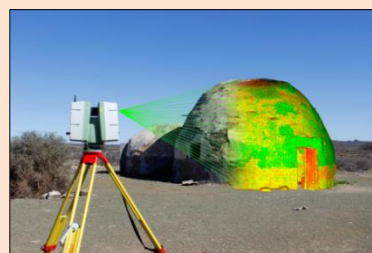
Battlefield sites

Laser scanning in conjunction with GIS mapping was used to document historic battlefields from the Anglo-Zulu and Anglo-Boer wars. These technologies are providing new insights into the well-researched battles and are useful tools for education and tourism.








Threatened local architecture

ACT's DMU has been using scan data to assess the condition of threatened local architecture. The millimetre-accurate measurements can highlight the weak points of the building structure and can be used to inform management plans.



Click here to view a video of our projects: <https://www.youtube.com/watch?v=wi9UXUa-w8o&feature=youtu.be>

Partnerships

Organisation	Relationship	Logo
University of KwaZulu-Natal	ACT works in close partnership with UKZN in its heritage documentation projects and has been involved in teaching and demonstrations at the University since 2012. The two organisations have an excellent relationship and have successfully implemented a number of large scale projects, including multi-million rand initiatives for the National Lottery Distribution Trust Fund.	
Amafa aKwaZulu Natali	Amafa is the heritage authority for the KZN province. ACT has worked closely with Amafa on previous projects documenting rock art in the Drakensberg World Heritage Site and historical buildings in Pietermaritzburg. ACT has an excellent working relationship with Amafa.	
KwaZulu-Natal Museum	ACT has worked closely with the KwaZulu-Natal museum on the rock art mapping project. The laser scan data, maps, photographs and archaeological records were all handed over to the museum for archiving and to assist in site management.	
Ezemvelo KwaZulu-Natal Wildlife	EKZNW is a governmental organisation tasked with maintaining wilderness areas and public nature reserves in KZN. ACT has worked with EKZNW on several heritage documentation and natural resource management projects.	
CyArk	CyArk is an American 501c3 non-profit organization with the mission of digitally preserving cultural heritage around the world using cutting edge technology. ACT and UKZN have formed a partnership with CyArk and have benefitted greatly through training and mentorship in 3D laser scanning and other technologies.	

Training

ACT participates in the annual UKZN survey camp where they conduct the practical demonstrations of 3D laser scanning field work and processing, this provides students with valuable hand-on training. ACT also conducts several laser scanning practicals with the students at the university and assists final year land survey students with research projects that deal with 3D laser scanning.

Current research projects



Snelisiwe Mbatha

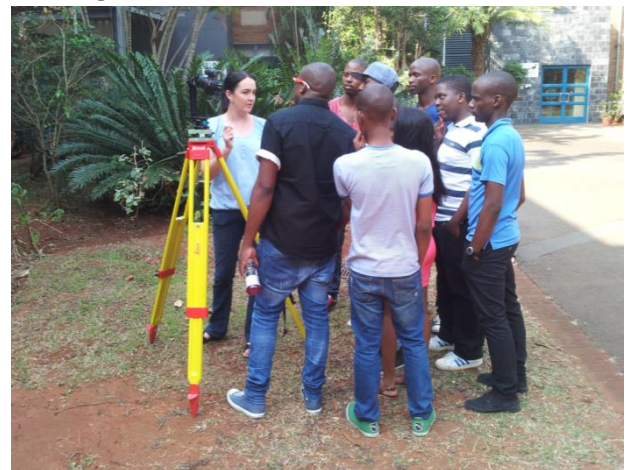
Accuracy of Laser Scanning in Heritage Documentation (Assessing the accuracy of Faro and C10)



Nhloswenhle Cele

The creation of high quality textured 3D virtual models.

Training at UKZN



Click here to view a video of the UKZN survey camp: <https://www.youtube.com/watch?v=rAxaKY3s0HE>

CONFERENCES & MEDIA

Conference presentations

2015

HxGN LIVE – Leica Worldwide HDS User Conference, Las Vegas

Beyond Wildlife and Environmental Conservation: HDS Opens the Door to Preserving South Africa's Rich Cultural Heritage

2014

5th Annual Diamond Route Research Conference, Johannesburg

Comparison of time-of-flight and phase shift terrestrial laser scanning for the documentation of petroglyphs in Rooipoort Nature Reserve, South Africa.

EKZNW Symposium of Contemporary Conservation Practice, Howick

Terrestrial laser scanning as a tool to improve management of cultural heritage in protected areas

In the media

- LIDAR News. 2014. Laser Scanning of Threatened Vernacular Architecture in South Africa. Vol 4 (8)
- The Diamond Route Newsletter. December 2014. 3D laser scanning of heritage sites at Rooipoort Nature Reserve.
- Heritage Portal. Documenting Karoo corbelled houses using 3D laser scanning.
<http://www.heritageportal.co.za/article/documenting-karoo-corbelled-houses-using-3d-laser-scanning-michelle-dye>
- Heritage Portal. Documenting ancient San rock art using cutting edge technology.
<http://www.heritageportal.co.za/article/documenting-ancient-san-rock-art-using-cutting-edge-technology>
- Rossouw, C. and Dye, M. 2015. Encouraging rock art tourism in the Drakensberg. *The Digging Stick*. Vol 32(1), p9-12.

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