

MAASTRO PROTON THERAPY

Maastricht, the Netherlands



The proton center at Maastricht is the first, true compact proton therapy system in Europe.

Maastricht Proton Therapy (formerly known as ZON-PTC) is a private, non-profit organization with public function to offer state-of-the-art treatments to the in the greater Maastricht region, while at the same time maintain their commitment to scientific research in Europe and as part of Mondial Research Group. After a thorough European tender, Mevion was selected as the preferred bidder due to Mevion's capabilities to fully integrate into the existing department.

SITE REFERENCES

GEERT BOSMANS, PH.D.

MANAGING DIRECTOR,
HEAD OF PROTON
THERAPY CENTER

MARIA JACOBS, PH.D.

CHIEF EXECUTIVE
OFFICER
MAASTRO

TREATMENT PLANNING SYSTEM

RAYSTATION

ONCOLOGY INFORMATION SYSTEM

ARIA

ARCHITECT

ARCHITECTEN AAN
DE MAAS

ENGINEERING

ENGIE SERVICES

CONTRACTOR

LAUDY BUILDING

2019

CENTER OPENED

11

**MONTH
INSTALLATION**

1

**YEAR FROM
ACCELERATOR
DELIVERY TO
PATIENT TREATMENT**

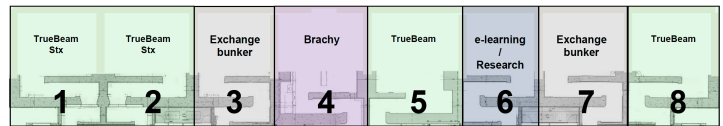
1.5

**LINAC BUNKERS
RE-PURPOSED**

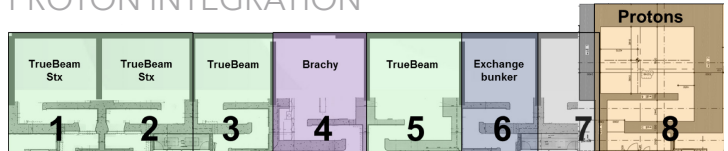
FACILITY LAYOUT

The proton therapy center was constructed in a narrow space between three existing buildings. One and a half LINAC vaults were demolished and was replaced with a MEVION S250i Proton Therapy System® vault. This has enabled Maastrro to co-locate the proton center with the existing radiation oncology department to cross-utilize resources.

ORIGINAL FLOORPLAN



PROTON INTEGRATION



CONSTRUCTION TIME LINE

Mevion's compact system is designed to reduce project time line risk and minimize time between groundbreaking and patient treatment. Mevion's recent deployment of a system at Maastrro in the Netherlands is a clear example of the fast deployment of the Mevion system.



The contract between Mevion and Maastrro was signed in September of 2016, initiating the project. After a few months of finalizing architecture design and project plans, the demolition of the existing bunker began in January of 2017. During this time, the center continued to operate the adjacent linear accelerator systems. Following a 4-month demolition, construction of the new proton vault began in April of 2017. In February of 2018 the accelerator was delivered and the installation process began. One year later, the first patient was treated on February 7th, 2019.



JANUARY 2017 - DEMOLITION BEGINS



APRIL 2017 - CONSTRUCTION BEGINS



SEPTEMBER 2017 - VAULT WALLS COMPLETE



JANUARY 2018 - FIRST INSTALL DELIVERY (GANTRY ARMS)

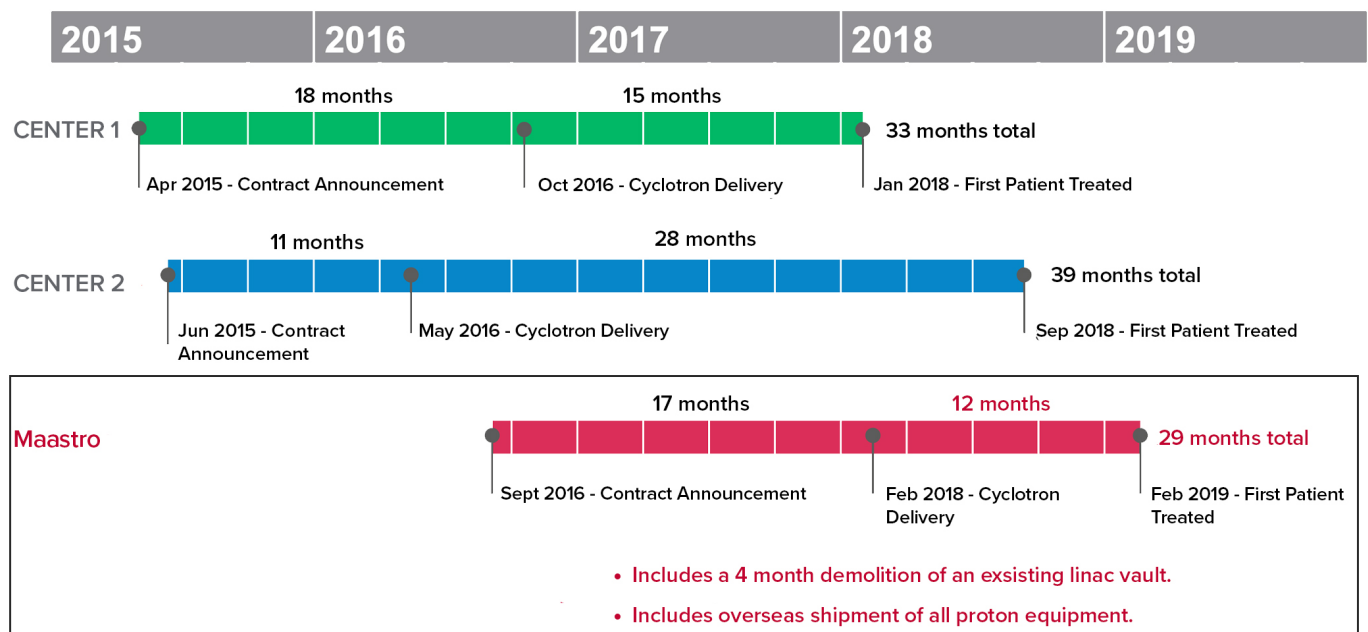


FEBRUARY 2018 - ACCELERATOR DELIVERY



FEBRUARY 2019 - FIRST PATIENT TREATMENT

This time line is actually the fastest installation of any of the 3 centers in the Netherlands. Systems were provided by IBA, Varian, and Mevion to centers in Groningen, Delft, and Maastricht respectively. This achievement is even more significant considering the need demolish the existing linear accelerator bunker.



KEY DESIGN FEATURES FOR FAST INSTALLATION

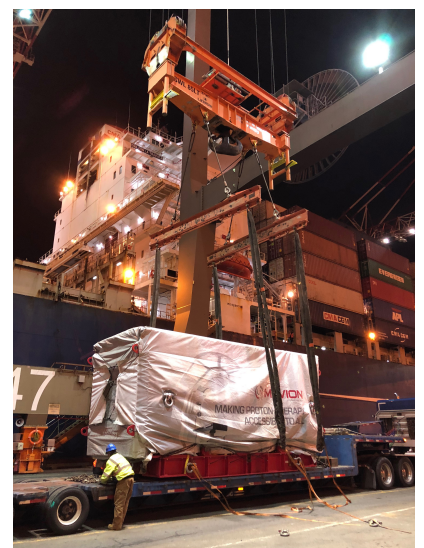
► Compact size reduces construction scope and construction risk.

The Mevion compact design is 50% smaller than competitive single-room systems and is drastically smaller than traditional multi-room system. This directly reduces construction cost, time line and risk.

However, construction scope in proton projects often goes much further than just the vault. Larger systems often are forced to be built far from the existing radiation oncology department. This leads to the need for additional construction of dedicated clinical spaces, connecting hallways, and facilities space that can escalate beyond early construction estimates and complicate installations.

► Pre-tuned system able to be shipped globally.

The Mevion accelerator module is so compact, that more of the subsystem can be pre-tuned in the factory before being shipped through standard trucking and shipping modalities. This design efficiency enables faster deployment to global locations.



CONSTRUCTION FLEXIBILITY

Mevion has had experience embedding proton systems in a variety of configurations. These systems have been installed in new construction, existing hospitals, radiation therapy departments, underground, and in tight spaces - such as unused ambulance bays, courtyards, and even under an existing parking garage.



Medstar Georgetown University Hospital utilized unused space at the entrance of their cancer center.



Ackerman Cancer Center added a bunker directly onto their facility.



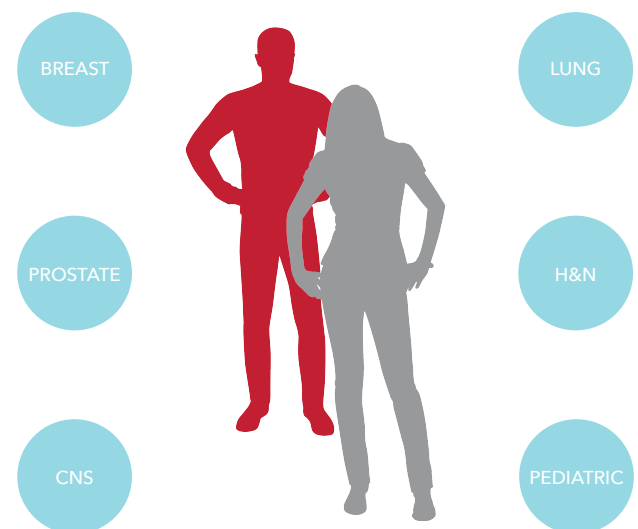
Barnes-Jewish Hospital created space in an existing parking garage.



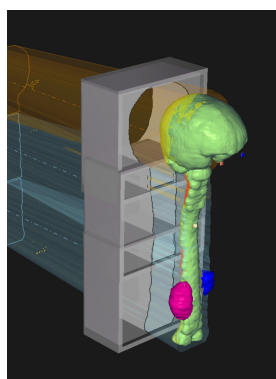
Robert Wood Johnson University Hospital renovated an existing MRI center to create a two-room proton facility.

SYSTEM RAMP UP

Since opening in February of 2019, the proton center has treated head and neck and breast cases. Treatments are based on Standard Indications such as childhood tumors, eye tumors and skull base tumors and Dutch Model-based indications which include special cases of breast, head and neck, lung and prostate cancer where there is a risk to surrounding organs.



INTEGRATION



Mevion's open platform system allows centers to integrate the most advanced technological innovations to enhance their clinical functionality. As one of the first centers to utilize the ImagingRing™ CBCT and RayStation™ 8B with Mevion's HYPERSCAN® Pencil Beam Scanning, this powerful combination has elevated Maastricht's clinical capabilities. In March 2019, they became the first center in the world to treat a case with unique aperture shapes at every energy layer through the use of Mevion's Adaptive Aperture® proton MLC.



Mevion Medical Systems was established in 2004 with a simple goal: to provide superior proton therapy to as many cancer patients as possible.

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