Institute for Agricultural and Earthmoving Machines

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National Research Council of Italy

Italian National Research Council
moving research

Istituto Macchine Agricole e Movimento Terra

Consiglio Nazionale delle Ricerche

IMAMOTER

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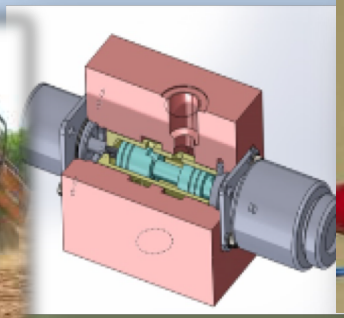
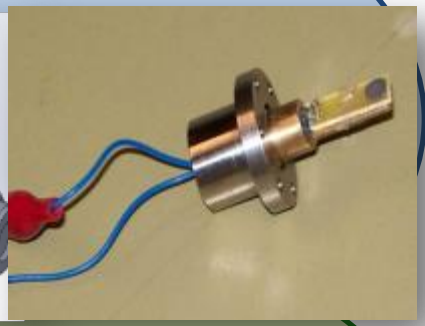
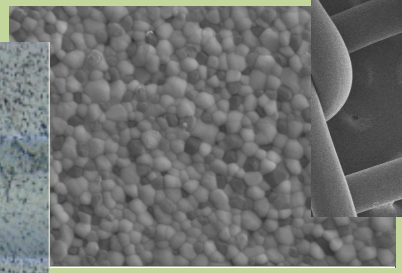
TECHNOLOGIES FOR AGRICULTURE

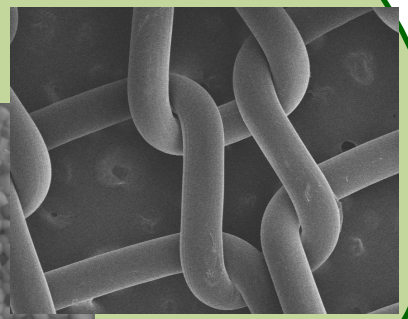
TECHNOLOGIES FOR HEARTH MOVING MACHINES





MATERIALS





50 people, 4 sites

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Ferrara
(headquarter)

Torino, Area della Ricerca
(Strada delle Cacce 73)

Candiolo (TO)
Vehicle testing site

Vezzolano (AT)
Experimental farm

Agreement:
- Politecnico di Torino
- Università di Torino

Main streams of activities

- Biomedical & Wear Resistant Material
- Noise, Vibration and Comfort
- Sustainable Agricultural and Mechanization
- Safety Assessment and Standards
- Machine Design, Operation and Testing

MATERIALS

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Eco-friendly machining and characterisation of difficult to cut materials (biomedical and aeronautic/aerospace applications).

Friction and wear properties of bulk and coatings.

Development and characterization of polymer composite for biomedical and sensor applications.

Sustainable Agricultural

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Promotion of management techniques for the protection and sustainable use of the soil:

- Water erosion
- Soil compaction by traffic machinery
- Organic matter loss
- Biodiversity decrease

Reduction of the environmental impact from bio-wastes :

- aerobic stabilization process
- mechanical processing techniques for the agronomical uses
- study of unconventional applications

Noise, Vibration and Comfort

- **Advanced measurement techniques**
  - sound intensity
  - modal analysis
  - laser vibrometry
- **Active noise and vibration control**
- **Sound quality**
  - improving the operator safety and comfort
- **Computational advanced tools**
  - vibroacoustic design of machines and components

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Machine Design
Operation and Testing

- Design, manufacture and tests of prototype of off-road vehicles and machines for agricultural purposes
- ROPS and FOPS tests
- Ergonomics assessment: focus group, field surveys and observation, user-centred-design method, user scenarios, usability evaluation

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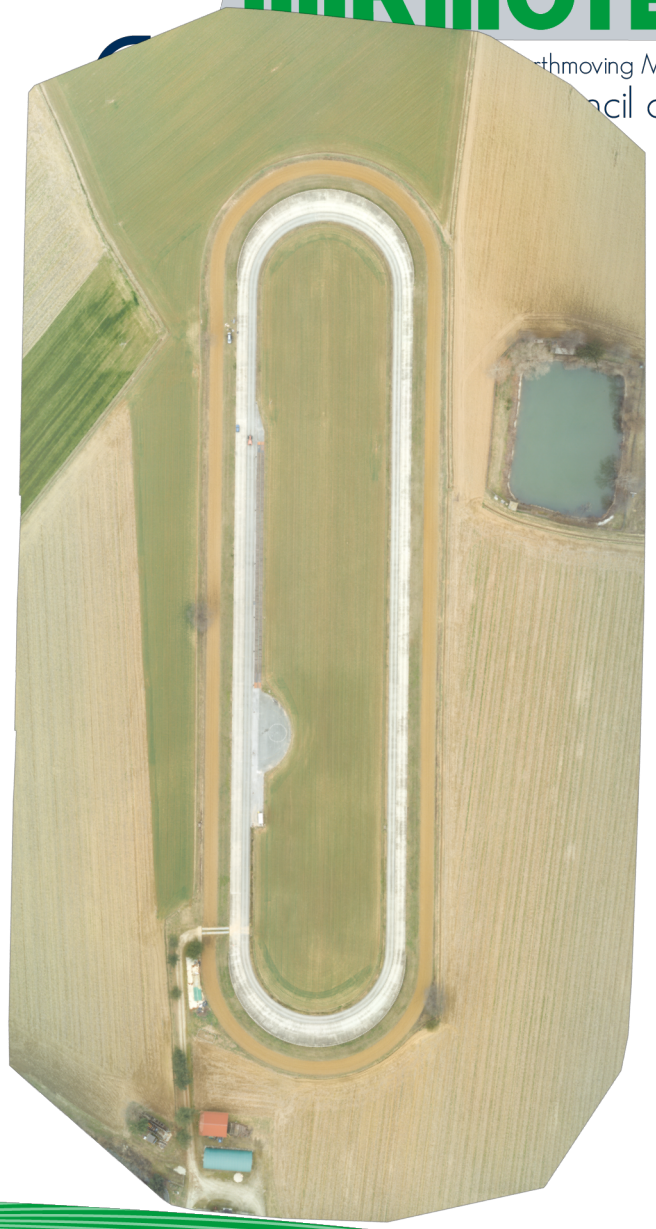

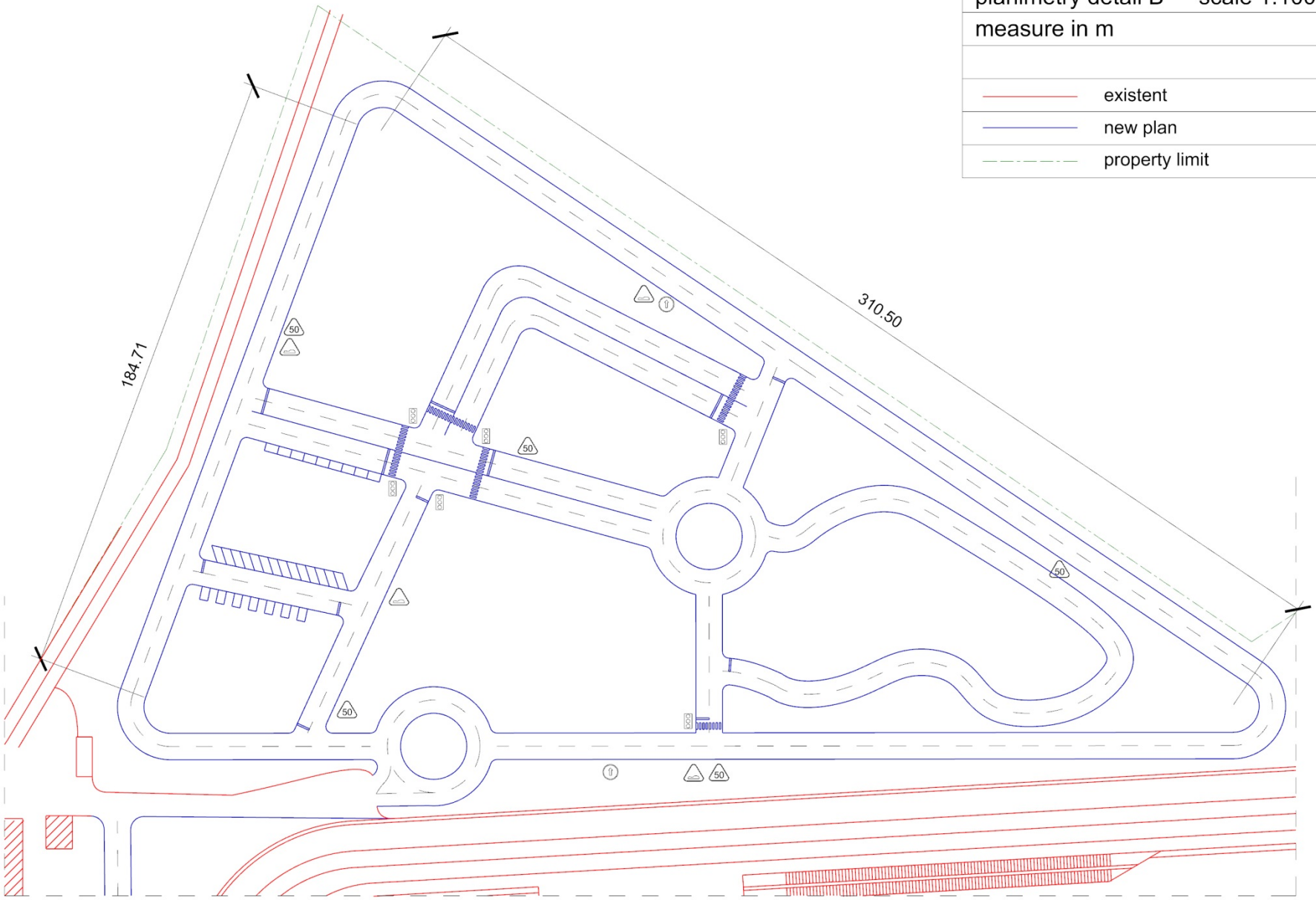
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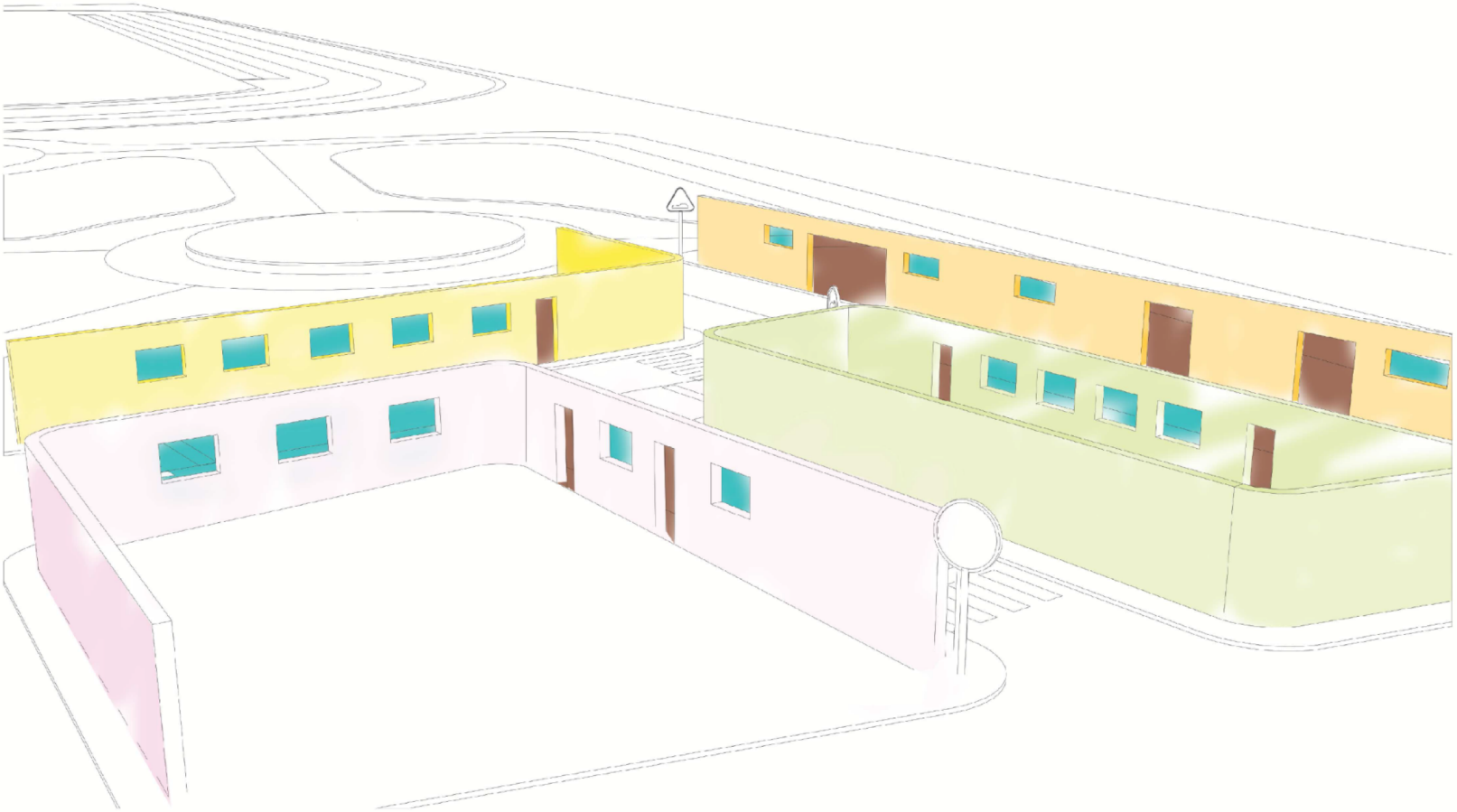
Simulation Buildings B