

Our Approach to the Implementation of Safety-Distance Requirements in Rheinfelden, Baden, Germany

Rheinfelden
Baden



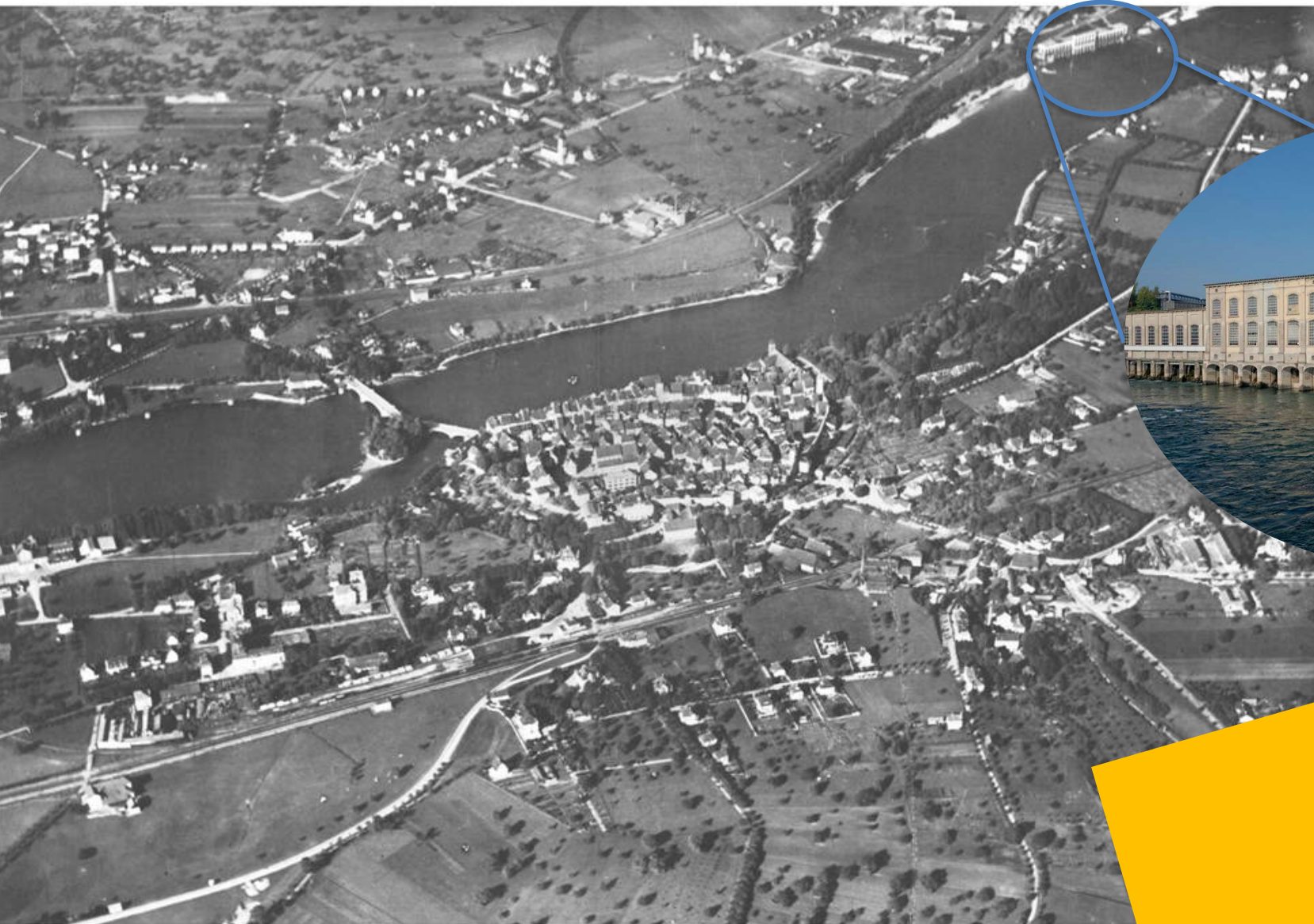
***Decision-making processes and
the challenges of cross-boundary
land-use planning***

***Klaus Eberhardt
Mayor of Rheinfelden (Baden)***



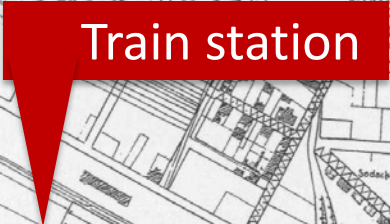
Baden-Württemberg
REGIERUNGSPRÄSIDIUM FREIBURG





Historical
development





Overview of Rheinfelden (Baden)





Excellent business location



Sustainable energy source



Attractive shopping areas



Quiet residential streets

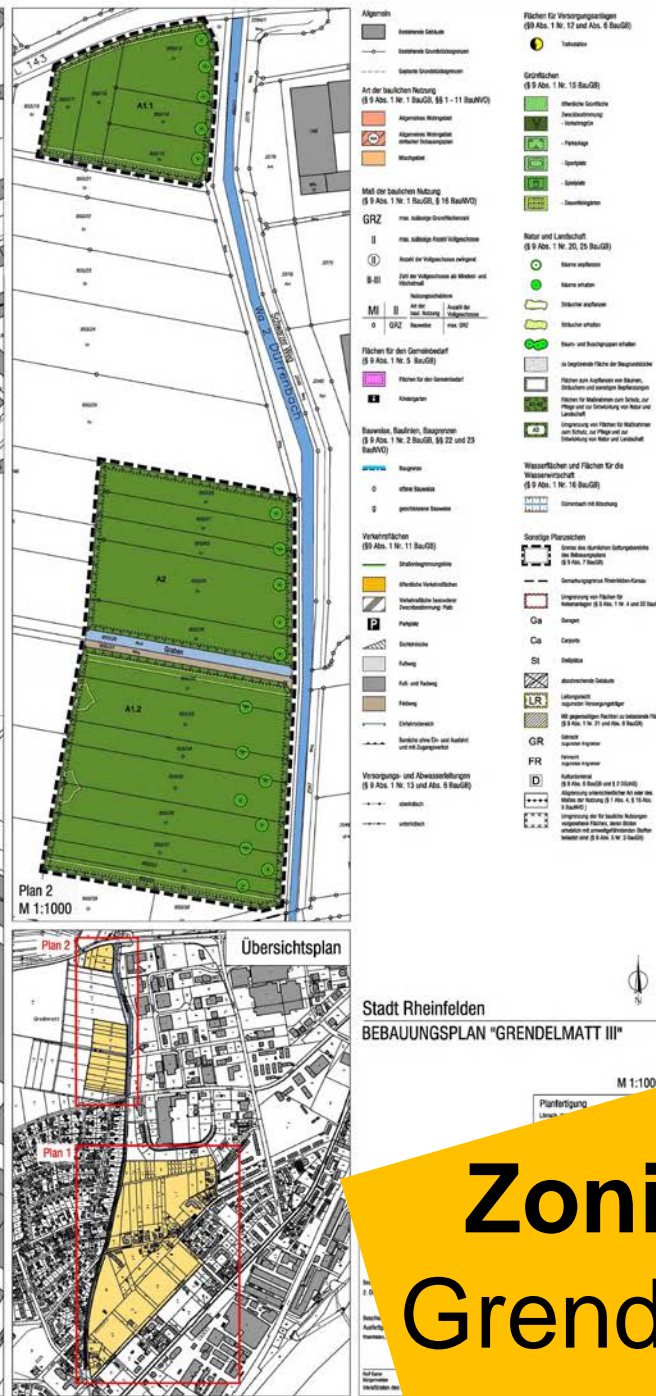
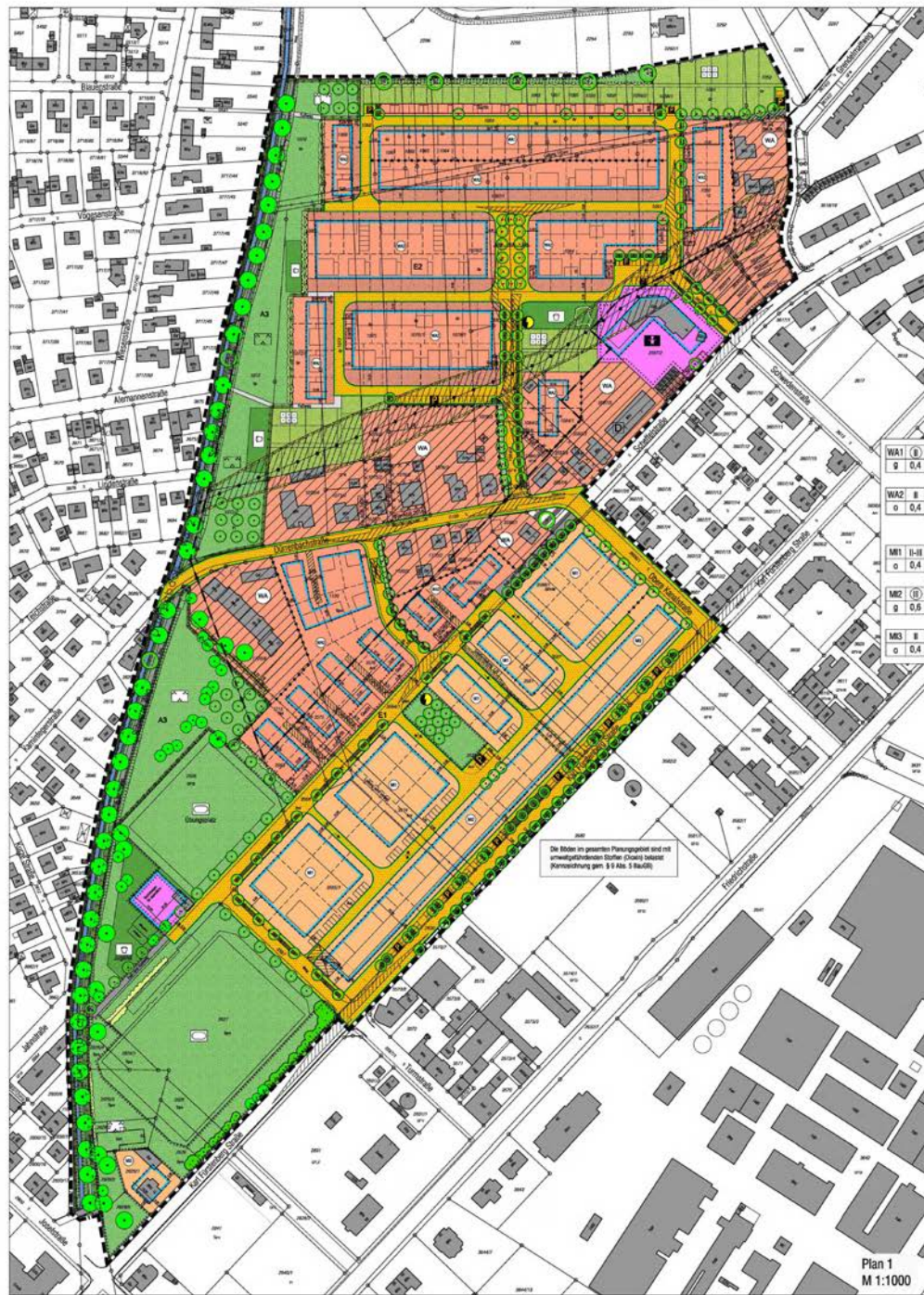


Scenic surroundings for
recreation and relaxation

Industry

Zoning plan Grendelmatt III





Zoning plan Grendelmatt III



The industrial site is:

- **an 'establishment' as defined by the German Hazardous Incident Ordinance,**
- **an industrial establishment under the Seveso Directive, and**
- **a 'hazardous activity' under the UNECE Convention on the Transboundary Effects of Industrial Accidents, which means "any activity in which one or more hazardous substances are present or may be present in quantities at or in excess of the threshold quantities listed in Annex I hereto, and which is capable of causing transboundary effects."**





Urban development in line with the Seveso III Directive
2 sites = 1 'establishment' as per Section 3, definition 5a
of the German Federal Immission Control Act

**Industrial sites
in Rheinfelden:
Evonik**





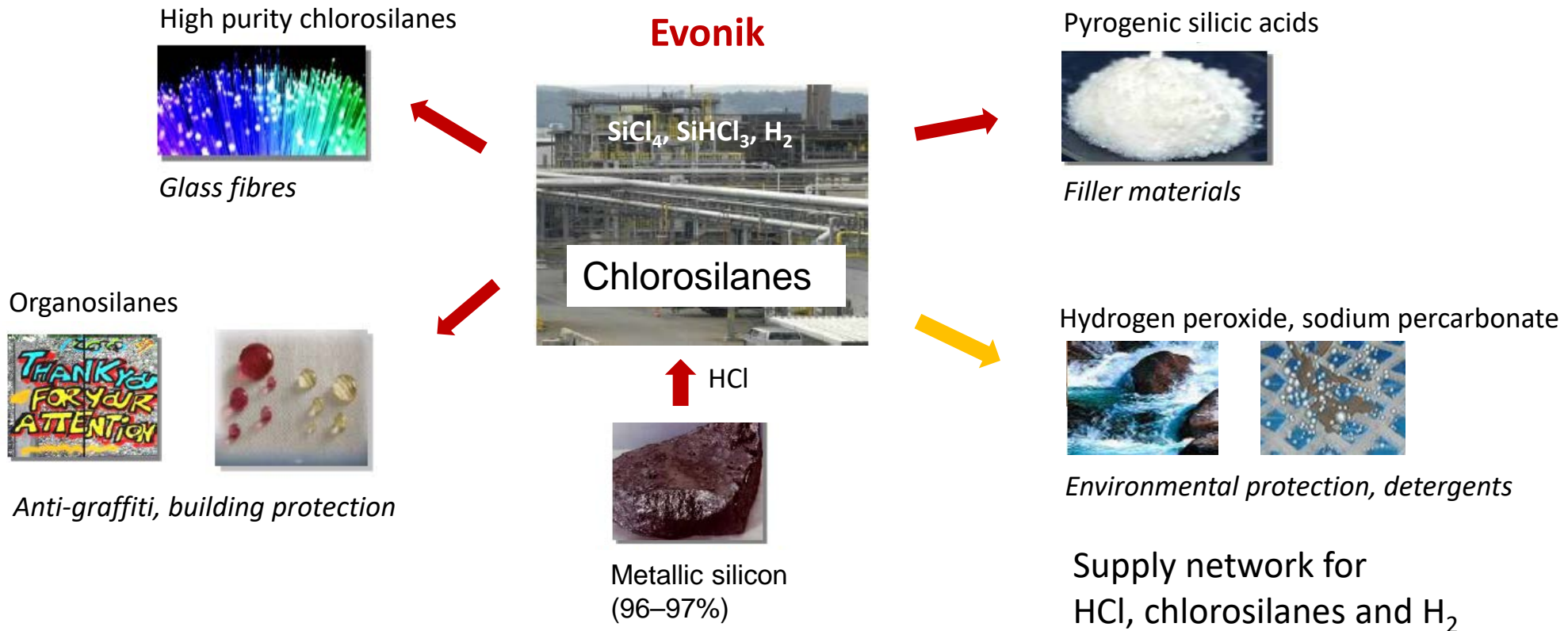
Rheinfelden
Baden

Urban development in line with the Seveso III Directive
1 additional 'establishment' within the Evonik north site

**Industrial sites
in Rheinfelden:
RheinPerChemie**



Baden-Württemberg
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RheinPerChemie

Elektrolytic and chemical manufacture
of ammonium and sodium persulphates
(Radical formers for polymerization processes,
oxidizing agents)

**Industrial sites
in Rheinfelden:
Manufacture of a
range of products**



	Classification under the Hazardous Incident Ordinance	Major potential hazards
Evonik	Threshold quantity as per Column 5 of Annex 1 of the Ordinance exceeded for a range of substances/substance categories, e.g. highly toxic, toxic, oxidizing, environmentally hazardous, highly flammable substances or those reacting violently with water*	Release of <ul style="list-style-type: none"> • Pressurized liquid ammonia • Hydrochloric acid gas from the hydrolysis of chlorosilanes
Rhein-PerChemie	Threshold quantity as per Column 5 of Annex 1 of the Ordinance exceeded for toxic and oxidizing substances (NH ₃ , persulphates)*	

The regional administrative authority in **Freiburg** is responsible for the approval and monitoring procedures for nearly all matters relating to environmental protection and occupational health and safety at the Rheinfelden industrial sites.

*Classification under the UNECE Industrial Accidents Convention – Annex I

**Industrial sites
in Rheinfelden:
hazardous substances
and potential risks**



Extensive incident response facilities as per Section 3 (3) of the Hazardous Incident Ordinance



Rheinfelden
Baden



Incident prevention measures, in some cases even more stringent than the latest safety standards (> Licensing procedure)



Implementation of the general operator obligations, additional obligations with safety report, contingency planning, information brochure, etc.




**Industrial sites
in Rheinfelden:**

**Existing built
environment and
implementation
of the Hazardous
Incident Ordinance**



Baden-Württemberg
REGIERUNGSPRÄSIDIUM FREIBURG

		'Safety distances'
1996 2000	Seveso II Directive Implementation of Section 12 in German law	'Appropriate safety distance'
2003/2004	Adelberg development plan: homes to be at a distance of 100 m from Evonik; bringing the town closer to the Rhine; Freiburg specifies appropriate safety distance. 	750 m (NH ₃ ; derived from disaster control scenario) 200 m (HCl from hydrolysis of chlorosilanes; derived from disaster control scenario)
Since 2004	Heightened awareness of the issues in the town; in addition to land-use planning procedures, building applications pursuant to Section 34 of the Federal Building Code are always submitted; Freiburg specifies the consultation radius.	

**Application of Section 50 of the
Federal Immission Control Act**

**Progress of
Implementation in
Rheinfelden**

		'Safety distances'
2005	<p>Adelberg development plan: submission of a meteorological appraisal and other factors prompt a re-evaluation of the appropriate safety distance by Freiburg.</p> <p>'Safety distance list' (SFK-TAA-GS1) drafted by federal ministries</p>	<p>Appropriate safety distance: 450 m (NH₃; disaster control scenario/ average dispersion situation)</p>
2006	<p>Adelberg development plan: the town annuls plans within the 450 m radius.</p> <p>Citizen's information event on Section 50 issues presented jointly by the town and the Freiburg regional administration</p>	
2007	<p>Rheinfelden hydropower project: the areas around the industrial sites to be upgraded as social and cultural amenities Freiburg specifies the minimum safety distance; after some discussion the project is rejected.</p>	<p>Appropriate safety distance: 450 m (ammonia)</p>
2012	<p>Plethora of position statements by Freiburg on building applications/development plans within the consultation radius (9 in the first half-year); backlog in decision-making for many individual cases</p> <p>>>> Joint discussions between town, Freiburg and Evonik Freiburg's proposal: a location assessment</p>	<p>Consultation: 600–800 m Appropriate safety distance: 450 m (NH₃)</p>

**Application of Section 50 of the
Federal Immission Control Act**

**Progress of
Implementation in
Rheinfelden**



		'Safety distances'
2010– 2012	<p>Grendelmatt III development plan</p> <p>26.02.2010: Effective date of the development plan</p> <p>01.07.2010: Evonik's application for judicial review by the administrative court of Baden-Württemberg</p> <p>11.12.2012: Rheinfelden (Baden) town council passes a resolution to amend the Grendelmatt III development plan.</p>	
2013	<p>Location assessment to determine appropriate safety distances as recommended by the KAS-18 guidance document: mandated by the town and Evonik, with technical support from Freiburg.</p> <p><u>Objective:</u> Systematic examination of the industrial sites to identify potential hazards as per Section 50 of the Federal Immission Control Act, with evaluation of scenarios under status quo conditions as a basis for subsequent planning considerations</p>	
2012– 2014	Amendment of the land-use plan	<p>Appropriate safety distance:</p> <p>450 m (ammonia)</p>
2015	<p>Submission of the assessment by TÜV Nord:</p> <p>The convention for substances reacting with water in the KAS-32 guidance document published in 2015 (50% hydrolysis) means that this potential hazard dictates the required safety distance (previously only about 200 m).</p>	<p>Appropriate safety distance:</p> <p>400–450 m (NH₃), 600–850 m (substances reacting with water)</p>



		'Safety distances'
2015	<p>Submission of the location assessment by TÜV Nord:</p> <p>In view of the site conditions and the factors precluding hazardous incidents and limiting their impact, the scenario tends to err on the safe side.</p> <p>Commentary on graded limitations of use for areas near to the industrial sites and further away from them (zoning of the protection requirements within the specified safety distance)</p>	<p>Appropriate safety distance:</p> <p>400–450 m (NH₃), 600–850 m (substances reacting with water)</p>
2015/2016	Creating and approving the Rheinfelden urban development plan and the guidelines for building approval procedures	



**Application of Section 50 of the
Federal Immission Control Act**

**Progress of
Implementation
in Rheinfelden**



Producing an urban development plan in line with the Seveso III Directive

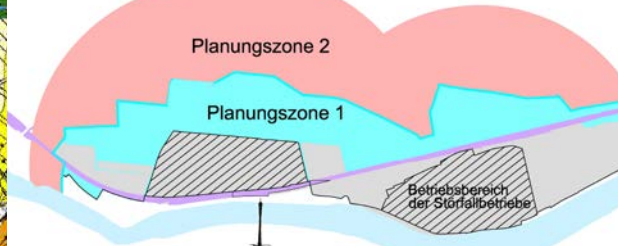


1. In the event of a 'beyond-design accident', the risk in the vicinity of installations where a hazardous incident could occur must not be increased by land-use planning (and its implementation).
2. An appropriate safety distance must remain between installations where a hazardous incident could occur and new facilities that qualify for protection.

Basis:
Article 13
Seveso III Directive
Section 50
Federal Immission
Control Act

Assigned degree of protection	Planned use
None	<p>Projects not falling under the Seveso III Directive</p> <ul style="list-style-type: none"> • Commercial premises not open to the public • Office buildings not open to the public • New residential buildings that do not, however, qualify as a new residential area (assumed to be up to 6 residential units), in built-up areas, e.g. building on a vacant plot or in a second row • Alterations / extensions to existing residential buildings (e.g. dormer windows, loft conversions) • Parking facilities • Routes of minor significance, such as the planned new footbridge over the Rhine
Low	<ul style="list-style-type: none"> • Buildings used by the public business and administration offices buildings and facilities open to the public • Guest accommodation (hotels) • Residential areas
Medium	<ul style="list-style-type: none"> • Schools and children's nurseries • Care homes and day centres for seniors • Sports grounds • (Open-air events)
High	<p>'Vulnerable' planned facilities with a very large catchment area (beyond the town itself) and dimensions, such as (new) hospitals and similar large institutions and recreation areas</p>





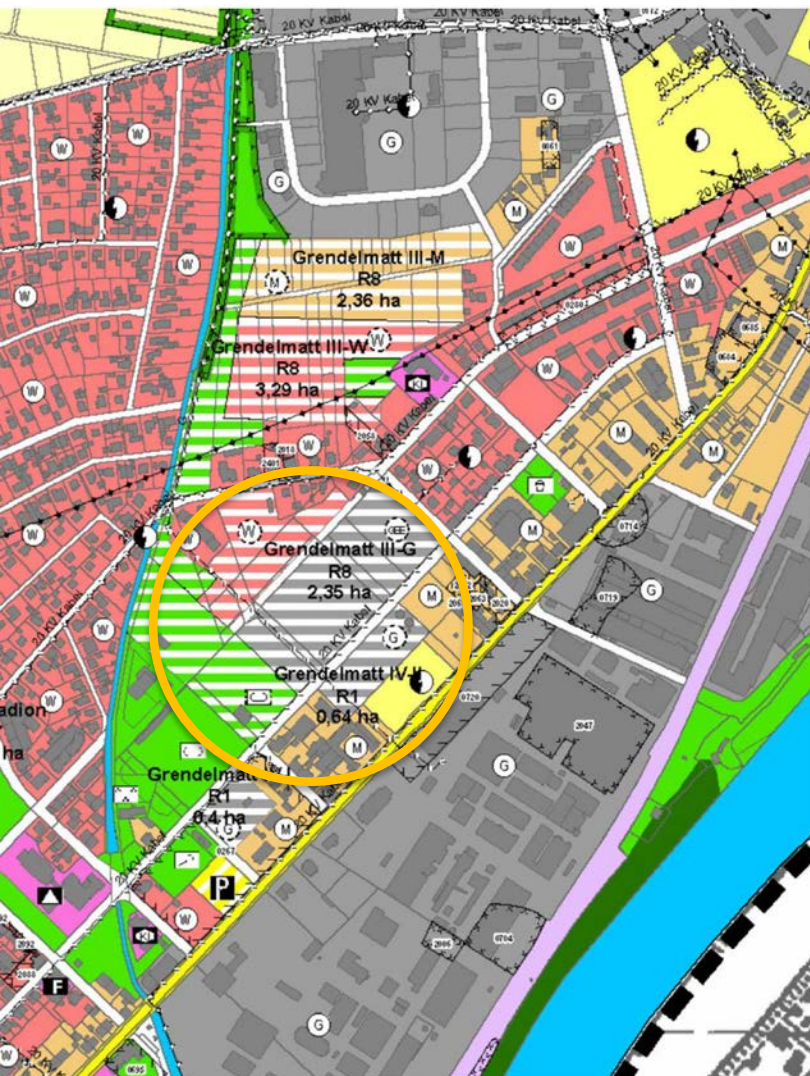
Häufigke

Rheinfelden
Baden

Urban development plan

In line with the
Seveso III Directive

Urban development plan in line with the Seveso III Directive



Land-use plan



Plan in line with the
Seveso III Directive

**Changes
in the planning**

Urban development plan in line with the Seveso III Directive

	Planning zone 1	Planning zone 2
Residential areas	Residential areas with 20 accommodation units (as lower limit) generally possible	Residential areas with 40 accommodation units (as lower limit) generally possible
Schools and children's nurseries, care facilities for senior citizens	No new build No extension of existing facilities that would increase the number of people particularly in need of protection	No new build Extension of existing facilities generally possible

**Evaluation
of
individual
projects**

Urban development plan in line with the Seveso III Directive

	Planning zone 1	Planning zone 2
Buildings used by the public / Buildings and facilities open to the public	<p>The establishment of retail shops, service businesses, offices and restaurants—and the extension of existing ones—in the town centre shopping area is generally possible provided that the character of that area is retained.</p> <p>In the case of retail outlets with large floor areas, places of public assembly or other facilities where a large number of people may congregate: examination of the <u>special</u> individual case is essential.</p>	
		<p>On the Schildgasse commercial estate: location of retail outlets with large floor areas on a scale as per the land-use plan</p>

Evaluation
of
individual
projects

Urban development plan in line with the Seveso III Directive

	Planning zone 1	Planning zone 2
Guest accommodation	New guest accommodation with up to 10 beds generally possible	New hotels with up to 100 beds generally possible Extension of an existing hotel to more than 100 beds: examination of this <u>special individual case</u> essential

**Evaluation
of
individual
projects**

- New residential buildings that do not, however, qualify as a new residential area (up to 6 residential units), in built-up areas, e.g. building on a vacant plot
- Alterations / extensions to existing residential buildings (e.g. dormer windows, loft conversions)
- Commercial premises not open to the public
- Office buildings not open to the public
- Parking facilities
- Routes of minor significance, such as the planned new footbridge over the Rhine

Individual
projects not
falling under the
**Seveso III
Directive**



Proposed building project

Does the project site lie within the
'appropriate safety distance'?

No

Yes

Is it a site worthy of protection
according to the Seveso III Directive?

No

Yes

Examination of individual case

Does the project site lie within a land-use plan that
already takes the hazardous incident issue into account?
The project conforms with the land-use plan?

Yes

No

Further examination
of the hazardous
incident issue not
necessary,
i.e. approval
taking hazardous
incident aspects into
consideration
possible .

Reconstructable appraisal process by the building control authorities

Does the project result in a worsening of the status quo?

- Check against Table 3
- Indiv. assessment if needed
- Socioeconomic aspects
- Organizational measures
- Technical measures

Result

Possible to comply with due
consideration for
neighbours, if necessary
with restrictions?

Yes

**Negative
appraisal:**
Rejection

No

Positive appraisal:
approval taking
hazardous incident
aspects into
consideration possible

Flowchart for building approvals



Urban development plan in line with the Seveso III Directive

Urban development plan in line with the Seveso III Directive

June 2015 – April 2016

Discussions, workshops, tie-in with Freiburg and Evonik

May 2016

Introduction, urban dev. plan—drafting in the committees

June 2016

Citizen's information event

July 2016

Involvement of the public and the authorities

September 2016

Review of representations
Vote

November 2016

Resolution as informal plan as per Section 1 (6) No. 11 of the Federal Building Code

December 2016

Internal announcement

Evaluation: To date no negative events. Two major housing proposals were rejected at an early stage.





**That's all for
now, folks!**

