



Northeastern

Department Civil and Environmental Engineering

Engineering the Great Inka Road

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335 Shillman Hall

Abstract

The talk will use the construction of the Inka Road to introduce you to the art of changing things – Engineering. Engineering has been defined as the vocation of guiding nature to produce something needed or desired. The Latin's used the word ingenium in reference to nature in the context of something that forms and deforms, therefore, in relation to engineering the word means the art of changing things.

This is a very different historical and philosophical reflection on engineering as compared to how engineers are now educated in the University.

The roads built by the Inka were far superior to those of sixteenth-century Europe. The soldier-chronicler Pedro de Cieza de León, who spent from 1535 to 1551 in Perú and traveled the Inka Roads extensively during this early period of Spanish rule and observed:

One of the things which I admired most, in contemplating and noting down the affairs of this kingdom, was to think how and in what manner they can have made such grand and admirable roads as we now see, and what a number of men would suffice for their construction, and with what tools and instruments they can have leveled the mountains and broken through the rocks to make them so broad and good as they are.

Five hundred years have passed since the destruction of the Inka Empire yet in many places the Great Inka Road is still a viable transportation corridor. The Inka Road or Qhapaq ñan (the Royal road) in scale alone is one of man's monumental engineering achievements. It united the four regions of the Empire that encompassed present-day Ecuador in the north, Perú, Bolivia, central Argentina, and Chile. Built without the use of iron, the wheel, or stock animals, it represents important milestones in the development of civil engineering knowledge. It is clear that the road's creators employed impressive engineering strategies in response to the challenges presented by the aggressive-physical geography of western South America.