



České vysoké učení technické v Praze

Fakulta stavební

Katedra hydromeliorací a krajinného inženýrství



VODNÍ HOSPODÁŘSTVÍ KRAJINY

PŘÍKLADY REVITALIZACÍ DROBNÝCH VODNÍCH TOKŮ





TOK : MALÁ JEŘICE – JIZERSKÉ HORY

1. Revitalization of the Malá Jeřice stream

| | | | |
|------------------|--|--------------------|---|
| Location: | Oldřichov v Hájích, Liberec Region | Designer: | HYDROREAL,s.r.o. Jičín, Ing. Tomáš Pulkrábek |
| Investor: | AWMA – Section of Elbe River Basin Hradec Králové | Contractor: | POPR, s.r.o. Hradec Králové |
| Building: | 2010 | Costs: | 2 500 000 CZK (about 100 000 EUR) |
| Funding: | Revitalization programme of river systems (100% subsidy) | | |

| | |
|--------------------------------|---|
| Length of new channels: | Original 630 m has been extended to 688 m. |
| Notes: | A hundred year flood took place in this locality in August 2010. The original stream channel was broken, stabilization sills were destroyed and small pools were filled by sediments. |

| | |
|------------------------|--|
| Original state: | The stream channel was straightening and paved in 1976. The height of stabilization sills was 0.5 m. |
|------------------------|--|

| | |
|------------------------|---|
| Revitalization: | The revitalization has involved a new and meandering stream channel and 8 small pools (side and separate pools). The original route was filled and the pipe culvert was replaced by a ford. |
|------------------------|---|





TOK : MALA JEŘICE – JIZERSKÉ HORY





TOK : MALA JEŘICE – JIZERSKÉ HORY





TOK : MALA JEŘICE – JIZERSKÉ HORY





TOK : MALA JEŘICE – JIZERSKÉ HORY





TOK : MALA JEŘICE – JIZERSKÉ HORY





TOK : ČERNÝ POTOK - KUTNOHORSKO

1. Revitalization of the Černý stream channel and its left-hand tributary

| | | | |
|------------------|---|--------------------|--|
| Location: | Vesec, Jičín Region | Designer: | |
| Investor: | ZVHS – Dept. of Elbe Catchment | Contractor: | |
| Building: | 2009 | Costs: | |
| Funding: | Revitalization programme of river systems (Ministry of Environment), co-financed by Ministry of Agriculture | | |

| | |
|--------------------------------|---|
| Length of new channels: | 1 570 m of the Černý stream and 1 000 m of its tributary |
| Notes: | The stream revitalization consists of the creation of a new natural stream - bed. Within the stream revitalization a few of flow filter pools have been created as well as new planting and a grass zone on a former field. |

| | |
|------------------------|---|
| Original state: | In the last century the stream channel of the Černý stream has been straightened. A channel cross-section was shaped as a deep trapezoid and the cross-section was stabilized by concrete prefabricates. The lined stream channel was free from shore vegetation. |
|------------------------|---|

| | |
|------------------------|---|
| Revitalization: | The revitalization has involved forming a new stream channel for the Černý. A new stream channel was designed with a wide composite cross-section. The cunette has a dish – shaped profile whereas the width of the bank varies from 1.5 m to 2.5 m. The width of the bank ledges varies from 10 m to 20 m. The cunette has the capacity for about Q30d, while the bank ledges have the capacity for about Q10. Within the stream revitalization a few flow filter pools have been created, with a total area of 1 900 m ² . The channel lining was made selectively. Boulder bed drops have been built to ensure stability of the stream bed. The sections between these boulder bed drops have not been lined. |
|------------------------|---|





TOK : ČERNÝ POTOK - KUTNOHORSKO





TOK : ČERNÝ POTOK - KUTNOHORSKO





TOK : ČERNÝ POTOK - KUTNOHORSKO





TOK : DOMAŠÍN - VLAŠIM

1. Revitalization of the stream channel and sediment removal from a small water reservoir in Domašín

| | | | |
|------------------|------------------------|--------------------|----------|
| Location: | Domašín, Vlašim Region | Designer: | VRV a.s. |
| Investor: | Town of Vlašim | Contractor: | |
| Building: | 2009 – 2011 | Costs: | |
| Funding: | | | |

| | |
|--------------------------------|---|
| Length of new channels: | 740 m |
| Notes: | The revitalization includes forming a new semi-natural stream channel with 5 pools, and reconstructing a small water reservoir. |

| | |
|------------------------|--|
| Original state: | The former state of the stream channel was caused by drainage management on agricultural land in the surroundings of the stream. This management had involved straightening the stream channel, which was a recipient for water drained from the surrounding fields. The small water reservoir in Domašín was loaded by fine sediment particles as a result of intensive agriculture. This affected its accumulation function. The safety spillway was out of function, and this prevented the safe passage of flood discharges. |
|------------------------|--|

| | |
|------------------------|--|
| Revitalization: | <p>The revitalization has involved forming a new stream channel for the Domašínský stream and reconstructing the small water reservoir in Domašín. A new stream channel was designed with a composite cross-section. The cunette has the capacity for Q_{30d}, while the bank ledges have the capacity for Q_s. The width of the bank ledges varies from 10 m to 45 m. The radiuses of the arches vary from 70 m. to 380 m. Pools have been built at both ends of the revitalization, and also along the stream channel, with a total area of 1 801 m².</p> <p>The reconstruction of the small water reservoir in Domašín includes removing the sediment and repairing the safety spillway. When designing the sediment removal, emphasis was laid on keeping the littoral area sufficiently large.</p> |
|------------------------|--|





TOK : DOMAŠÍN - VLAŠIM

