

ICUS

# Kato Takaaki Lab. (ICUS)

## [Establishing Social Safety System]

International Research Center for Urban Safety

Safety Social System

Department of Urban Engineering

<http://kato-sss.iis.u-tokyo.ac.jp/>

The local community can exist because the people live there. Community is part of life. Safety, amenity and affluence is necessary in our life. Safety is one of the most fundamental necessities of human beings. What has urbanization and modernization given us, and what have they removed from us? We need to ask ourselves whether we take safety for granted. Today's post-urbanization era is the right time to re-consider what the safety of a community means. The continuous re-thinking and improvement is the only way we can ensure safety in our communities. Urban Planning and Engineering for Social Safety System, we consider the aggregation of urban stocks as an community entity, and consider the safety of the social systems which would enable the safety of everyone.

### Evaluating vulnerability in urban areas

**Project A**

**Assessment**

**Estimation of Earthquake Damage**  
Discuss practical discussion on how to plan the expected damage estimation of the largest class established after 3.11. We aim to construct a new methodology and formulation method of the regional disaster prevention plan.

**Urban Disaster Prevention Plan**  
The conventional disaster-prevention city planning plan has been shaped based on earthquake fires. We aim to formulate and upgrade the conventional disaster prevention city plan in order to comprehensively control the natural disaster risks.

「Combustion destiny community」  
震災時に同じ色の建物群の中から出火すると、その建物群はすべて焼失する

Burn probability in each building

Natural disaster vulnerability assessment in urban areas

焼失率分布: 焼失率を使用

0.1	- 0.1	(221)
0.01	- 0.01	(2108)
0.005	- 0.005	(1582)
0.001	- 0.001	(6753)
0.0005	- 0.001	(5282)
0	- 0.0001	(11108)
0.00005	- 0.00005	(32283)

Burn probability spatial distribution in regional scale

Burn probability spatial distribution in national scale

A study on earthquake fire risk assessment method

### Safety Ensuring Plan

**Project**

**Implementation**

**Considering countermeasures with community**

**Safety Ensuring Plan**  
Construction of new concept of disaster prevention in commercial operation district. Newly formulated in July 2012 due to the revision of the Urban Regeneration Act. Safety plan combining the hard and soft aspects by public-private partnership.

**Learn from The Depopulated Areas**  
In an age of decline, the depopulated areas should be at the forefront of consideration.  
Learning from the "active" depopulated areas and re-thinking the future of Japanese society.

Flood simulation and planning support based on GIS

Flood Evacuation simulation and Evacuation plan support

Adaptation measures in cities for climate change / Methodology for disaster prevention machi-zukuri / Theory for disaster prevention urban planning

Drawing visions "Below-Sea-Level City 2058 Plan"

Flood-Response Urban Initiative

Planning workshop with residents

Working with citizens in "Below-sea-level City"

Environment

Tourism

Disaster Prevention

「Living with the sea」 Tourism disaster prevention machi-zukuri

### Preparing for disasters from the position of planner

**Project R**

**Recovery preparation**

**Recovery Image Training**  
"Preparation" to promote reconstruction smoothly as a fail-safe for measures against disasters. Recovery situation image training is one such method.

Supporting community led recovery in Tohoku

Describing scenarios for rehabilitate lives

Describing scenarios for reconstructing a city

Examining the consistency of both scenarios

Considering options for rehabilitating a life from the position of ordinary citizen

Considering a reconstruction plan from the position of planner

Control balance between citizen's rehabilitation and planner's vision

Establishing a training method for imaging recovery

A study on rehabilitation and reconstruction of cities

### Disaster Planning Support: Comprehensive Approach Based on Community

**Project T**

**Technically supporting to achieve safety society**

**Technology**

Building a model of community-based disaster prevention through community-based "endogenous" and "autonomous" activities. At the same time, develop and provide supporting tools and technology for the realization of such community-based disaster prevention activity.

Tool which based AR technology

津波浸水深さ

津波一時退避所情報

火災危険度

科学的客観的評価結果  
地域危険度  
ハザードマップ  
+  
地域情報

地域防災計画支援システム

Creating an environment for planning

A study on planning supporting system

行政組織

消防

社会教育

学校教育

機管理

防災

高齢者福祉

都市

地域の力が  
縦割りをなく

外部

① 触発  
刺激

② 自然災害リスクに関する正しい理解

③ 重層化

④ 関心を持つ層の拡大

× 支援要請

× 要求型

× 共助 + 「公助の支援」の関係確立

× コミュニティ活動

× コミュニティ活動

Turning into practical use and upgrading the techniques

Construction of regional disaster prevention support techniques