



TORUŃ

FORTIFICATIONS

1 Defensive walls and towers

Toruń, founded in the Middle Ages, was surrounded by defensive walls from the very beginning. Originally, wooden and earthen ramparts protectively surrounded the Old Town which was later moved to its current location in 1236. Several years later, brick defensive walls were erected in place of the ramparts, with a water-filled moat in front of them. The oldest part of these walls can still be seen at the exit of Pod Krzywą Wieżą Street. There is a 6 m high wall with extended battlements, and every other one of them has a narrow window used to observe the enemy's actions. High at the base of the battlements, there is a special walkway called a berm that defenders used to move and change positions. It is possible that the berms were previously slightly widened with a wooden deck. The berm could also be used to shoot attackers with bows or crossbows. This was facilitated by crenels, i.e. gaps between the battlements. Their width allowed for convenient and effective bow fire over the surrounding area. After bow shots were fired, the archers would hide behind the battlements, from where they could observe the enemy or prepare to continue shooting their bows. The wall itself was made in the opus emplectum technique which consisted in filling the external brick walls with a mixture of brick and broken stones mixed with lime mortar.

Defensive towers were built within the defensive walls every few dozen metres. These towers were originally rectangular and had three walls. The absence of a wall from side facing the town side made it easier to supply the tower with ammunition, delivered via ladders directly to individual levels, and in the event of the tower being captured by the enemy it made it impossible for the intruders to hide from the tower's defenders.

At the turn of the thirteenth and fourteenth centuries, after the modernisation of the defensive walls and the erection of the so-called low wall (parapet), the towers were rebuilt, and the fourth wall and a hipped roof were added. In the years to follow, in some of these towers people used to live, whereas others were adapted into workshops, or - as in the case of the famous Toruń Leaning Tower - into prisons.

Out of the over three-kilometre-long medieval defensive wall and more than 40 towers surrounding the Old and New Town in Toruń, almost the entire section of the walls along the river Vistula has survived to this day (apart from the above-mentioned battlement). The best view of these walls is from the quay, the road bridge or Kępa Bazarowa, which is an island on the other side of the river. From the side of the river Vistula, one can also see three of the eight surviving towers. At Rapackiego Square, one can see a fountain, whose width mirrors the width of the medieval town moat.

2 Gates and barbicans

Gates were erected at the intersection of the defensive walls and streets leading out of the town. From the town's side there were five of them (Starotoruńska/Old Toruń, Chełmińska/Chełmno, Prosta/Straight, Św. Katarzyny/St Catherine and Św. Jakuba/St James), four led to the river Vistula (Promowa/Ferry, Łazienna/Baths, Żeglarska/Sailor and Klasztorna/Monastery), and two gates (Kotlarska/Coppersmith and Paulińska / Paulerska/Paulinian) connected both the old and the new towns with each other that were also separated by defensive walls. Four other gates led to the castle of the Teutonic Order (Mennicza/Mint, Młyńska/Mill, Garbarska/Tanner and Zachodnia/West).

In the fifteenth century, in front of the Old Toruń and Chełmno gates, on the other side of the moat, special defensive towers - barbicans - were erected. Their task was to additionally reinforce the existing gates and to place the most recent military solution in these buildings, namely, batteries of artillery. At the same time, the Promowa/ Ferry Gate was rebuilt. The new structure was built on a square plan with rounded corners. In front of it, a permanent bridge over the river Vistula was built in 1500. Since then, this gate has been called the Mostowa/ Bridge Gate.

Several medieval gates have survived to our times. These are three watergates (directing vessels towards the quay): Mostowa/Bridge, Żeglarska/Sailor and Klasztorna/ Monastery, as well as two gates leading towards the castle: Młyńska/Mill and Zachodnia/West. However, a keen eye will also notice the remains of the third castle gate - the Mennicza/ Mint Gate.



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3 Castles

The ruins of two castles can be found in Toruń today. The first of them, somewhat wedged between the Old and New Town, was built by the Teutonic Knights in the mid-thirteenth century. It was a well-fortified complex of buildings, which, after their extension in the fourteenth and fifteenth centuries, covered an area of approx. 2 ha. This complex comprised the high castle with a tower located in the centre of the courtyard and another, additional one, standing over the stream of the lower outer bailey; this tower fulfilled sanitary and defensive functions and was called Dansker - Gdanisko. The high castle was surrounded by its own defensive walls that had one gate leading inside over the moat. On the outer side of the moat, two outer baileys were built. On the west side, buildings with functions important for the knights were built (e.g., the summer refectory, apartments of the castle commander and the castle mintmaster), hence this part was called the low castle, although the term 'upper outer bailey' is more frequently used. On the east side, at the lower outer bailey, there was a mill powered by the waters of a specially directed stream, the castle hospital and the aforementioned Dansker, which discharged waste into the millstream (fortunately, below the mill level), and then the waste was discharged into the Vistula. The two outer baileys were separated by a defensive wall, the oldest part of which is made of stone (it is probably the oldest stone wall in Poland with battlements and a gallery on the berm). From the outside, the outer baileys were also surrounded by defensive walls. This arrangement of fortifications meant that in the event of an attack, the attackers had to overcome three separate barriers designed and prepared to fend off an attack before reaching the high castle.

Despite such good and effective protection, in February 1454 the townspeople succeeded in capturing the castle. They were helped by mercenary soldiers guarding the stronghold who, for decent money, opened the castle gates and let the attackers in. After the Teutonic Knights were expelled, the castle was pulled down (only Gdanisko was left), and the townspeople set up a garbage dump in its place instead. In the early seventeenth century, on the site of the demolished castle, an earthen rampart was constructed, which was called the Mint, whose gunpowder magazine was converted from the surviving Dansker. This rampart closed the gap in the fortified walls resulting from demolishing the castle walls, which once had been an integral part of the town's defensive system.

In the years 1958–66, extensive archaeological works were carried out in the area of the castle, owing to which today we can admire the cellars and the ground floor of the former Teutonic castle, as well as go through a roofed gallery to the former Gdanisko.

The Teutonic castle is open all year round to visitors who can visit it on their own or with a guide. An additional tourist attraction are open-air events such as concerts as well as historical reenactments that tell us about the history of the Teutonic Order and life in a medieval town.

The second stronghold in Toruń is Dybów Castle erected by King Władysław Jagiełło (Jogaila) ca. 1428. It was built on a headland jutting out to the river Vistula (today, almost 200 m away from it), on its left bank and almost exactly opposite the Old Town in Toruń. It was used as the royal watchtower in the Nieszawa commandry that was taken over from the Teutonic Knights after the Treaty of Melno. However, as early as 1431, the Teutonic Order with the help of Toruń townspeople conquered the castle and the Teutonic Knights occupied the stronghold for four years. When the castle was taken over by Poles again, it was extended and later became the seat of a burgrave, and after the Thirteen Years' War, royal starosts used it as their official residence. The splendour of the castle declined along with the Swedish invasion of Poland, when it was blown up. From that time on, during each siege of Toruń, artillery batteries were placed around the ruins of the castle and used to shell the town. The last military event in the mid-nineteenth century was an attempt to rebuild the stronghold into a small fort. At that time, large artillery loopholes were made in the walls, and the entire building was shielded on the south and west with a zigzag earthen rampart that has survived until our times.

Currently, the ruins of Dybów Castle are eagerly visited by the locals and tourists, and the managing foundation provides a multitude of attractions that refer to the medieval period.

4 Bastions, moats, lunettes and tenailles

Already at the end of the fifteenth century it was clear that the old brick defensive walls could not withstand commonly used artillery. The high, yet relatively slender walls quickly surrendered to stone and later cast-iron cannonballs. The second, equally troublesome problem was the inability to place artillery batteries on the old fortifications, and the barbicans constructed at mid-century were only a partial solution. It became obvious that the town needed new and better fortifications. The first plans to surround Toruń with modern fortifications — bastions — were developed in the last decade of the sixteenth century, yet major construction work was started only after fending off the Swedish attack on the town in February 1629. Over the next several years, Toruń was surrounded by eight ten-metre-high earthen bastions, in front of which there was a 45m-wide water-filled ditch. The power of these structures is evidenced by the fact that the total width of the fortifications (145 m) was equal to the length of the defensive wall between the two gates on the Vistula — the Klasztorna / Monastery and Żeglarska/ Sailor Gates. The bastions in Toruń underwent their baptism of fire during the Swedish invasion of Poland when they defended the access to the town and stood against the besieging troops of King John II Casimir Vasa for over six months. Another war with Sweden put an end not only to the splendour of the bastions but also to the medieval barbicans. In 1703, King Charles XII of Sweden, after having captured the town, had the castle demolished and the barbicans blown up.

The ad hoc reconstruction of the bastions was carried out in the eighteenth century, before the town came under Prussian rule in 1793. However, the French thoroughly modernised the ramparts during the existence of the Duchy of Warsaw, when Toruń became an important stronghold for the Napoleonic army. In 1811, General Haxo — one of the most renowned French fortification engineers in the nineteenth century — began to construct fortifications in the town. As many as 109 properties standing in place of projected fortifications were demolished at that time. Even the Gothic church of St. George and a nearby cemetery, despite the fact that the townspeople wrote protest letters to King Frederick Augustus, could not be spared. In addition to the reconstruction of the bastions, the so-called lunettes and ravelins — V-shaped structures located in front of the ditch line and pointed at the enemy, on which cannons and artillery shooters were placed — were built. Unfortunately, despite the enormous outlays on the construction of fortifications, they did not withstand the Russian army which captured the town in April 1813 following a two-month siege.

The final stage of the further development of the bastions was carried out by the Prussians after 1815, when Toruń came back under their rule again. They repaired the bastions, and on the west side of the town, where groundwater used to wash out high embankments, they applied a more recent solution in the form of zigzag ditches called tenailles. In addition, in front of the line of permanent bastion and tenaille ramparts, they also erected six lunettes, concurrently demolishing some of those previously built by the French. Within the area of these bastions, many auxiliary facilities were built, such as artillery coach houses, provision warehouses, bakeries and barracks. The ditches were separated by six cofferdams, i.e., structures enabling the damming of water to the required level of 180 cm, and three forts were erected around the town that were to protect the most important elements of the fortress, such as the bridge or the railway station (built in 1861).

The Mint bastion, located at the eastern end of Bulwar Filadelfijski Street, has survived to our times. It is surrounded by the nineteenth century brick wall with triple artillery loopholes, known as the Carnot wall. Much more remained from the time of modernisation carried out by the Prussians in the 1820s. and 1830s. These are the remains of the tenailles with a ditch, which can be found in the vicinity of Rapackiego Square, two cofferdams between which the exit of the road bridge was built in 1934, barracks on the Vistula River (today the Bulwar Hotel), or the Ethnographic Museum's building on the other side of the Old Town, a former artillery coach house that was built in 1824.

5 Forts, bunkers and batteries

By the end of the 1870s, it became clear that even the modernised bastions and tenailles as well as the three old forts were incapable of coping with the latest military developments such

as modern cannons with rifled barrels. Their firepower could reach several kilometres, therefore the permanent ramparts around the town did not provide sufficient protection against the fire. The defence had to be moved to the foreground of the fortress, approx. 3 km away from the town. Seven modern artillery forts were erected there; they were equipped with a large number of cannons that could hit targets as much as 4 km away. They were self-sufficient buildings, with their own water intakes and food storages, capable of defence under a siege for some time. Each of them also housed two gunpowder magazines, in which about 50 tons of black powder could be stored, workshops for the production of ammunition and rooms for storing guns and equipment. All casemates and corridors were roofed with brick and concrete ceilings and were located under an earthen embankment. In each of the forts, over 500 soldiers were stationed who not only operated the fortress equipment, but also took defensive positions on the so-called interval, i.e., the area between forts prepared for defence. All the forts were connected by a parallel road that could be used to transport troops, supplies and ammunition, and could also make positions for marksmen. A few years later, another seven forts were built, this time for infantry. They had a smaller crew of about 200 people and did not have so many cannons, because with time it turned out that the latter were more effective in small batteries placed across the interval than in large artillery forts, themselves being an easy target. The infantry fort guns were used only for direct defence against the enemy attack. The armour fort built in the early 1890s — the only one on the eastern border of the German Empire — was absolutely unique. Its main armament — four 210 mm howitzers — was placed in special towers, resistant to any shell fire used at that time. Each of the armoured towers weighed 154 tons and was the top engineering achievement at the time. It was operated by eleven artillerymen, each of whom was assigned a special task, along with a non-commissioned officer in charge of them. In total, 371 soldiers and officers served in the fort. At the same time, 84 brick bunkers for infantry and artillery and for storing ammunition for cannons located nearby were built in the forts' interval. Similar to the forts, the bunkers also had three-layer walls, and above the brick ceiling there was a metre-thick concrete detonation slab installed on a shock-absorbing layer of sand. The Toruń fortress was further developed at the turn of the century. At that time, an experimental armoured tower to house a cannon, a battery of three guns on ship gun carriages and two armoured howitzer batteries were constructed. Just before the outbreak of World War I, several dozen concrete bunkers for infantry were erected in the outer field of the forts, about 1 km towards the town; in some forts, one-room concrete guardhouses were built. Fortunately for Toruń, none of these objects had to be tested in battle as during both world wars there were almost no fighting within the town.

After World War II, some nineteenth century fortress buildings were converted into factories and workshops. Several forts housed wine factories, in others, crops were purchased, and one was used as a mushroom farm. Unfortunately, at the end of the 1950s, some forts fell victim to a company harvesting brick from the walls surrounding the ditches, which caused the progressive destruction of these buildings. Luckily, in 1971 most of the forts were entered into the register of historical monuments, and thus their significant historical value was recognised and appreciated.

Contrary to medieval or modern fortifications, those from the final stage of the fortress's expansion have been preserved in such a good condition that the nineteenth century Prussian fortress in Toruń is considered the best-preserved complex of such buildings in Poland. To this day, you can see (unfortunately, some of them only from the outside) all 18 forts, including the armour fort mentioned above, and over 200 other facilities related to the army stationed in the town. A special „fortress” black tourist route leads to the most interesting — in historical and architectural terms — forts, and some of them, such as Fort IV, welcome visitors to see these unique buildings all year round.

First of all, we do encourage you to visit the Toruń Fortress Museum, which is located at the Bus Station in the building of the former Chelmo Gate Barracks. The charts, models and multimedia devices in the exhibition are presented to familiarise visitors with the centuries-old history of fortifications in Toruń. The exhibition is complemented by valuable exhibits, including a mobile armoured tower or guns used by soldiers defending the town. In the exhibition rooms, visitors can learn about various stages of the construction and operation of the Toruń Fortress, starting from the Middle Ages, through modern times, the nineteenth century until the end of World War II.

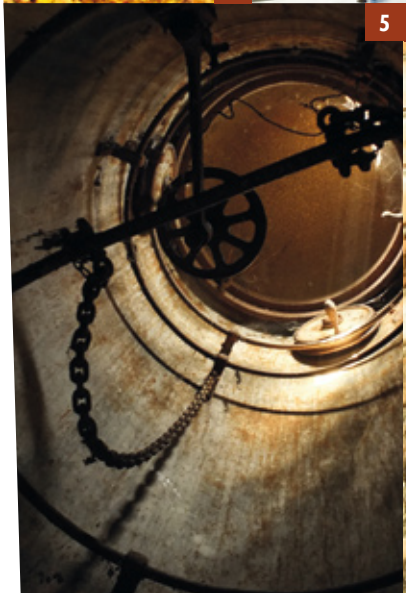


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