Recent Technologies

- X-TRAIL FCV
- Altima Hybrid
- XTRONIC CVT for 3.5L
- Intelligent Cruise Control
- Lane Departure Warning
- Qashqai 4x4
- 4 Wheel Active Steer
- New Generation Carwings & Navigation System
Environment Technologies

Technologies on track to ‘Nissan Green Program 2010’

- SKY project (FY09)
- EV (FY09)
- Clearn Diesels (FY08-10)
- In-house HEV (FY10)
- 3L-car (FY09)
- 6 eco-car (FY06)

Safety Technologies

Provide leading technologies based on the concept, ‘Safety Shield’ that vehicle helps protect people

- Lane Departure Prevention
- Around View Monitor
- Distance Control Assist
  Feedback force from gas pedal
**NATC Concept**

- **Site area:** 118,000 m²
- **Gross floor:** 106,000 m² (office & auditorium)
- **Capacity:** 2,000

**NATC overview**

- **Office**
- **Labs**
- **Auditorium**
- **Entrance**
NATC Objectives

- Accelerate advanced technology development
- Create new values on future mobility

featuring:
- New concept office
  Invoke collaboration in/outside of Nissan

Advanced Vehicle Lab & Electric Powertrain Lab
Develop state of the art technologies

NATC main focus

Research & Advanced engineering to provide new technologies to Products

Focusing on:
- Advanced vehicle
- Electric powered vehicle & components
- IT / ITS
- Future mobility & society etc.
Centralized R&D site

- Research & Advanced engineering for future vehicles are mostly concentrated in NATC (those for engine & drivetrain are concentrated in NTC)
- Atsugi area becomes a centralized R&D site of Nissan

NATC in Global Nissan R&D

- Deliver new value and technologies from NATC & NTC
New Concept Office

Side view

Office building

Office

Collaboration Area

Parking

Auditorium building
New Concept Office

- Unique structure featuring stepped design
- Collaboration rooms for over 200 people
- Craft rooms in each floor for quick prototyping
- Communication space / Info-Street for supporting daily interaction
- Auditorium for activating internal & external communication

Novel stepped design

- Possible to see beneath vehicles and collaborative activities from any floor of the building
Collaboration Garage

- Combine knowledge in/outside of Nissan
- Collaboration room next to Car Lift
- Physical (actual vehicle) and virtual (CAD) in one place

Collaboration room with car-lift

- Exclusive use of collaboration room with a car lift by projects

23 rooms including 3 rooms with a car lift
Craft room for quick prototyping

- 3 craft rooms on each floor
- Quickly repeat innovation cycle by prototyping near working desk

“Info-Street” to get latest knowledge and stimuli

- Touch new vehicles, technologies, and trend of world customers
- Communicate to invoke innovative ideas
**Vehicle Development Centered Layout**

- **7F** Planning & Administration
- **6F** Research
- **5F** Advanced Engineering
- **4F**
  - **Advanced vehicle development**
  - **Collaboration area with suppliers**
  - **Electric components & Systems**
  - **Electric Powetrain**
  - **Prototype & Testing**
  - **Future Mobility & Society**
  - **Technology Planning**

**Auditorium**

- Multi-use for internal & external communication (e.g. Technology forum, panel discussion, etc.)

- 460 seats
- Turn table
- 3 screens

[Image of an auditorium with 460 seats, turn table, and 3 screens]
Experimentation Facilities

- Advanced Vehicle Lab
- Electric powertrain Lab

Advanced Vehicle Lab
- Future vehicle system development including ITS, XBW etc.

Main facilities
- XBW actuator test bench (hardware in the loop)
- Driving Simulator
- Evaluation facilities for future Cockpit Mock
- Virtual sound test room
- Semi-anechoic chamber
- Adv. Li-ion Battery facilities
Electric Powertrain Lab

- Electric powertrain development including EV/HEV

Main facilities

- Chassis dynamometers for HEV, EV
- HEV, EV unit test bench
  - Motor dynamometers
  - System dynamometers
- Soak room
- On-board ITS sensor evaluation facility

Care for Environment
Environmental Friendly Design

S rank (top rank) of CASBEE* to be awarded

* Comprehensive Assessment System for Building Environmental Efficiency

- Less environmental load in construction
- Less environmental impact in operation

Creation of closer relationship with Suppliers
- Collaboration in Advanced Technology development by utilizing NATC
Form of Collaboration

Advanced development Collaboration in NATC

“Project Partner”

Project Partner

New partnership activity to create best practices

- Implemented from 2005
- Collaborative activity between Nissan and Supplier, to create new project based on mid-term plan. Require Supplier participation from the early stage of the development.
- Effective partnership with long term vision from collaborative activities of Supplier and Nissan, such as Innovative technology development, attractiveness creation and efficient investments.
**Process of Project Partner**

1. **RFS**: Request for Strategy
2. **RFQ**: Request for Quotation

**Project Partner**
- **Partner Decision**
- **Cost or Design**
- **Simultaneous Development**
- **Design Complete**
- **SOP**

**General Sourcing**
- **Supplier Decision**
- **Collaboration with supplier**
- **SOP**

**Significant effect expected from Collaboration**

1. IT/ITS Technology
2. Electric Vehicle Technology
3. By-Wire Technology
4. Advanced Vehicle/System Component
Expected results in advanced development

- Progress of utilizing supplier inherence technology
- Securement of enough time range for technology evolution to an enough level of vehicle application.
- Progress of further technology development and innovation from collaboration between Nissan and Supplier.

Enhancement of supplier collaboration by utilizing NATC with further implementation of “Project Partner” activity.

“Trusted Driving Pleasure” from NATC to Global Market