Planning a new hospital – Identification requirements inside the Vienna North Hospital

March, 18th 2009

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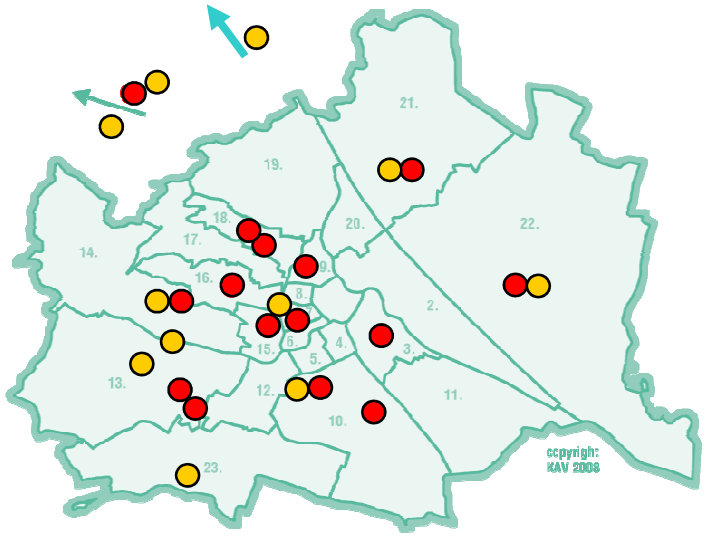
Vienna Hospital Association

The Vienna Hospital Association (VHA) is one of Europe‘s largest healthcare organisations and

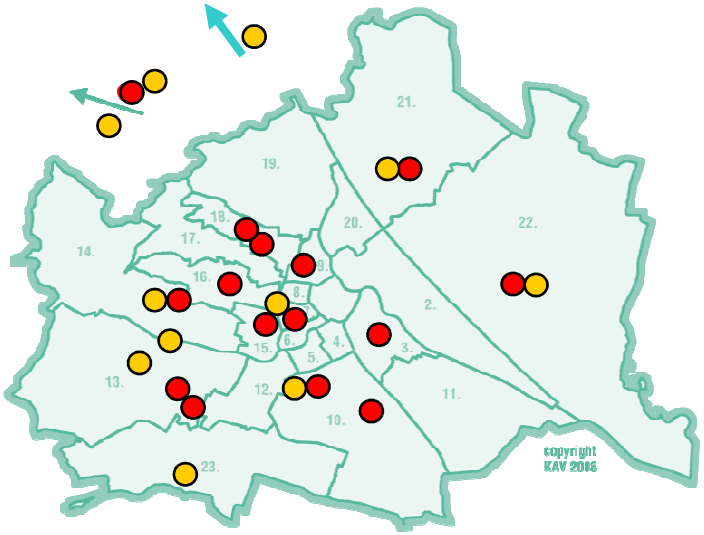
Austria‘s largest training facility for professional healthcare.

VHA at a Glance (2008)



- **12 hospitals**
- **12 nursing centers**

- 30.753 employees
- 8.939 beds in hospitals
- 4.034 beds in nursing (geriatric) centers
- ~ 400.000 inpatient admittances
- ~ 3,5 mill. outpatient visits



VHA at a Glance (2008)

- **annual budget € 3,12 bill.**
- personnel expenses (excl. pensions) € 1,30 bill.
- net costs of materials € 822 mill.
- net capital investments € 195 mill.

Vienna North Hospital (VNH)

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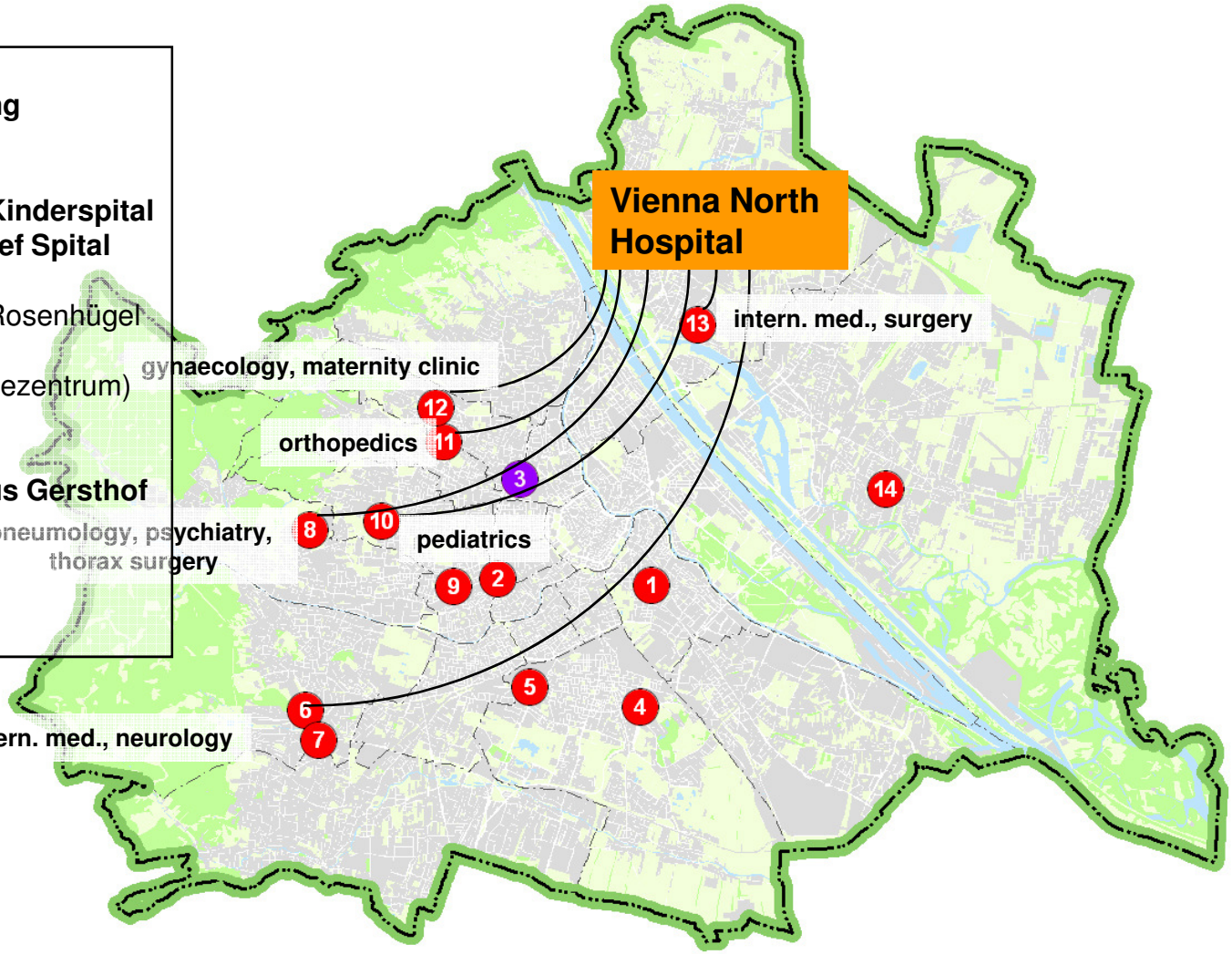
1 **Krankenanstalt Rudolfstiftung**
2 **SMZ Sophienspital**
3 **AKH - Universitätskliniken**
4 **Gottfried von Preyer´sches Kinderspital**
5 **SMZ Süd – Kaiser-Franz-Josef Spital**
6 **Krankenhaus Hietzing**
7 mit Neurologischem Zentrum Rosenhügel
8 **SMZ Baumgartner Höhe**
(=Otto-Wagner-Spital mit Pflegezentrum)
9 **Kaiserin–Elisabeth Spital**
10 **Wilhelminenspital**
11 **Orthopädisches Krankenhaus Gersthof**
12 Semmelweis Frauenklinik
13 **SMZ Floridsdorf**
14 **SMZ Ost – Donauspital**



Medical Services at VNH

anaesthesiology
emergency unit
surgery
gynaecology and maternity clinic
heart surgery
internal medicine
cardiology
pediatrics
psychiatry for children
neurology
orthopedics
psychiatry
pneumology
thorax surgery
trauma, accident surgery

laboratory diagnostics
pathology, bacteriology
physiotherapy and rehabilitation
radiology

Milestones

- search for a project partner — mid 2006 – Feb. 2008
  - ✓ PORR Solutions
  - ✓ SIEMENS
  - ✓ VAMED
- preplanning phase — mid 2007 – March 2008
- architecture competition — April 2008 – Dec. 2008
  - ✓ health team albert wimmer ZT-GmbH

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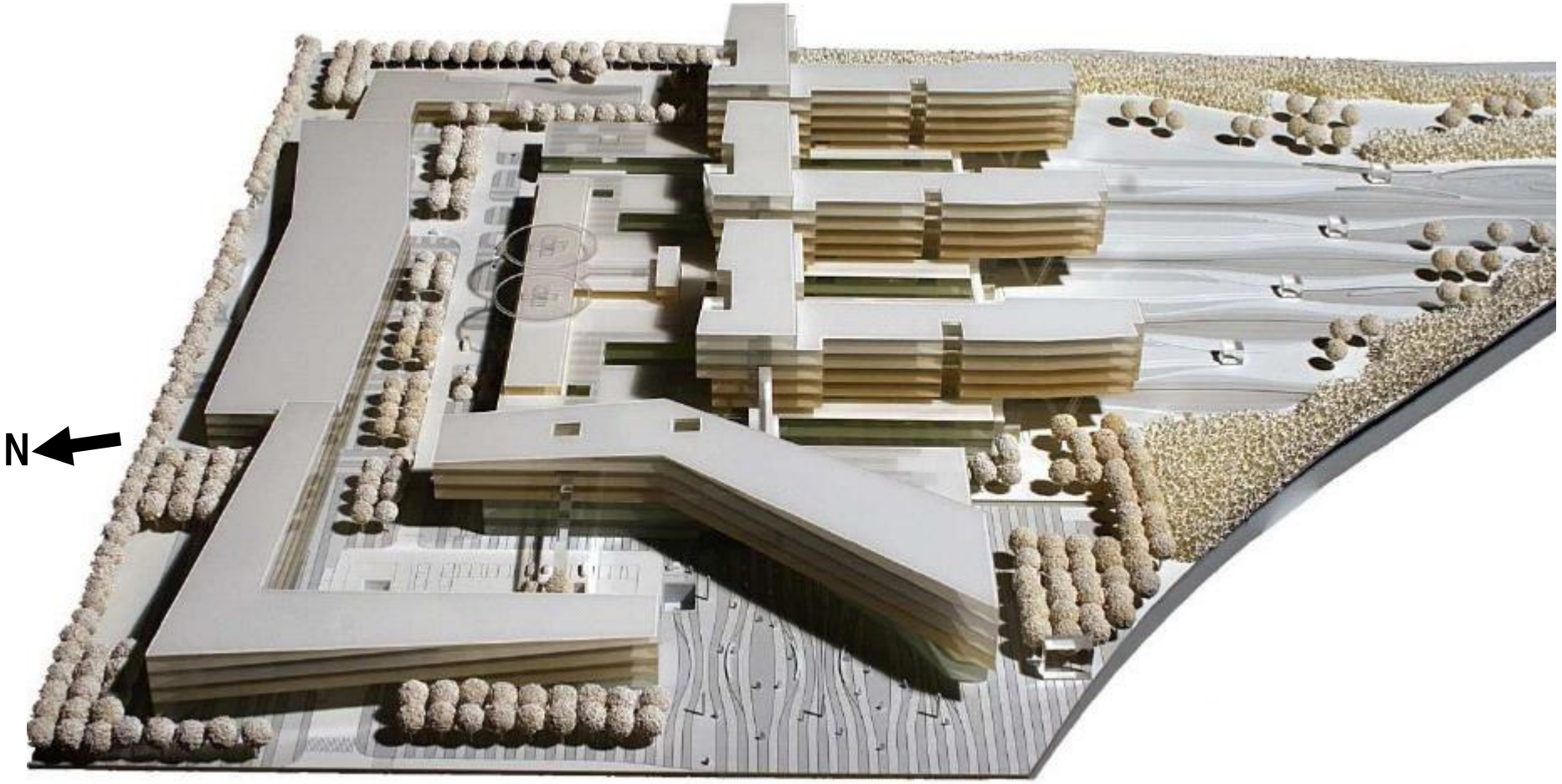

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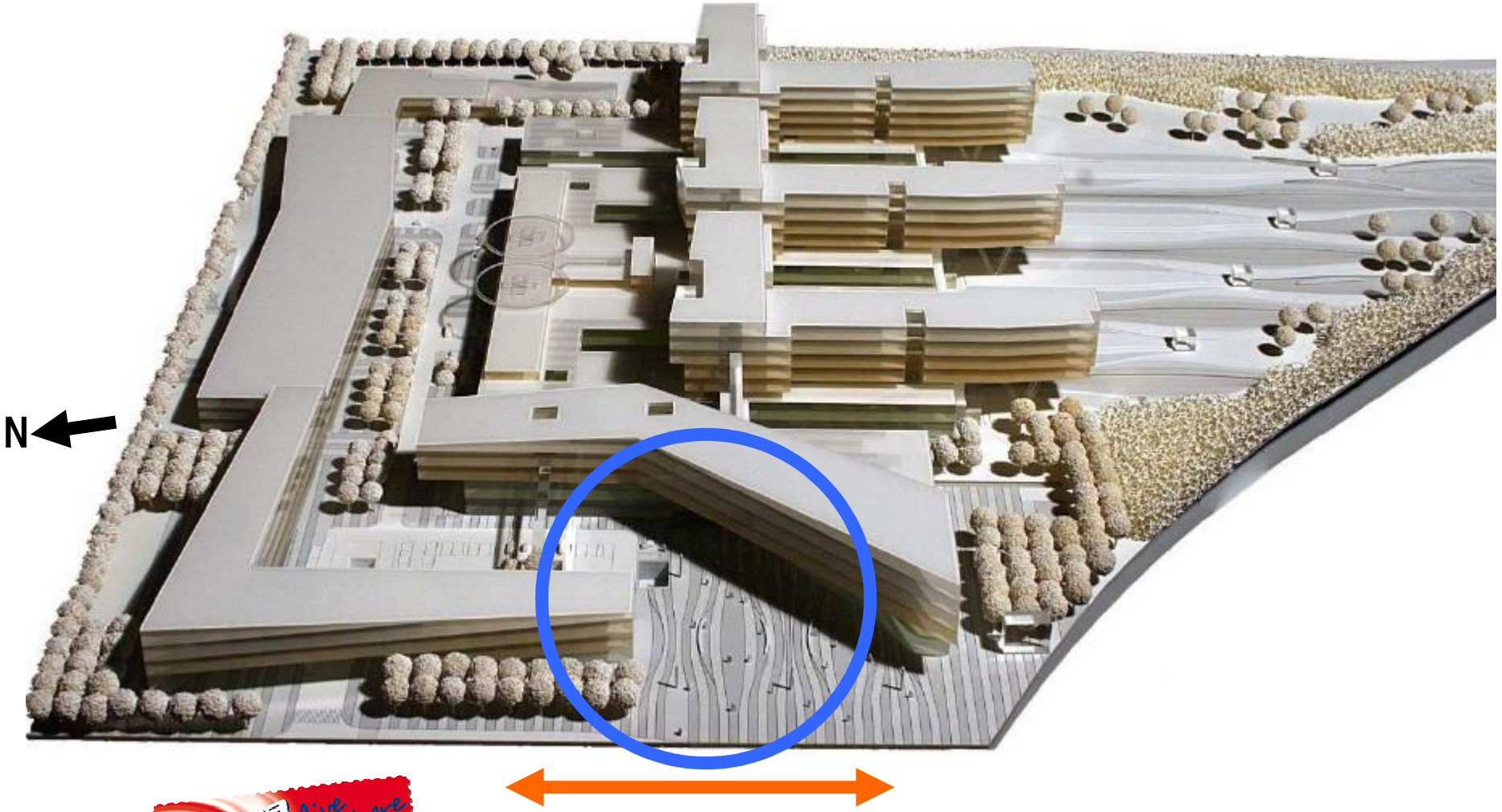

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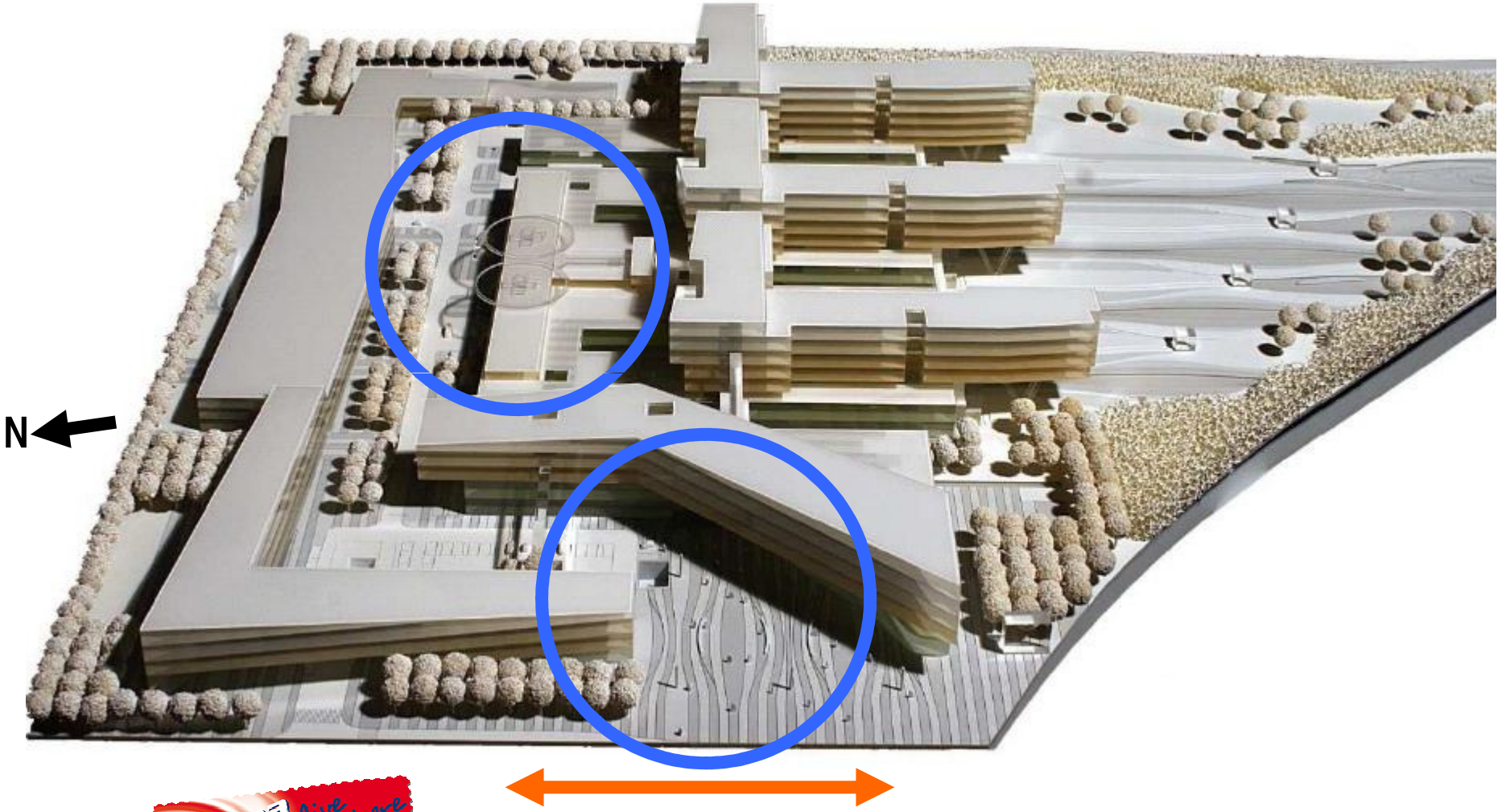

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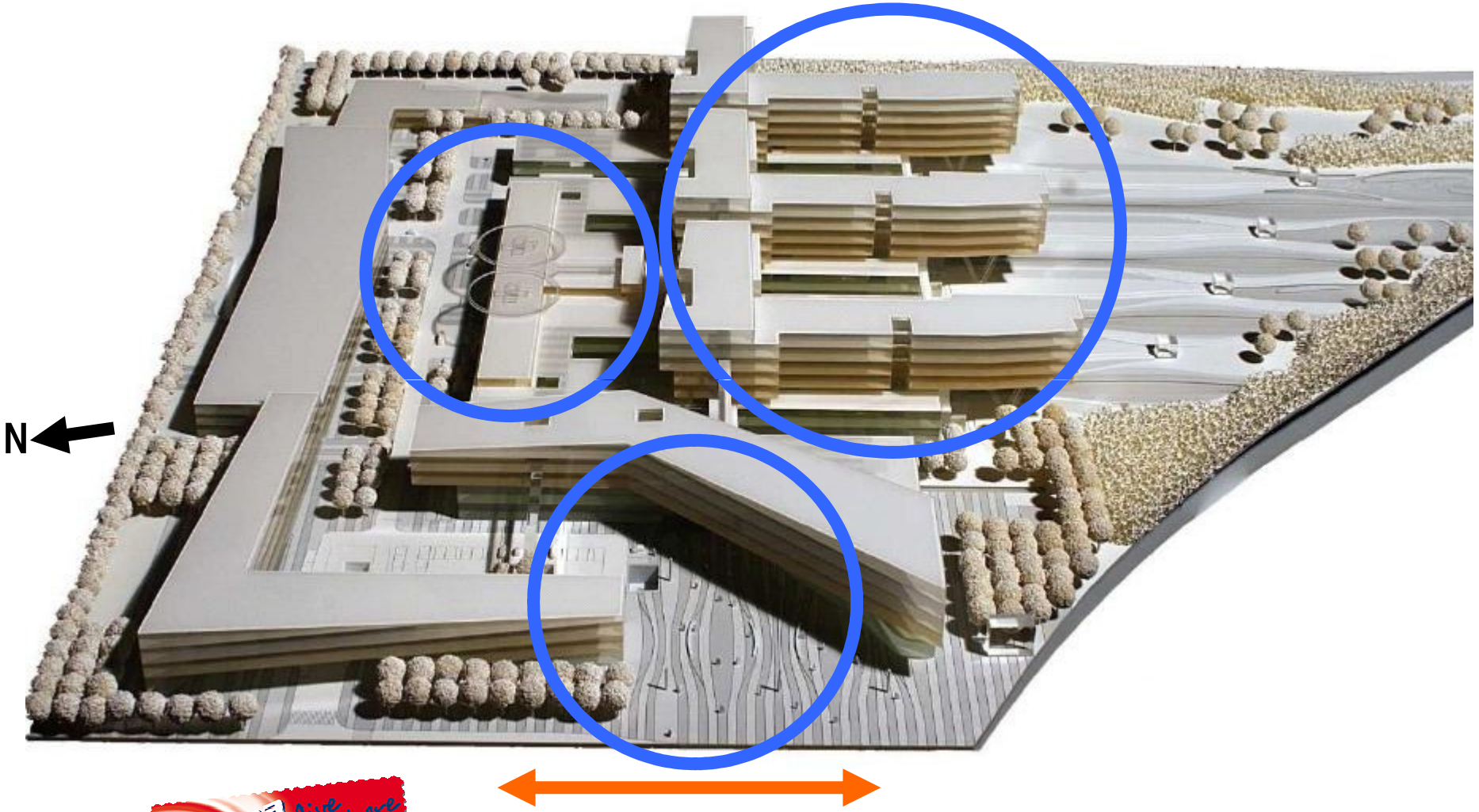

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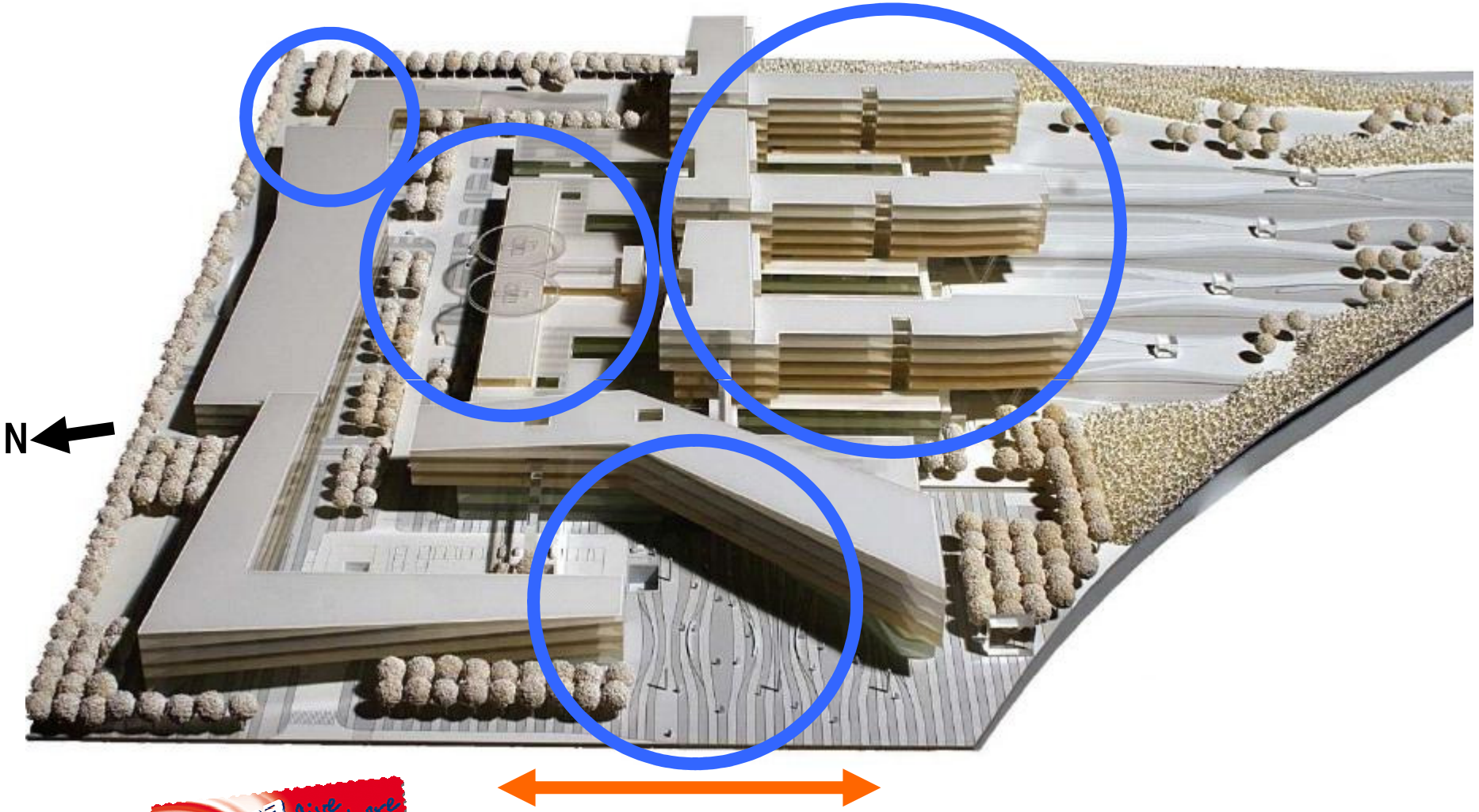

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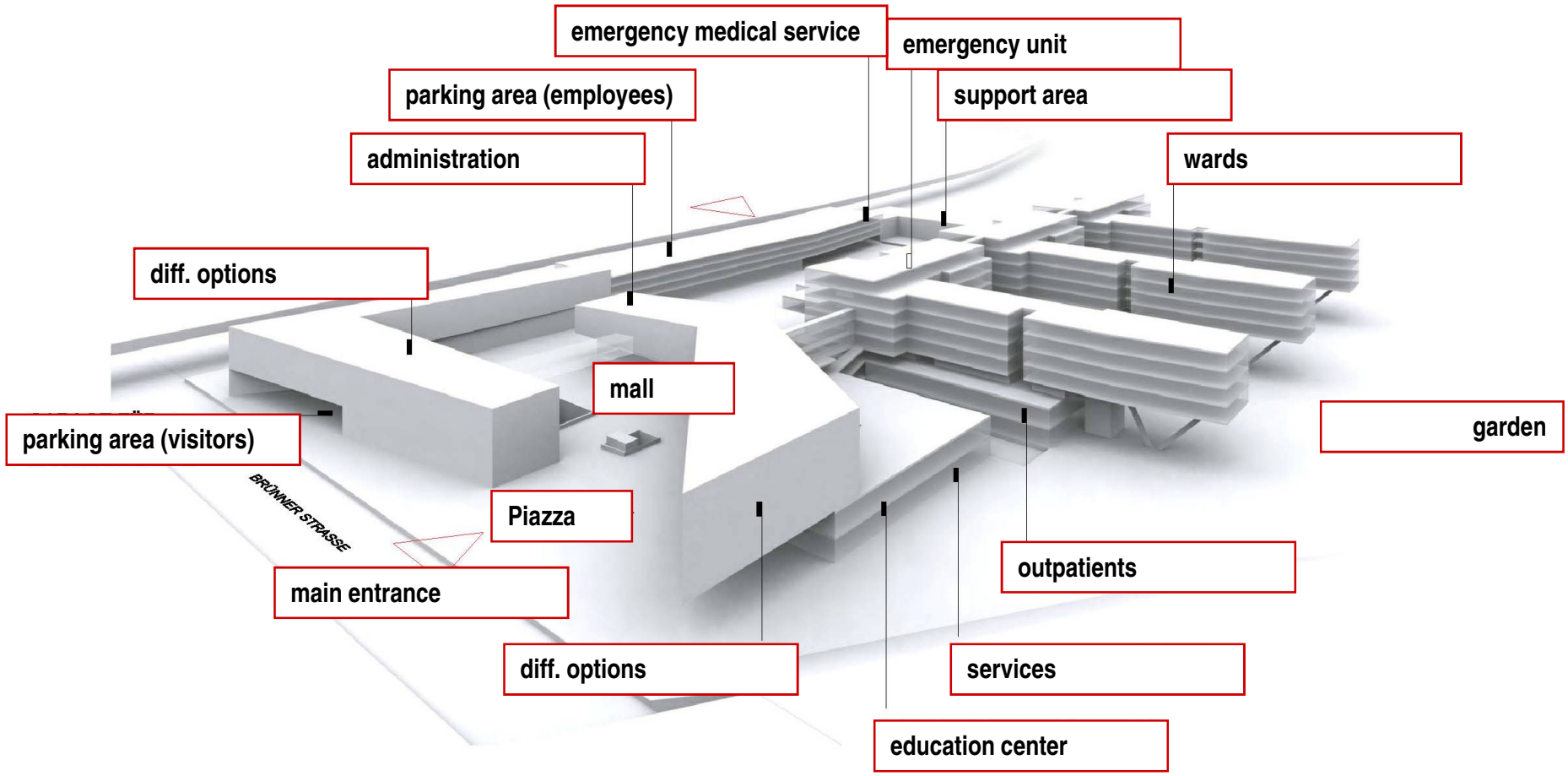

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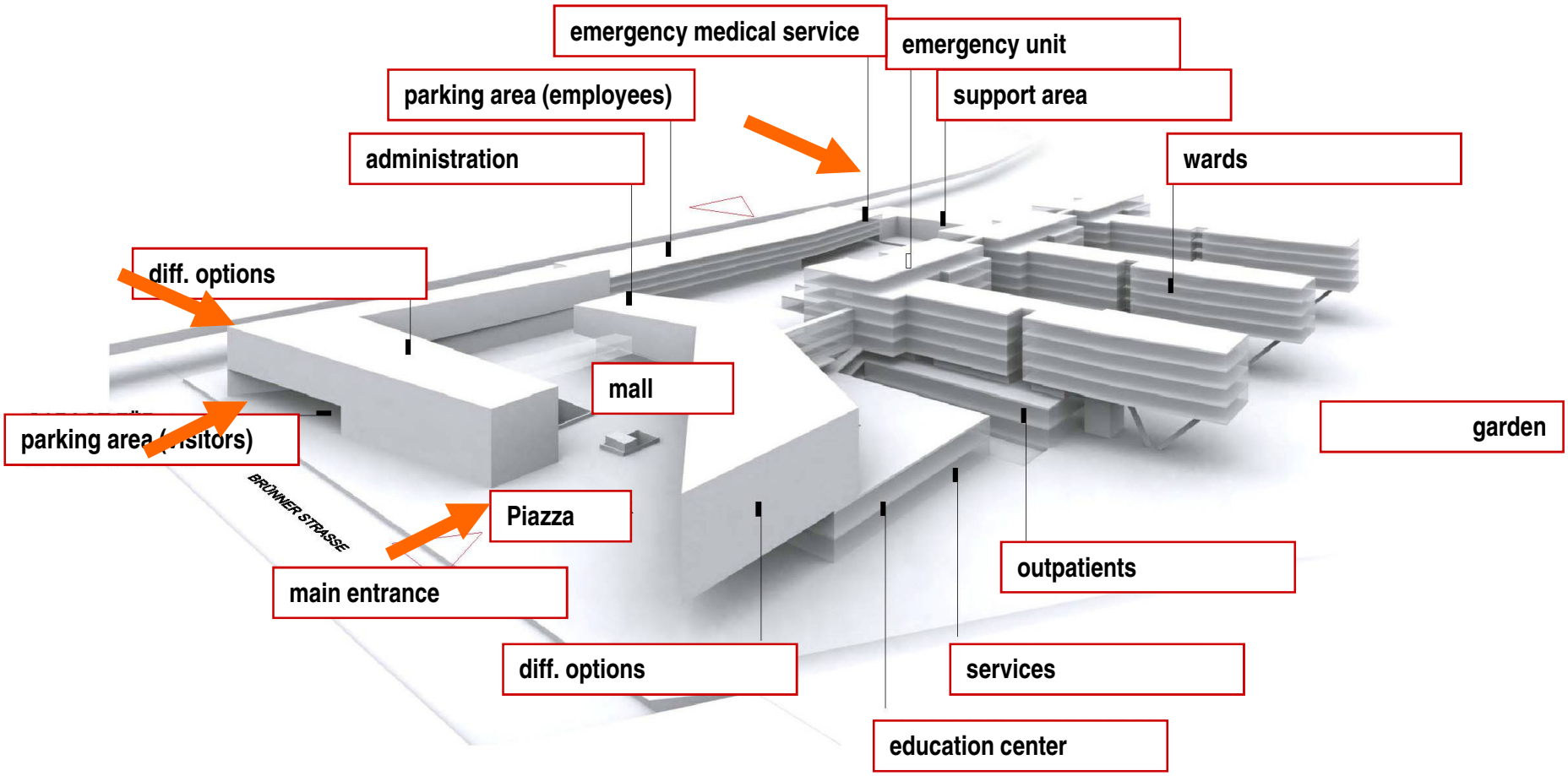

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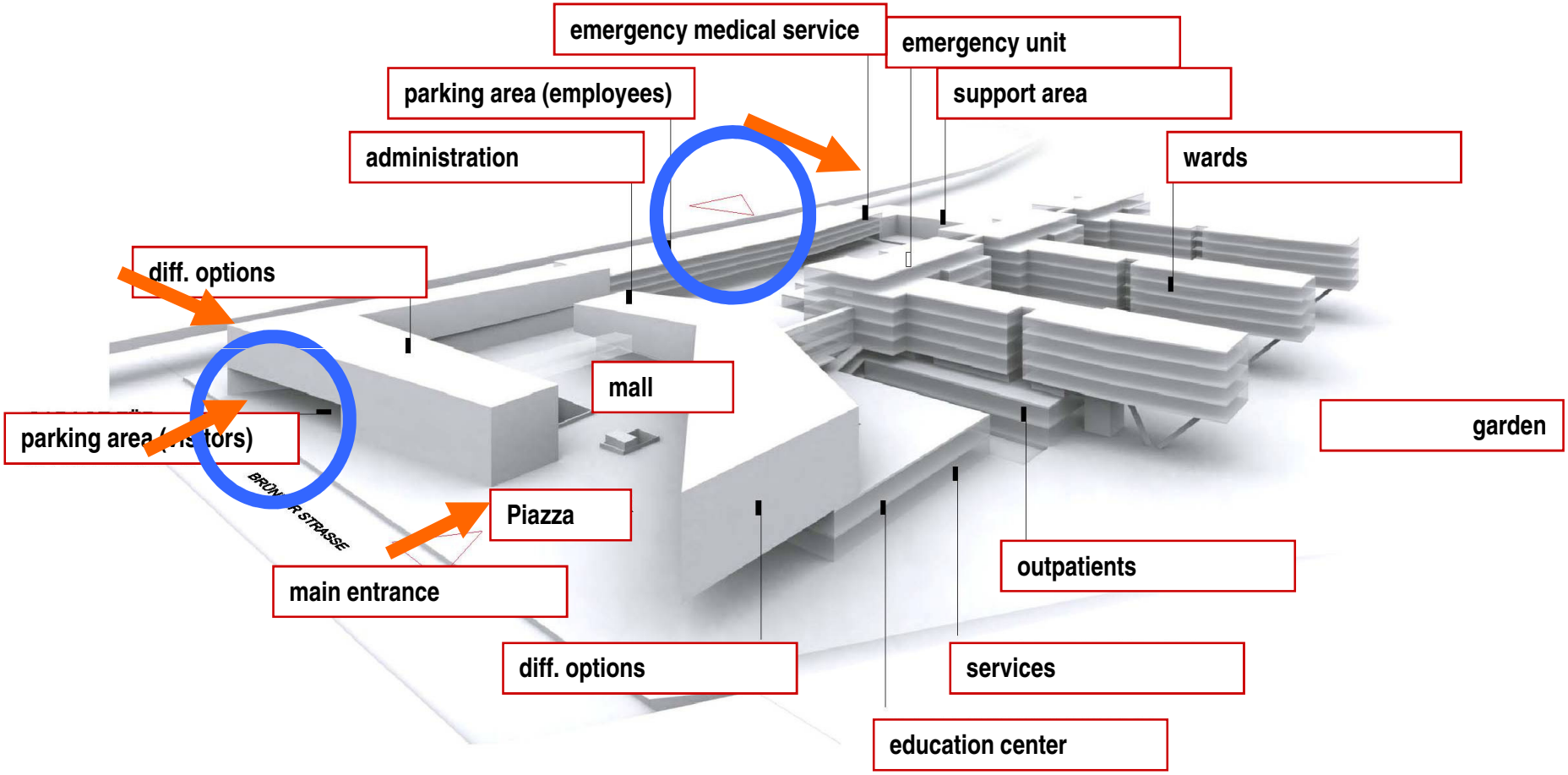

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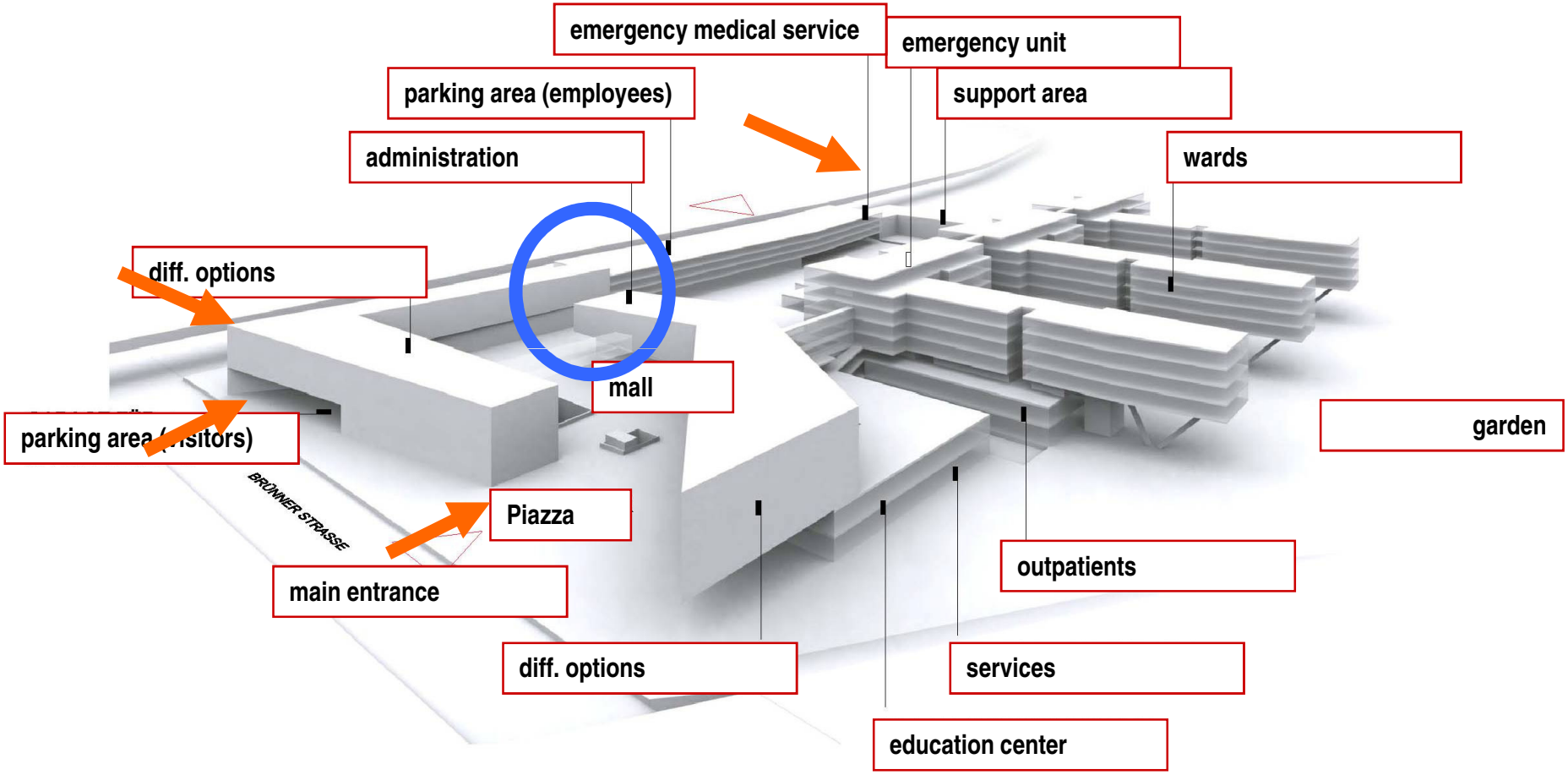

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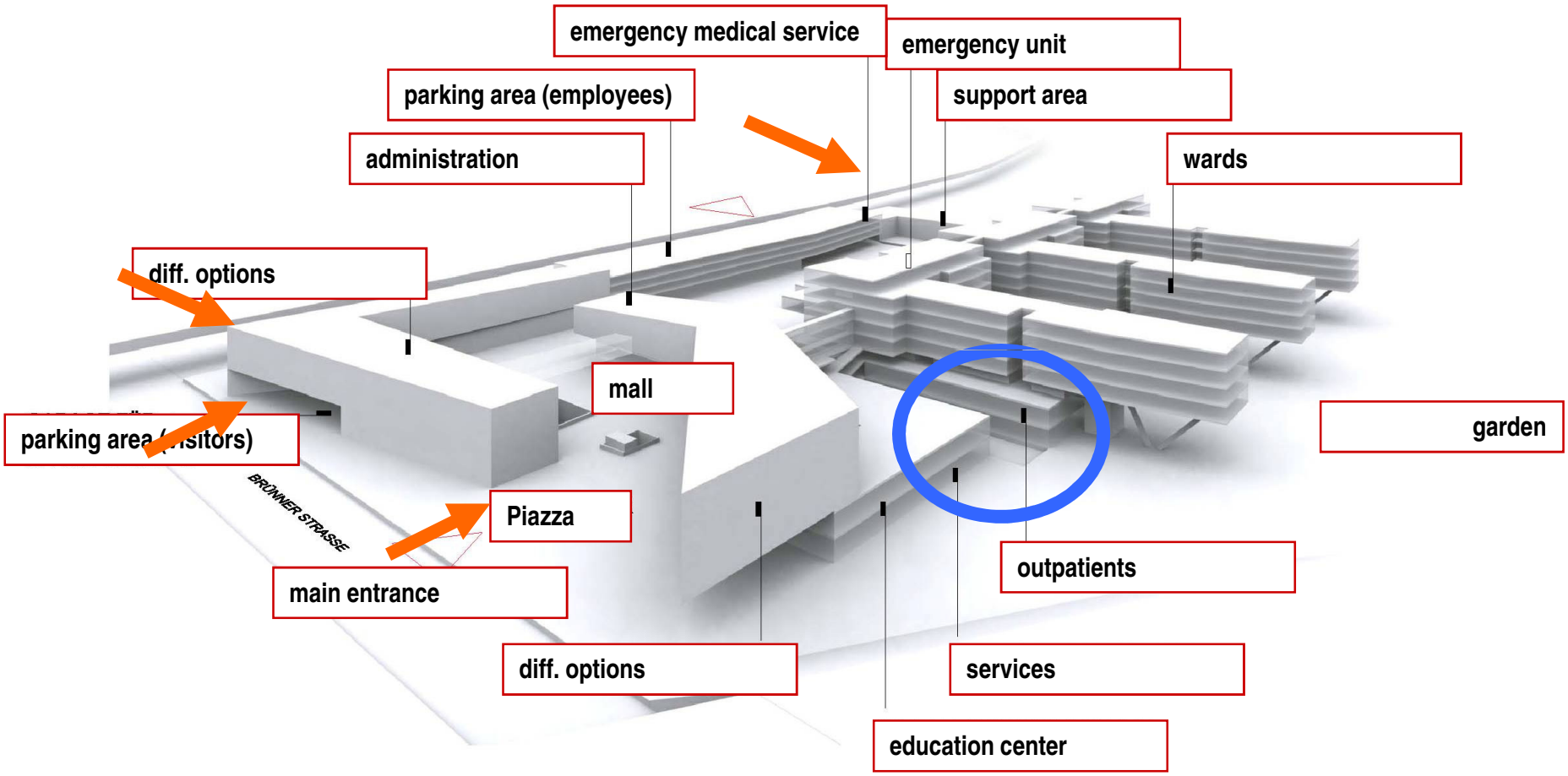

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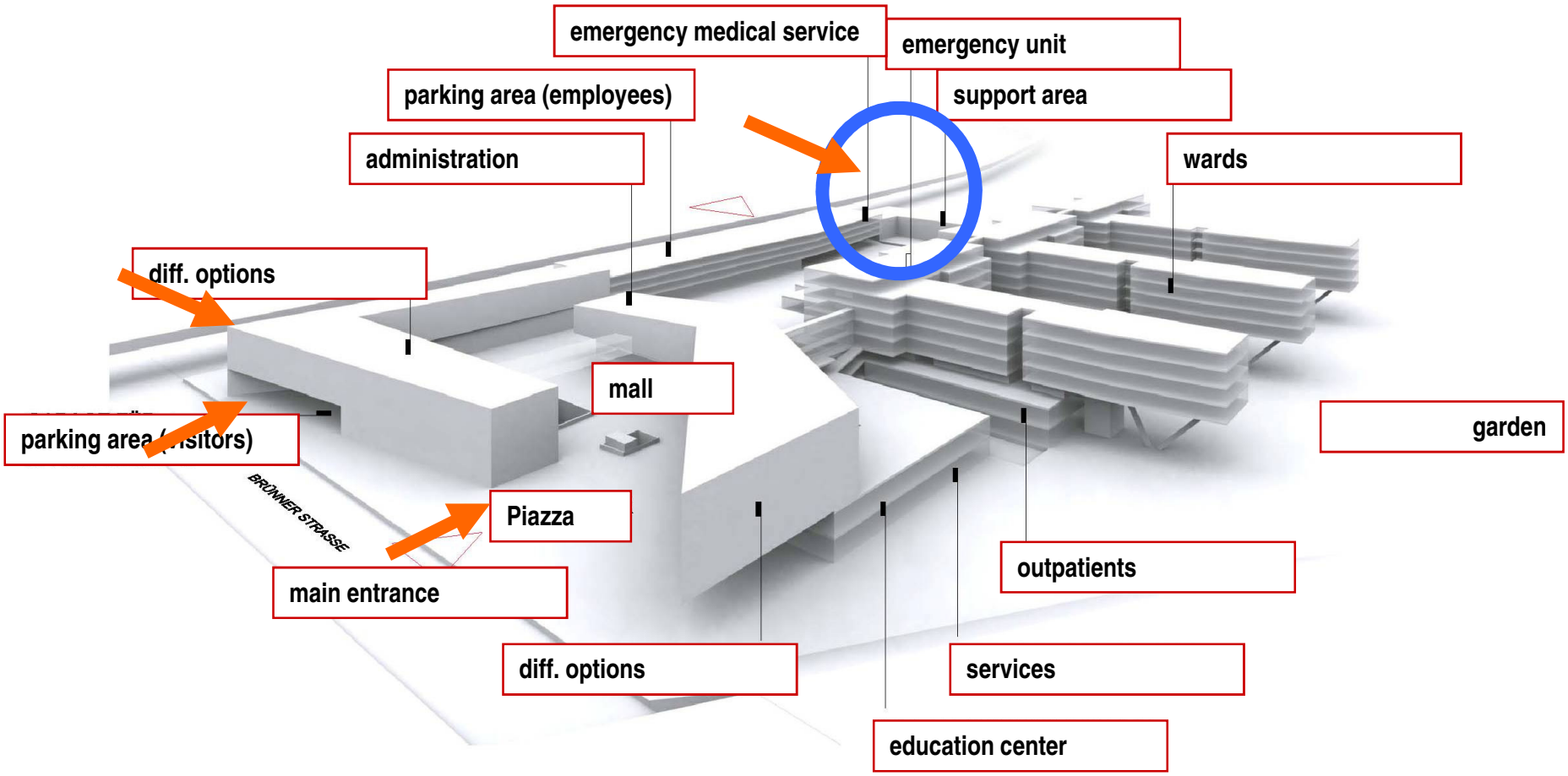


Facts & figures

- ~ 850 beds
- ~ 120.000 sqm building ground
- ~ 150.000 sqm gfa (~ 5000 rooms)
- ~ 2.500 employees

- ~ 40.000 inpatients per year
- ~ 250.000 outpatients per year
- ~ 16.000 surgeries

Project schedule

• start of the schematic design phase	March 2009
• ground-breaking ceremony	beginning 2010
• opening	2014/2015

Identification requirements

Typical - „traditional“ – usage (1)

- since late 1980s a VHA-wide Hospital Information System has been supporting a wide range of medicial and administrative processes
- Important IDs have been printed as barcode (Code39) on forms or labels
  - ✓ to accelerate the data entry
  - ✓ to avoid errors
- ID of the electronic health record EHR (in-/out-patients)
  - ✓ organising the ADT-processes and outbound patients (patient ID or case number)
  - ✓ ambulance-ID-cards
- ID of special documents of the EHR
  - ✓ e.g. organising the order-entry process of laboratories or identifying the clinical, histological, pathological results
  - ✓ usage of labels posted on the specimen or the samples

Typical - „traditional“ - usage (2)

- other requirements for patient identification
  - ✓ for admittance into the surgery unit
  - ✓ identification wrist band
- Support of the data entry of diagnostic/disease/therapy codes (e.g. ICD-10)

- Besides the patient care context
  - ✓ Support of drawing up an inventory by posted barcode labels on every equipment.

Current requirements

- Disorientiated, demented patients
  - ✓ alarming systems (in case of leaving the ward or the hospital)
- ID Card(s) for staff members
  - ✓ e-cash
  - ✓ key (doors, locker)
  - ✓ access to special services (e.g. library)
  - ✓ parking area
  - ✓ cafeteria
- Advanced support for facility management services
  - ✓ Room-ID, technical equipment
  - ✓ checkpoints (security tours, cleaning)
- Traceability of automated transport systems

Future requirements

- Traceability of garment

  -> reduced inventory, logistics cost

- Traceability of surgical instruments

  -> improving quality

- Personalized identification of medication

  -> improving quality

- Searching/finding/locating medical devices

  -> supporting device pools

- Calling the nearest located stretcher-bearer

  -> improve efficiency

Challenges for Vienna North Hospital

- Sum of „traditional“ + „current“ + (some of) „future“
  - ✓ maximising patient safety
  - ✓ decreasing administration costs
  - ✓ providing high quality of all processes
  - ✓ optimising efficiency of all services
- Optimising the support processes
  - ✓ laundry
  - ✓ medication
  - ✓ sterilisation services
  - ✓ facility management services
  - ✓ management of the supply chain (storage, purchase orders, delivery)
  - ✓ automated transportation systems

Some highlights of ID-supported services planned in the VNH project

Garment logistics

hand-out system for employees:

user identification

selection of the garment

(RFID-tagged) garment is presented automatically to the person on a hanger

personal credit is reduced

returning points:

putting the garment into a container

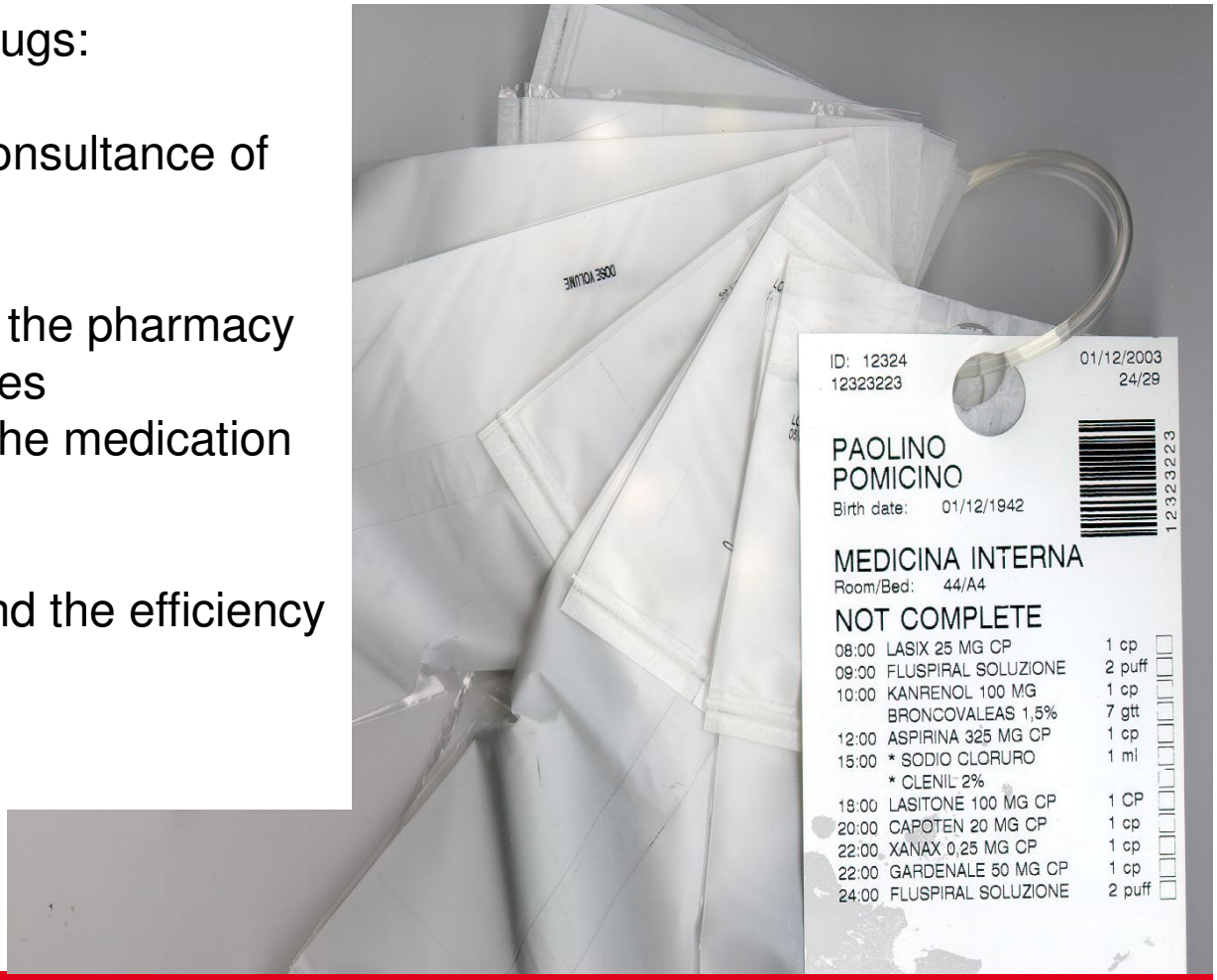
personal credit is increased

Medication

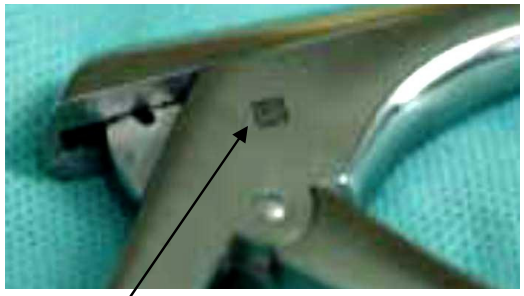
Innovative supply chain for drugs:

- bed-side prescription with consultance of clinical pharmacists
- automated order entry
- manufacturing/packaging at the pharmacy
- delivery in unit dose packages
- bed-side documentation of the medication

Primary objectives:
Enhance the patient safety and the efficiency of the drug supply



Sterile Services



Data- Matrix

RFID

- ✓ 15 OP-rooms, 16.000 surgeries per year
- ✓ Surgical instruments: 50.000 sterile good units per year
- ✓ Sterilisation Service Unit at Donauspital, will provide the services for VNH

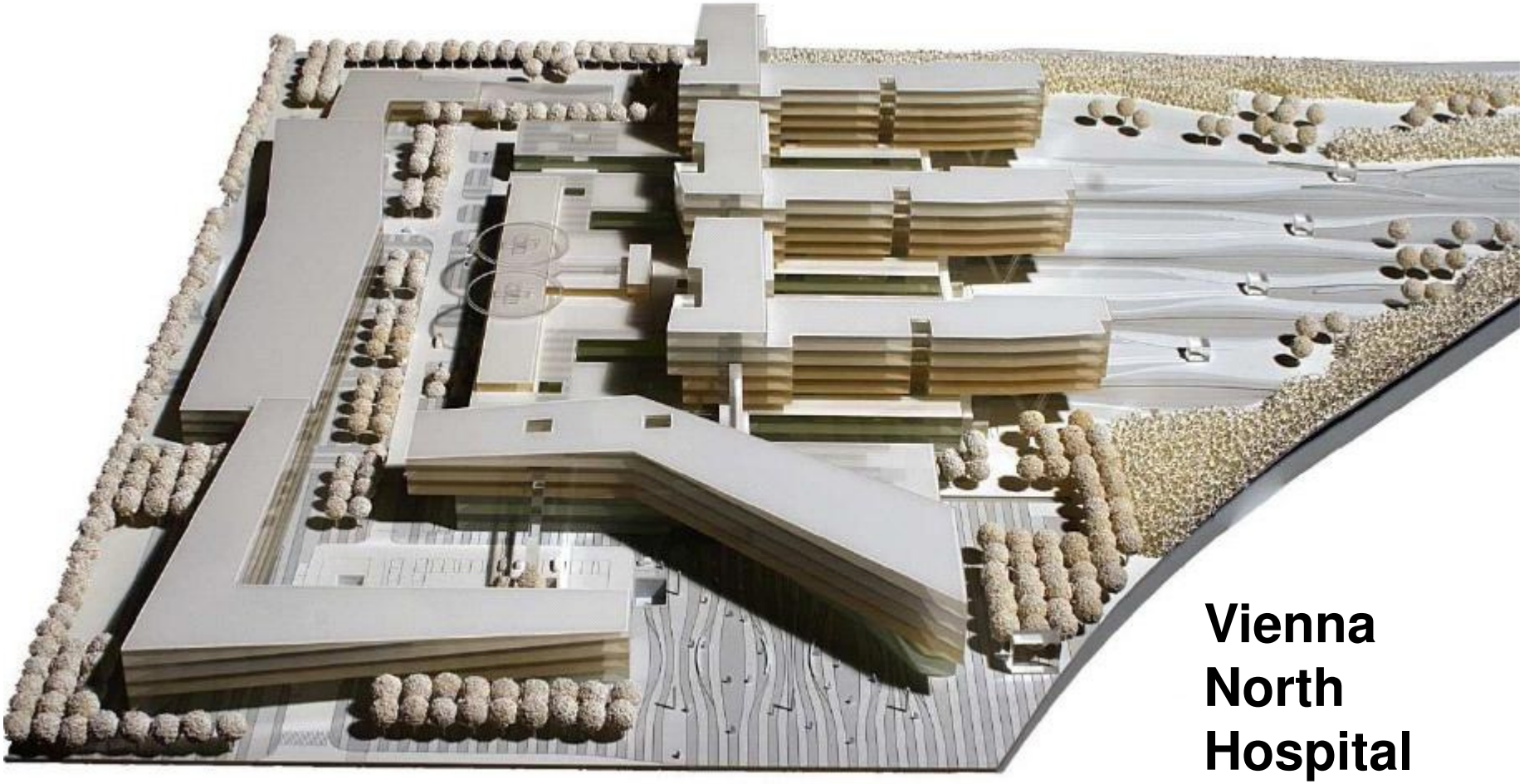
- ✓ Traceability of all instruments throughout the complete cleaning, sterilisation and supply cycle
- ✓ Individual identification of all instruments (instrument marking)

- ✓ High quality of services due to the medical products act and other guidelines:
  - e.g. Prion diseases (e.g. Creutzfeldt Jakob Disease-CJD) requires specific deactivation process
- ✓ Validation of the complete sterilisation process

Critical factors of success

- Management of the increased dependency of the quality of the patient care processes on automated supply processes
  - ✓ special attention to risk management
  - ✓ high reliability and fail-safety of all technical systems
  - ✓ availability of back up solutions
- Tolerable costs and ease of handling for marking, tagging and administering of individualized items
- Very good support of coding systems and standards by all relevant IT-solutions in health care, specially ease of integration in the IT-infrastructure of the hospitals‘
- Long term availability of standardised solutions for protection of investment.

Thank you for your attention!



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