

Look ahead to the past

by Sabine Eiche

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Recently I heard a TED talk by Johnathan Rossiter, a specialist in soft robotics at Bristol University. He explained how he based his design for a pollution-fighting robot on an aquatic insect and a shark, using a process called biomimetics.

Was Rossiter aware that five centuries ago, Leonardo da Vinci worked in a similar fashion?

Admittedly, Leonardo wouldn't have understood the concept of robot (although he did design automata), a word originating in the 1920 play, "R.U.R.," by the Czech Karel Capek (1890-1938). In the 1923 English translation, Capek's "robotnik" (forced worker) was rendered as robot.

Leonardo would have understood the concept of biomimetics, however. Mimesis is Greek for imitation; and bio comes from the Greek "bios," signifying one's life (as in biography), used by modern science to refer to organic life.

The world around him was Leonardo's laboratory. He explored how the lessons learned from nature could be applied to inventions and solutions for humans – just as Rossiter is doing today.

Leonardo also worked on town planning. After a plague in the 1480s killed one-third of Milan's inhabitants, he realised that sanitation was crucial. His urban renewal plan for Milan was for a two-level town, the upper level for houses, gardens, and walkways, the lower for warehouses and commercial traffic. Circulation along ground-level and raised routes became a reality by the 19th century, but it's Leonardo's avant-

garde designs that immediately came to my mind when I first saw the Canada Line along No. 3 Road.

In 1513, Leonardo was secretly designing a huge parabolic mirror for supplying solar energy to heat the cauldrons in dye works, the textile industry being a vital part of Florence's economy. Inventors in the 18th and 19th centuries also harnessed solar energy for projects, but it's only in our own time that the potential of solar energy for a wide variety of uses is being developed and recognised as the way to go forward. Even Richmond is finally, if slowly, getting involved – see Graeme Wood, “Solar panels clear the financial hurdle in B.C.,” in this paper, March 29, 2017.

Why do we ignore the many lessons the past could teach us?

We now have to battle the effects of climate change, linked to our greedy and thoughtless lifestyle. Why did scientists not pay more attention to what the Nobel prize winner Svante Arrhenius (1859-1927) first argued in 1896, namely that the burning of fossil fuels will eventually result in global warming?

George Santyana put his finger on it when he wrote, in *The Life of Reason* (1905-1906): “Progress, far from consisting in change, depends on retentiveness. Those who cannot remember the past are condemned to repeat it.” Winston Churchill reiterated the belief when he stated, in a speech in 1944, “The longer you can look back, the farther you can look forward.”

It's time to start paying attention to the Leonardo da Vincis of our past.