

# ДЯКРЯІРЧОТ

An extraordinary collection of pictures and sounds from the abandoned city of  
Pripyat & the Chernobyl exclusion zone during october 2010 - 2011

Photography by Ric Wright & Fraser Blakemore







# ОДЯКРЯІРЧОТ

## CHAPTER 1 - DISASTER

The disaster began during a systems test on Saturday, 26 April 1986 at reactor number four of the Chernobyl nuclear power plant in the northern area of the Ukraine.

At 01:23 local time there was a sudden power surge inside reactor 4, in order to try and stem the extent of the surge an emergency shut down was attempted. Due to a number of human failures and a flaw in the reactors RBMK control-rod design a more extreme spike in power output occurred, which led to a reactor vessel rupture and a series of explosions.

Within seconds of the original power surge the emergency shutdown procedure was underway but the length of time required by the cooling water generators and the movement rate of the control-rods to achieve affective speeds and positions was too great. There was a massive build up of steam pressure within reactor 4 which ruptured the fuel channels and eventually the reactors 2000-Tonne shield covering, the force of the explosion sent this shield cover over 100t in the air.

The remaining liquid coolant immediately turned to steam escaping the ruptured reactor which in turn released most of the nuclear material to the atmosphere...



# TIMELINE OF EVENTS

**25th April 1986**

**1.00am**

The reactor was running at full power with normal operation. Steam power was directed to both turbines of the power generators. Slowly the operators began to reduce power for the test. The purpose of the test was to observe the dynamics of the RBMK reactor with limited power flow.



**25th April 1986**

**1.00pm**

Twelve hours after power reduction was initiated the reactor reached 50% power. Now only one turbine was needed to take in the decreased amount of steam caused by the power decrease and turbine #2 was switched off.



**25th April 1986**

**2.00pm**

Under the normal procedures of the test the reactor would have been reduced to 30% power, but the Soviet electricity authorities refused to allow this because of an apparent need for electricity elsewhere, so the reactor remained at 50% power for another 9 hours.



**26th April 1986**

**12.28am**

The Chernobyl staff received the go to resume the reactor power reduction. One of the operators made a mistake. Instead of keeping power at 30%, they forgot to reset a controller which caused the power of the reactor to plummet to 1%. Water which was now filling the core caused xenon (a neutron absorber) to build up in the reactor. This amount of power was too low for the test. The water added to the reactor is heated by the nuclear reaction and turned into steam to turn the turbines of the generator which were now disabled, the steam had limited space to exit the reactor.



**26th April 1986**

**1.00am - 1.20am**

The operator forced the reactor up to 7% power by removing all but 6 of the control rods. This was a violation of procedure and the reactor was never built to operate at such low power. The RBMK reactor becomes unstable when the core is filled with water. The operator tried to take over the flow of water which was returning from the turbine manually this was a difficult task because small temperature changes can cause large power fluctuations. The operator was not successful in getting the flow of water corrected and the reactor was getting increasingly unstable.

The operator disabled the emergency shut down procedures because he feared a shut-down would abort the test.



**26th April 1986**

**1.22am**

By 01:22, when the operators thought they had the most stable conditions, they decided to continue with the planned test. The operator blocked an automatic shutdown on low water level condition and the loss of both turbines because of a fear that a shutdown would abort the test.



**26th April 1986**

**1.23am**

The remaining turbine was shut down and the testing begun.

By 1.23:40am power in the reactor began to gradually rise because of the reduction in water flow caused by the turbine shutdown which lead to an increase in boiling cooling water. The operator initiated a manual shut down which lead to a quick power increase due to the RBMK reactors control rod design.



**26th April 1986**

**1.23:50am**

Disaster Point - The reactor reached 120 times it's full power. All the radioactive fuel disintegrated, and pressure from all of the excess steam which was supposed to go to the turbines crushed all of the control rod channels and pressure tubes which blew off the 2000 tonne top shield of the reactor releasing the radioactive material into the atmosphere in a series of explosions.





# THE EFFECTS AND CLEAN UP

The Chernobyl disaster would go on to be the worlds worst nuclear disaster, the effects and fallout of the explosions at reactor number 4 reached as far as Sweden and the UK.

At first the Ukrainian officials denied that anything was wrong at the stricken nuclear power plant, firefighters were not aware that it was anything other than a routine fire. It was only until 2 days after the accident when radiation scanners at a power plant in Sweden were activated that the Ukrainian officials admitted anything was wrong.

The worst of the radioactive debris was collected inside what was left of the reactor, much of it shoveled in by "liquidators" wearing heavy lead protective suits (dubbed "bio-robots" by the military); these workers could only spend a maximum of 40 seconds at a time working on the rooftops of the surrounding buildings because of the extremely high doses of radiation given off by the blocks of graphite moderator and other debris.

Many of the vehicles used by the "liquidators" remain parked in a field in the Chernobyl area these will be covered later in DarkPripyat

The reactor itself was covered with bags of sand, lead, and boric acid dropped from helicopters: some 5,000 metric tons of material were dropped during the week that followed the accident. At the time there was still fear that the reactor could re-enter a selfsustaining nuclear chain-reaction and explode again. Because of this risk a containment structure was planned to prevent rain entering and triggering such an explosion, this would also prevent further release of radioactive material into the atmosphere.

The "sarcophagus" was the largest civil engineering task in history, involving a quarter of a million construction workers who all reached their official lifetime limits of radiation. By December 1986, a large concrete sarcophagus had been erected to seal off the reactor and its contents.

Ironically, the Ukraine did not receive most of the radioactive fallout, due to winds at the time the neighboring country of Belarus received the most damage...



Above: Liquidators on the roof of Reactor 4. Below: Inside Reactor 4





# RADIATION FROM CHERNOBYL

KiloBecquerels (KBq) per square metre

more than 1,480

185 to 1,480

40 to 185

10 to 40

2 to 10

less than 2

No data

Chernobyl plant

0 500 1 000 km

This map shows the effect of the fallout on Europe:

The radioactive plume drifted over large parts of the western Soviet Union and Europe. From 1986 to 2000, 350,400 people were evacuated and resettled from the most severely contaminated areas of Belarus, Ukraine and Russia.

Four hundred times more radioactive material was released than had been by the atomic bombing of Hiroshima. The disaster released 1/100 to 1/1000 of the total amount of radioactivity released by nuclear weapons testing during the 1950s and 1960s. Approximately 100,000 km<sup>2</sup> of land was contaminated with fallout.



## THE EFFECTS AND CLEAN UP

During our trip inside the zone we were invited to see the group of scientists which are monitoring the 30km exclusion zone around Chernobyl on a daily basis for changes in the Air, Water and Soil quality and the amount of contamination which is remaining in the area.

We were told about the efforts of the scientists to provide accurate information on the whole of the exclusion zone is helped by around 50 monitoring stations located around the area which monitor air and water quality. The scientists also take physical samples of soil and water to test in their laboratory which we were invited to see the procedure in practice:

- The sample of water/soil is placed into the 2 protected detectors which you can see in the pictures of the Lab.
- The detectors are then sealed and subject to particle scanning
- After a few minutes the computer will report the type of radioactive particle found and the amount of radiation it is giving off
- The results are logged and the sample is disposed

The scientists were also keen to let us know that most of the samples taken these days are relatively low in radiation and their scanning is mainly done to monitor how quickly the radioactive material released into the country is decaying.

To put some perspective on the amount of radiation a human would absorb while in Chernobyl the scientists gave the below comparisons:

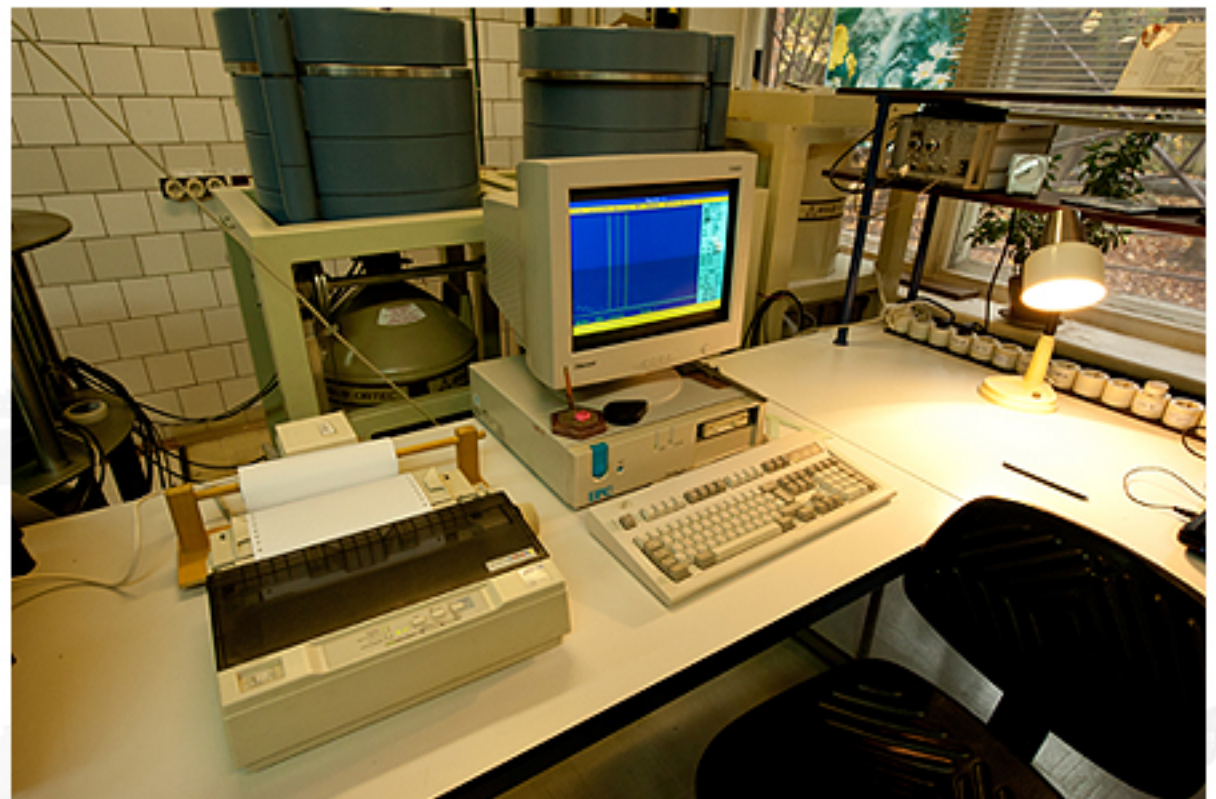
4-6uSv p/hr: Stood outside Reactor 4

0.5 - 1uSv p/hr: Most areas of Pripjat

40uSv: One way flight from New York to LA (6-7 hours)



Above: A Scientist explains their work. Below: Equipment used in the lab







## РЕАКТОР 4 - СЕГОДНЯ

Following the accident, questions arose about the future of the plant and its eventual fate. All work on the unfinished reactors 5 and 6 were halted three years after the explosions at reactor 4.

The Ukrainian government continued to let the three remaining reactors operate because of an energy shortage in the country. Reactor 1 was decommissioned in November 1996 as part of a deal between the Ukrainian government and international organizations such as the IAEA to end operations at the plant. On 15 December 2000, President Leonid Kuchma personally turned off Reactor 3 in an official ceremony, shutting down the entire site.

Today the sarcophagus which is covering the damaged reactor is failing and must be replaced, the amount of nuclear material still in the pit of reactor 4 is a significant threat if the sarcophagus was to collapse, even with the plants closure, around 1000 people still work there every day.

At the time of our visit they were working on the new sarcophagus, you can hear the foundations been pile driven into the ground below (a truly awesome but eerie sound).





The unfinished Reactor 5 sits dormant in the trees, work was cancelled on the 5th reactor around 3 years after the Chernobyl disaster. Picture by Andy Simmers



# THE FUTURE FOR CHERNOBYL

The existing shelter, formally referred to as the Object Shelter and often called the sarcophagus, was constructed between July and November 1986 as an emergency measure to contain the radioactive materials within reactor unit 4 at the Chernobyl nuclear power plant (ChNPP).

The shelter was constructed under extreme conditions, with very high levels of radiation, and under extreme time constraints. The Object Shelter was moderately successful in containing radioactive contamination and providing for post-accident monitoring of the destroyed nuclear reactor unit.

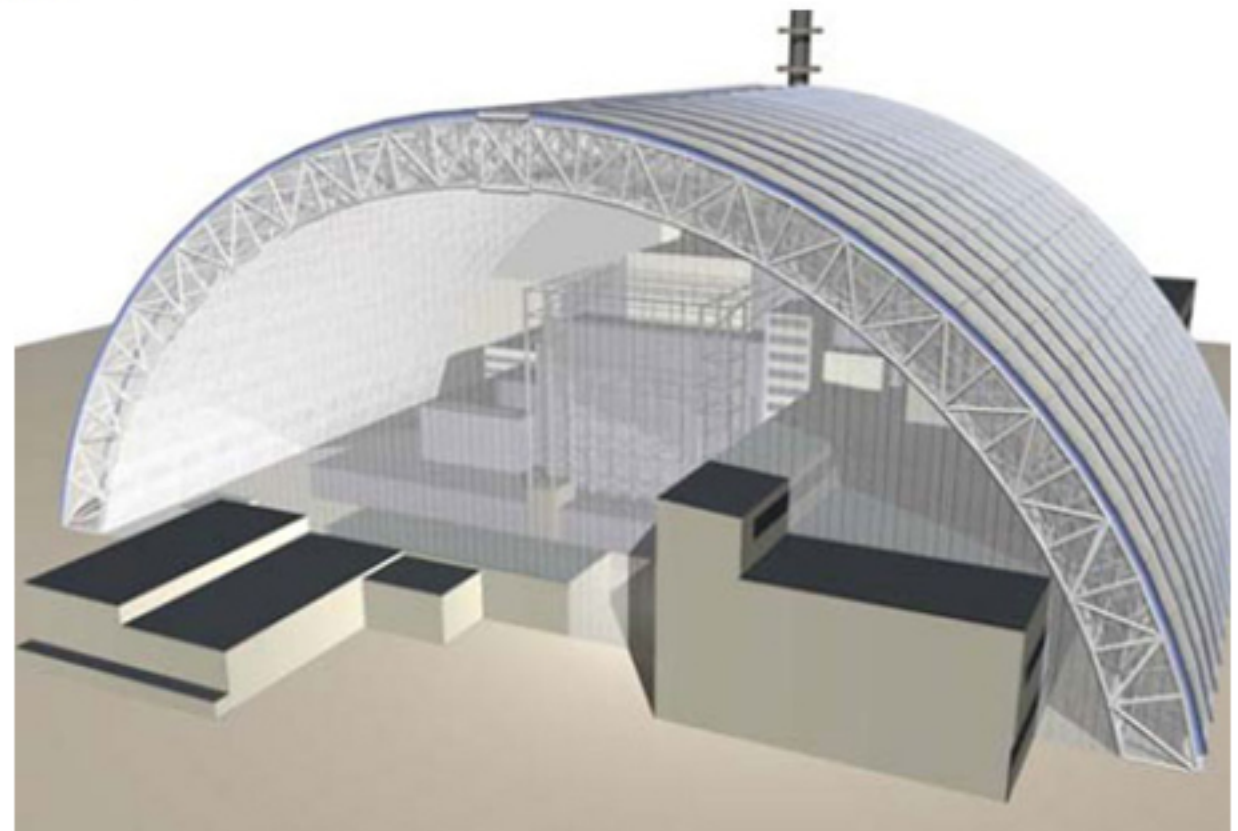
The Object Shelter was never intended to be a permanent containment structure, despite rumors to the contrary. Its continued deterioration has increased the risk of its radioactive inventory leaking out into the environment. It has been estimated that up to 95% of the original radioactive inventory of reactor unit 4 still remains inside the ruins of the reactor building.

The New Safe Confinement (NSC or New Shelter) is the structure intended to contain the nuclear reactor at Chernobyl. The idea is to prevent the reactor wreck from leaking radioactive material into the environment. Originally planned to be in place by 2005, as of 2011 the confinement is expected to be completed in 2015.

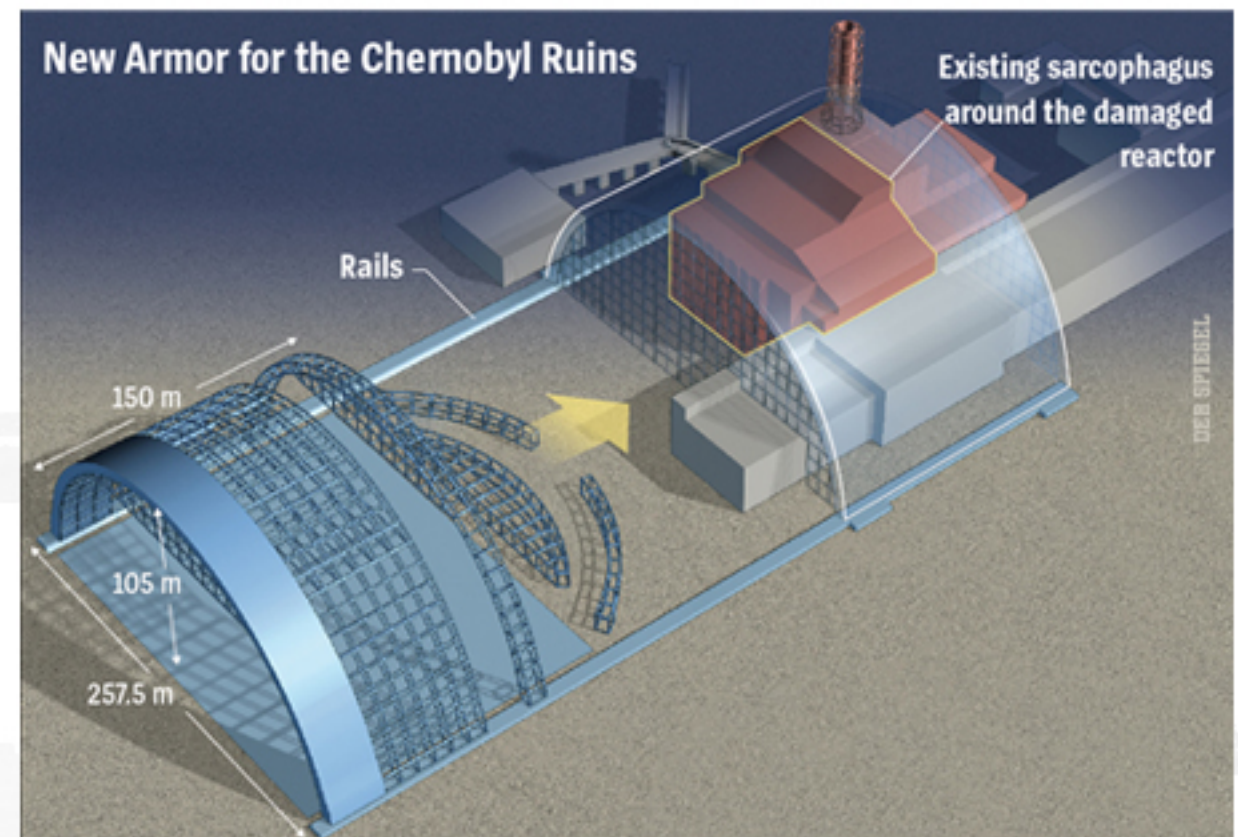
A part of the Shelter Implementation Plan funded by the Chernobyl Shelter Fund, the NSC is designed to contain the radioactive remains of reactor 4 for the next 100 years. It is intended to replace the existing "sarcophagus", that was hastily constructed after the accident destroyed reactor 4 on April 26, 1986.

On 17 September 2007, BBC News reported that the project contract was finally signed, with French consortium Novarka (consisting of Vinci Construction Grands Projects and Bouygues Construction as 50/50 partners) constructing the 190 by 200 meter arch structure. Construction costs were estimated as \$1.4bn with a project time of 5 years.

As of 2012 the NSC is around 7 years over schedule.



Above: The new shelter in place. Below: The new shelter will be slid into place





## ПРІП'ЯТ 25 РОКІВ ФП

Pripyat (Ukrainian: Прип'ять, Pryp'at'; Russian: Припять, Pripyat') is an abandoned town near the Chernobyl Nuclear Power Plant in the Kiev Oblast (province) of northern Ukraine, near the border with Belarus.

Pripyat was founded in 1970 to house workers for the Chernobyl Nuclear Power Plant. It was officially proclaimed a city in 1979 but was abandoned in 1986 following the Chernobyl disaster. It was the ninth nuclear city ("атомград" (atomograd) in Russian, literally "atom city") Pripyat was in the Soviet Union at the time.

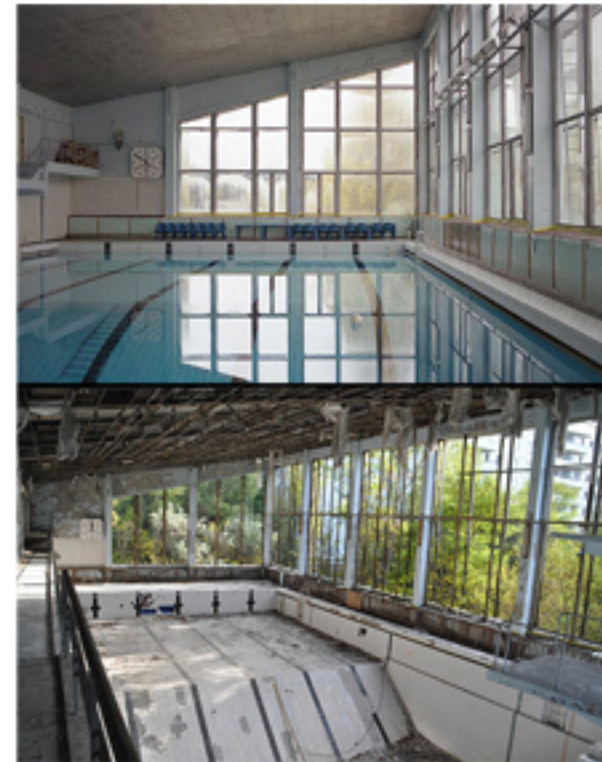
Access to Pripyat, unlike cities of military importance, was not restricted before the disaster as nuclear power stations were seen by the Soviet Union as safer than other types of power plants. Nuclear power stations were presented as being an achievement of Soviet engineering, where nuclear power was harnessed for peaceful projects. The slogan "peaceful atom" (Russian: мирный атом, mirnyj atom) was popular during those times.

Pripyat's population was 49,400 before the disaster. The average age was about 26 years old. Total living space was 658,700 m<sup>2</sup>: 13,414 apartments in 160 apartment blocks, 18 halls of residence accommodating up to 7,621 single males or females, and 8 halls of residence for married or unmarried couples.

One notable landmark often featured in photographs of the city, video games (such as Call of Duty 4: Modern Warfare and the Stalker series), are visible from aerial-imaging websites such as Google Maps, is a long abandoned ferris wheel located in the Pripyat amusement park.

The pictures of the right show a comparison between the city at it's prime in 1986 and pictures taken from our visits in 2010 and 2011.

The following chapters in this photo-book will showcase the interesting decay of a post nuclear disaster area from various areas within the well documented central Pripyat and the less seen areas in outer Pripyat and surrounding areas.



Pripyat Pool Before & After



Pripyat pool exterior



"Polesk" Hotel before & After



Cultural Palace before & After





Our day begins in Slavutich, the city was built for the evacuated citizens of Pripjat, most of the power plant workers commute from here.

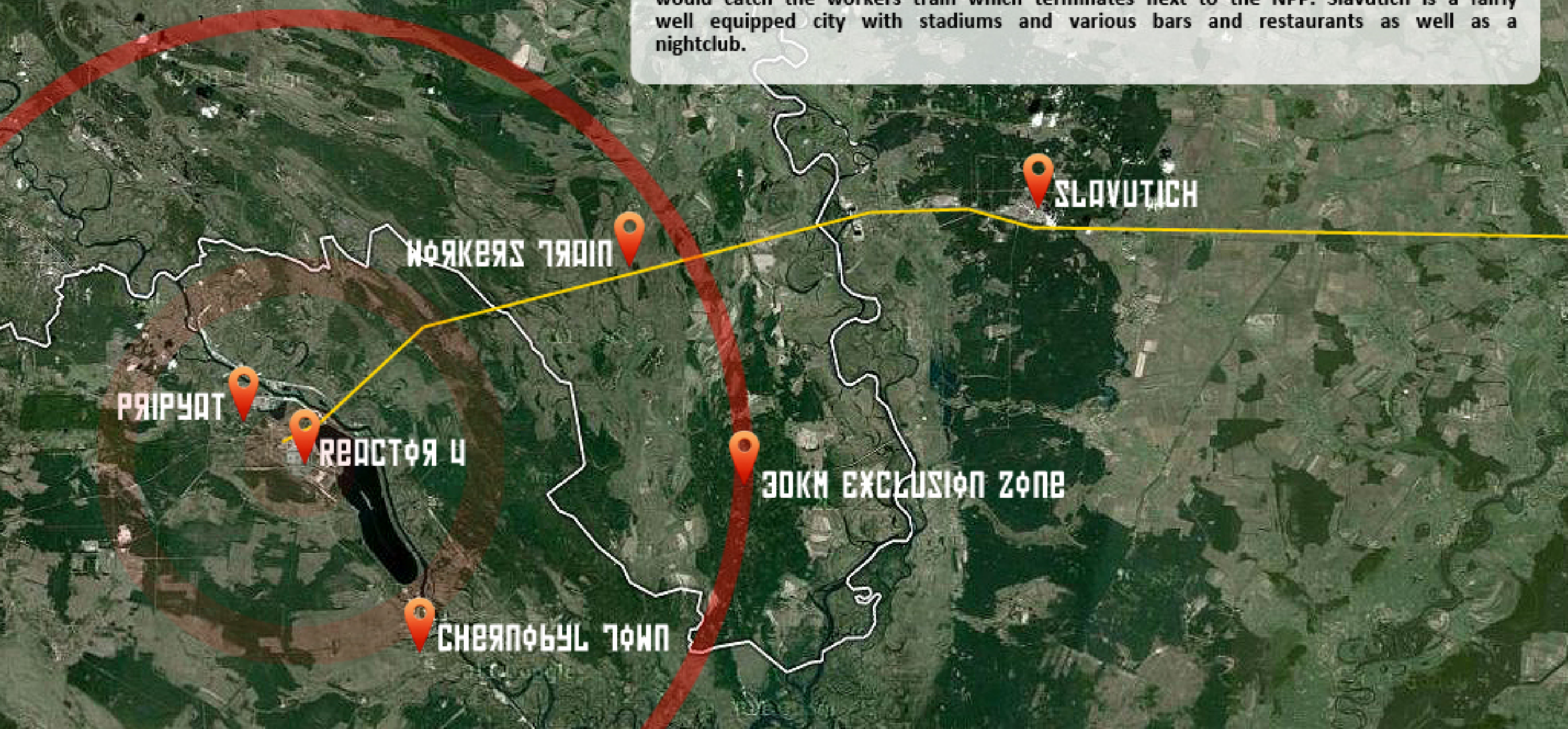


Slavutich is situated 40 kilometers from Chernihiv, 45 kilometers from the city of Pripjat, 50km from Chernobyl (both in Ivankiv Raion) and 200 kilometers from Kiev. While geographically Slavutich is located in Chernihiv Raion (part of Chernihiv Oblast), administratively it belongs to Kiev Oblast.

The city was built in 1986, shortly after the Chernobyl nuclear disaster to house personnel of the Chernobyl nuclear power plant and their families who were evacuated from the abandoned city of Pripjat.

Many inhabitants still work at the site of the former plant for monitoring, maintenance or scientific purposes. They commute to the zone on a regular basis, and a railroad line (twice crossing the international border with Belarus) runs directly from the city to the site of the plant.

During our trip Slavutich is where we stayed in the evening, at 7am in the mornings we would catch the workers train which terminates next to the NPP. Slavutich is a fairly well equipped city with stadiums and various bars and restaurants as well as a nightclub.







## ДОЯКРЯІЧОТ

### СНАРТЕЯ 2 -СЕНТРАЛ ПЯІРЧОТ

Pripyat was founded in 1970 to house workers for the Chernobyl Nuclear Power Plant (CNPP).

It was officially proclaimed a city in 1979 but was abandoned in 1986 following the Chernobyl disaster. Visits to the abandoned city of Pripyat are becoming quite popular now that radiation levels are relatively low although quite difficult to arrange.

In this chapter you can see some of the well known sights in the center of Pripyat from various video games such as Call Of Duty: Modern Warfare and the Stalker series.





Inside the palace of culture which included a theater, concert hall, dance studios, swimming pool, study halls, boxing/wrestling rings and a full-sized gymnasium.





A small swimming pool inside the Pripyat cultural palace. Picture by Mark Brandon





The main theater behind the palace of culture - "Energetik" pictured with other explorers from our 2011 (28dl) trip.





An old sports hall inside the Pripyat "Azure" Swimming pool complex.





The diving board of the Pripyat "Azure" swimming pool another iconic scene from within the exclusion zone.





Pripyat's "Azure" Swimming pool has been featured in various video games involving the area such as COD4: Modern Warfare & the Stalker series.





The floor in the library scattered with books from the old soviet city.





A mural of a soviet cosmonaut to show the superiority of the soviet people is located in the post office. Picture by Andy Simmers





This location has been known as the "Propaganda room" stored here are the artworks of all the old Soviet leaders.





Entrance to rooms inside a block of flats. Picture by Andrew Leatherbarrow





The "Polesk" hotel in Pripyat has been featured in many video games on the area such as Stalker and COD: Modern warfare.





The amusement park in central Pripyat was due to open a few days after the Chernobyl accident, the rides and attractions were never used.





Dodgem's which were never used lay still in the Pripjat amusement park. Picture by Jason Green





Around Pripyat there are various artworks on the walls, the ones above are by French and German artist's.



An aerial photograph of Pripyat city, showing a dense residential area with many multi-story apartment buildings. The city is surrounded by a thick forest with trees in autumn colors. In the foreground, a large, semi-transparent text box contains the title and introductory text. The sky is overcast and grey.

# ОДЯКРЯІРЧОТ

## СНАРТЕЯ 3 - ОУТЕРЯ РЯІРЧОТ

Many blogs and publications have covered the centre of Pripyat city. The day trips which are organized in Kiev only have enough time to see the central areas.

After my 2 visits to the Zone spanning 6 days i've managed to see outside of the centre of Pripyat. This chapter covers images and locations which people may not have seen before from this area. Pripyat itself is surrounded by a perimeter fence, it's an illegal act to venture outside this fence, and if caught without a NPP pass the consequences can be severe (guards carry guns)

Pripyat is vast around 3-4 miles square so there is lots more too see, i hope to be planning further trips to the zone soon to capture more of this amazing place.





Pripyat is surrounded by a perimeter fence, luckily not a very good one..





Pripyat's main bus station is located at the south east of the city outside the perimeter.





The old bus station still has the route guide on the wall, buses would have serviced most of the area.





Jumping the fence means you get to see hidden gems like this riverboat which is still sat on the Pripjat river.





A piano and stool sit inside the Music-hall / Cinema in east Pripyat, a few keys still giving out their sound in the silent surroundings.





Worn keys on a piano inside the music hall. Picture by Paul Morris





A military checkpoint outside Pripyat. Picture by Andrew Leatherbarrow



П 90307-225  
М208(04)-76 4-76  
Видання «Музична Україна», 1976 р.



МИ — РАДЯНСКИЙ НАРОД  
Слова М. Ткача  
Музыка О. Билаша  
• Moderato

МЫ — СОВЕТСКИЙ НАРОД  
Слова М. Ткача  
Музыка А. Билаша

A piece of music on the floor in the music hall





A gas mask hangs in the woods and overgrowth which has engulfed Pripjat over the 25 years of abandonment.





One of the many high rise apartments in Pripjat which have been left to nature.





The inhabitants of Pripyat left in a hurry during the evacuation, Pripyat has been subject to a lot of looting since 1986 but some items remain. Picture by Jason Green





Streets and roads throughout Pripyat are empty and overgrown. Picture by Andrew Leatherbarrow





A surviving stained glass Muriel inside the waterside Pripyat Cafe.





Fujiyama is one of the highest buildings in Prip'yat and is located at the north western corner of the city and is comprised of 17 floors including the roof.





From the top of Fujiyama you can see the secret russian radio antenna in the distance known as the "Moscow eye" or "Duga-3"





On the very top floor of Fujiyama we find these remains of a dog. Picture by Andrew Leatherbarrow





In the Pripjat river boats sit abandoned in the water.



# ДЯКРЯІРЧОТ

## CHAPTER 4 - HOSPITAL

The hospital complex is one of the largest cluster of buildings in Pripyat and is located to the south west of the city.

The hospital is split into the following wards:

- Neurological Department
- Maternity Department
- Infectious Diseases Department
- General & Burns Department

Most of the injured were brought to this hospital during the disaster, a lot of the firefighters did not leave the hospital after succumbing to the effects of high radiation poisoning.







Medical records are scattered around the hospital, there are hundreds of them in most rooms.





The hospital waiting room sits in ruins, many of the firefighters were brought here on the night of the accident, some didn't leave.







Пункт переливания крови

**Удостоверение донора**


Фамилия, и. о. Медведева

Группа крови B(III)

Дом. адрес ул. Бабушкинская 2/19

Подпись донора Медведева

Место печати Зав. С. И.







Samples from circa 1984 found inside the hospital. Picture by Jason Green





A chair designed for pregnant women sits outside the maternity wing of the Pripyat Hospital. Picture by Jonathan Andrew










Bedpan wash stations inside the general ward.





A gurney sits in a corridor in the Neurological ward. Picture by Jason Green





ЗАВ. ОТДЕЛЕНИЕМ



A supervisors office in the neurological ward.





A chair with foot rests sits unused for 25 years in the maternity ward.





Dairy bottles scattered on the floor of the hospital kitchens.





One of the main corridors inside the hospital.



# ДЯКРЯІРЧДТ

## CHAPTER 5 - SCHOOLS

Education was a high priority in Pripjat, in total the soviet city had 21 schools including 15 primary (or kindergarten) schools 5 secondary (Middle) schools and 1 technical collage.

There were roughly 5000 children in Pripjat schools in 1986.

Some of the most popular schools are included in this chapter including:

- Golden Key Kindergarten
- Kindergarten "Druzba"
- Kindergarten "Lazurny"

For most people visiting Pripjat the schools seem to be the most poignant of the visit.







Gas mask and a children's shoe inside the Golden Key Kindergarten school in central Pripjat. Picture by Andy Simmers





Inside the technical collage chairs still sit in one off the lecture rooms. Picture by Andy Simmers





A washroom inside "Druzha" kindergarten, each child would have had their own washing bowl.





Inside Golden Key kindergarten dolls lay on the empty beds.





A child's shoe in the cloakroom of Golden key.





Inside one of the abandoned classrooms. Picture by Jason Green





A school table inside the technical collage, the floor is covered with gas masks.





Inside "Druzba" kindergarten some of the children's lockers are still full with clothes.





Dolls arranged in the “Goldenkey” kindergarten by previous visitors.





One of the kindergartens inside central Pripyat, the ground is littered with gas-masks and is one of the most well known scenes in Pripyat.





# ДОЯКРІРЧОТ

## CHAPTER 6 - GRAVEYARDS

On the 2nd day of our visit in 2011 we were invited to visit the Burakivka vehicle graveyard and disposal facility around 10 miles from Pripjat city.

Previously visitors have not been allowed to this facility due to the high amount of contamination from the surrounding vehicles waiting for disposal. The average count here was 3.5-5uSv p/hr.

Tanks, trucks & helicopters are at Burakivka waiting to be dismantled and then buried in clay lined trenches where the radiation in the metal can decay safely. Many of the vehicles used in the evacuation including a few shells of the Mi-24 Hind helicopter can be found here.





A old army APC sits in the Chernobyl town monument to remember the disaster.





A heavy transport vehicle waits to be disposed of, a stripped hind helicopter shell sits behind it.





Scaffolding used in the construction and dismantling of reactor 4 lay ready for disposal. Picture by Mark Brandon





Remains of a heavy transporter in the graveyard.





An old firetruck waiting for disposal at Burakivka, many vehicles have been stripped for parts, the shells will be buried. Picture by Jason Green.





A old crane unit stands behind the old Pripyat fire station.





Trucks are numbered awaiting disposal. Picture by Andrew Leatherbarrow





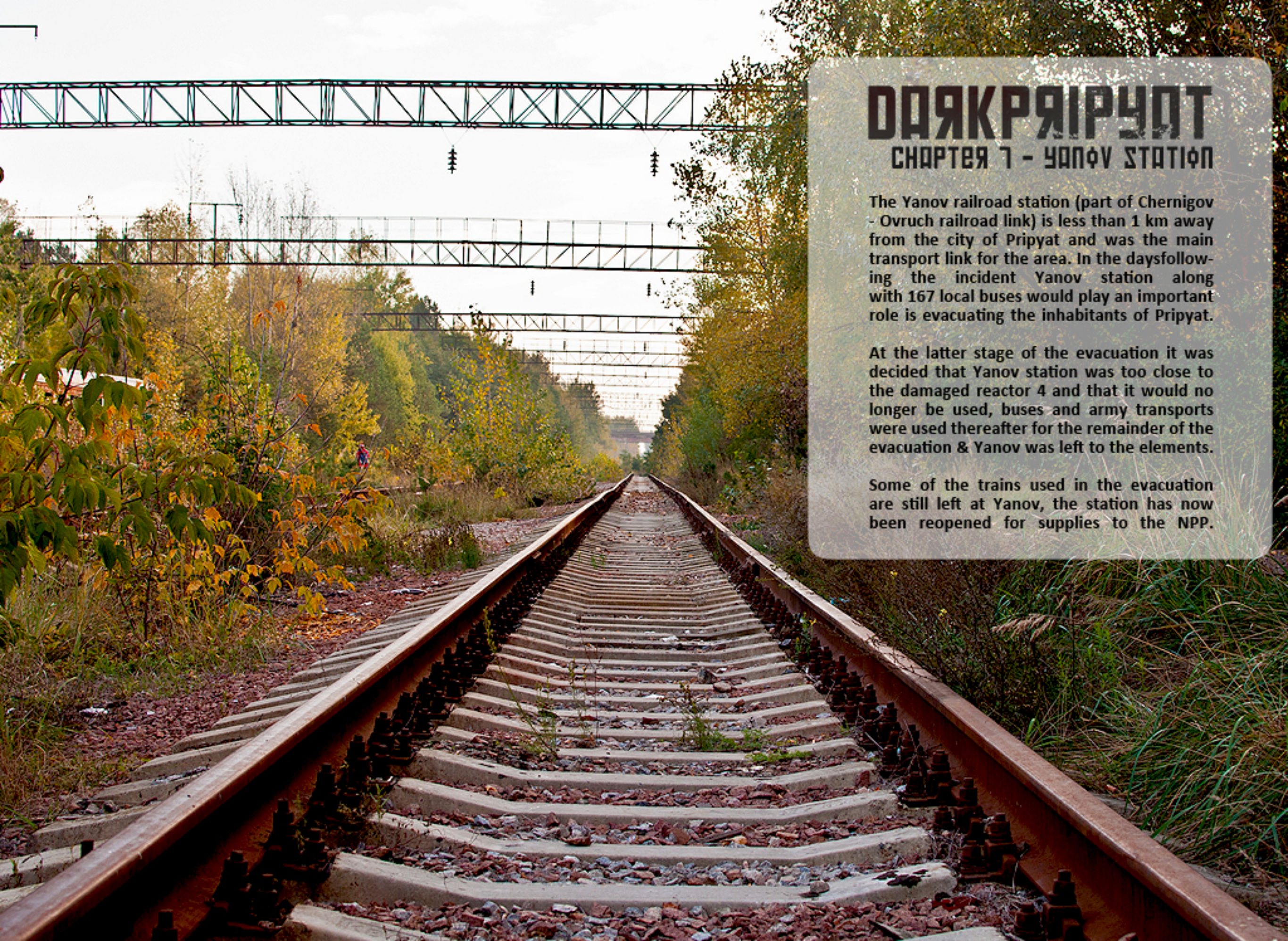
An armored crane used by the army in the evacuation and construction of the reactor 4 sarcophagus.





Various vehicles are arranged at Burakivka, from personnel carriers to cranes and helicopters.





# ДЯКРЯІРЧОТ

## CHAPTER 7 - ЯНОВ STATION

The Yanov railroad station (part of Chernigov - Ovruch railroad link) is less than 1 km away from the city of Pripjat and was the main transport link for the area. In the days following the incident Yanov station along with 167 local buses would play an important role in evacuating the inhabitants of Pripjat.

At the latter stage of the evacuation it was decided that Yanov station was too close to the damaged reactor 4 and that it would no longer be used, buses and army transports were used thereafter for the remainder of the evacuation & Yanov was left to the elements.

Some of the trains used in the evacuation are still left at Yanov, the station has now been reopened for supplies to the NPP.





One of the working locomotives which still services the zone, bringing engineering supplies to the area.



КДЭ  
1719

Remains of one of the locomotives, with the engine number partly attached.





Various engine locomotives lay dormant in Yanov stations, their engines have been removed for scrap, the shells too radioactive to reclaim.





One of the old carriages MECI-38 in it's now permanent home at Yanov station.



СССР

ПРОИЗВОДСТВЕННОЕ  
ОБЪЕДИНЕНИЕ



БРЯНСКИЙ



МАШИНОСТРОИТЕЛЬНЫЙ ЗАВОД

№ ТЭМ2Ч-8515

1986 г

This engine was brand new in 1986, the plaque shows where the engine was made and its official number.





Some of the cargo carriages still have their contents intact in Yanov. Picture by Andrew Leatherbarrow





Rusted engine locomotives lay end to end since the evacuation.



# ДАРЯПРІУАТ

Thank you for downloading and viewing Dark Pripjat, I hope you have enjoyed our photography from the city of Pripjat and the Chernobyl exclusion zone.

If you would like to find out more on the area or perhaps just to see some more pictures please visit [www.urbanpixels.co.uk](http://www.urbanpixels.co.uk)

I would like to give thanks to the following people and groups which made these trips and Dark Pripjat happen:

Strefazero (Organizers)  
Sergei (Zone Representative)  
28dayslater.co.uk (UK Urban Exploration)

Simon Proffitt (Sounds)  
Mark Brandon (28dl)  
Andy Simmers (28dl)  
Jason Green (28dl)  
Andrew Leatherbarrow (28dl)  
Jonathan Andrew (28dl)  
Paul Morris

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Ric Wright (Urbanpixels)  
Fraser Blakemore (FB Photography)







Thanks to the 28dl participants in the 2011 trip which made it as enjoyable as ever, look forward to seeing you there in 2012.