



Homes on the Hillside with Views to the Bay and Pacific Ocean Beyond

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Beyond 2020_nx

Three Episodes

Kanda Shun / Karin Schierhold, USA

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Prologue *By the sea or Inland?*

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For those who have spent all their lives next to the Sanriku coastline of eastern Tohoku, this question, posed in the days after the disastrous earthquake and tsunami of March 11, 2011 became an overarching dilemma. For indeed, these were people whose lives were saved but whose homes, workplaces, schools, shops, and community perished overnight.

In the ensuing years of recovery, many longtime residents relocated themselves to higher ground. Others moved to towns further inland where new employment could be found. The government sliced out flat land from mountainsides for new housing construction. The culture of a community and its people tied to a centuries-old place had sadly disappeared.

Episode I Living on the Hillside – A View of the Bay

Traditionally, people built their homes on higher ground surrounding the bay, aware of the region's history of recurring tsunami. Records dating from 869 AD tell us of numerous destructive tsunami inundating this Tohoku coastline. With each passing generation, as new landfill provided development opportunities, an increasing population occupied the waterfront lowlands eventually filling up what used to be Shizugawa Bay. Temples and shrines were the exception; they remained on their original higher ground. In recent decades, public schools were also built well above sea level. Such safer locations served as refuges and temporary sanctuaries for the many survivors immediately following the 2011 tragedy.

Fast forward to year 2020 and the unfolding of episodes since March 11, 2011.

A new residential neighborhood has sprouted at the higher elevations between the sea and mountains. The temple, school and homes are once again assured of safety from future tsunami. We feel very at home here. Enjoying the full view of the bay and the open sea beyond, there is a strong kinship with our native environment.

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Ria Coastline ©Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Houses are built on terraced land with views of the sea from every room. With open vistas and pleasant ocean breezes, living on the hillside brings such familiar delight. Longtime residents have always identified with the sharp profile of the ria landscape descending to the sea. The undulating coastline hides deep inlets and fishing villages nestled in their depth. It's a well-known legend that fishermen from adjacent villages have always rivaled each other, proud of their own special catch of scallop, octopus and harvested kelp, all showing off skills passed down through generations and honed over the years. Many residents strongly desired to continue this lifestyle with the sea and had stayed.

We live on the bay. Many of the younger generation have found employment on the waterfront and at the hatcheries in the bay. Others are engaged in startup business and online enterprises. Our older generation spends more time near home, within sight of the ocean, tending the vegetable garden, putting out the laundry to dry, and waiting for grandchildren to come home from kindergarten. We're a smaller population now, much diminished from before 2011.

It makes good sense that physically we are living closer to each other. And that home, workplace, and shops are in convenient proximity. Life in general moves at a slower pace and family life has been restored. Living on the hillside has brought our three-generations together.

The key to this reality of course is the Funicular. Moving up and down the slope with ease, connecting the mountainside and waterfront, homes and workplaces, this simple means of transportation has lifted the lifestyles of everyone. Young and old, children and visitors – everyone can ride it anytime. The Funicular has effectively eliminated our dependency on the automobile for short-distance commuting and vertical mobility. In this way, we have realized the benefits of living on the hillside.

In the coming generations, regional Japan will no doubt witness an increase of smaller communities. Many are located in the mountain valleys and seaside villages long settled for their characteristic inherent power of place. People have always identified them as good places to live. Recent trends seem to show that younger urban families may be moving to these regions to start a new life in the countryside. At Shizugawa Bay, a reawakened 21st century society may indeed be emerging.

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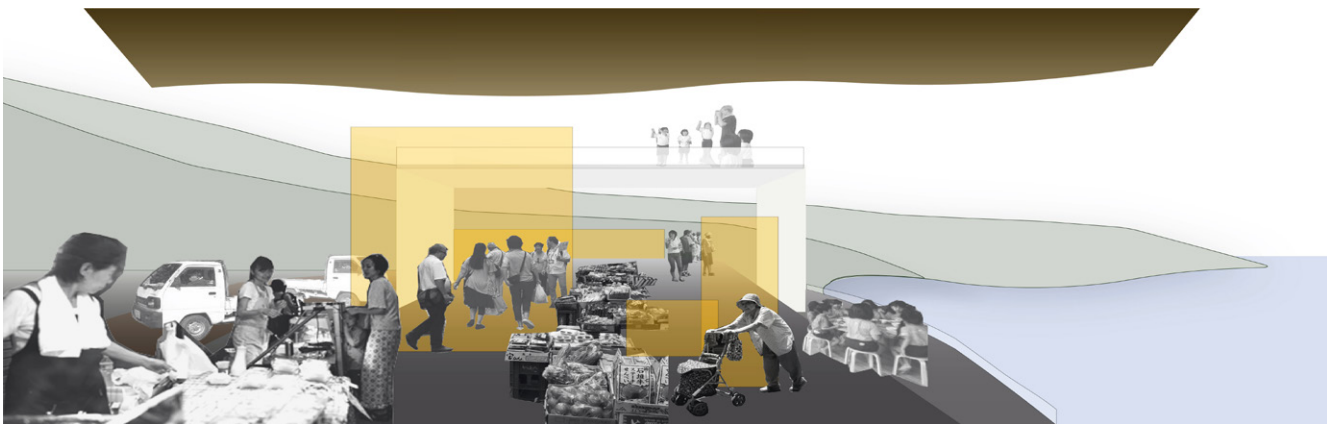


Image of Dei Popoli without Solid Walls ©Kanda S., K. Schierhold

Episode II Dei Popoli – A Stage for All

It's our new landmark visible from everywhere. The large roofline extends parallel to the shoreline. Reminiscent of temples found throughout Japan, this roof appears prominent as if protecting the community around it. We call this our *Dei Popoli* – A Stage for All. Overlooking Shizugawa Bay and the Pacific Ocean, Dei Popoli is a public terrace. Its functions are multi-purpose and open to everyone – it is the commercial and symbolic center of our revived small town.



Noh Stage without Walls
©Komatta, Wikipedia



Kiyomizu Temple Balcony ©Kanda S.

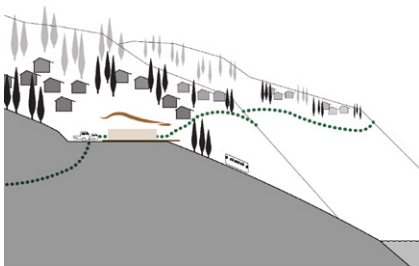
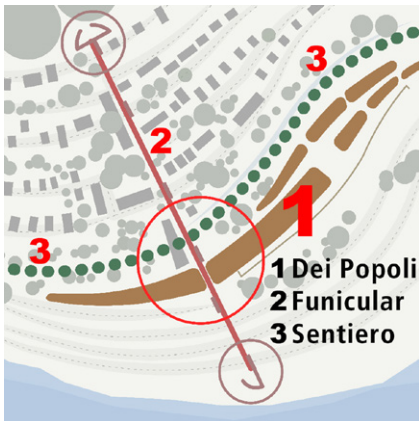


JR Tokyo Station GRANROOF
©Kanda S.

The Dei Popoli is a building without solid walls. There is the roof and the ground. It may be analogous to the form of a traditional Noh-dance stage in the forest, or at a grander scale, the floating balcony at Kiyomizu-dera in Kyoto. Or similar to the linear roof at railroad platforms or the iconic canopy of Yaesuguchi at JR Tokyo Station GRANROOF.

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*The Crossing of Funicular and Sentiero
at the Dei Popoli with the Residential
Neighborhood on the Hillside*
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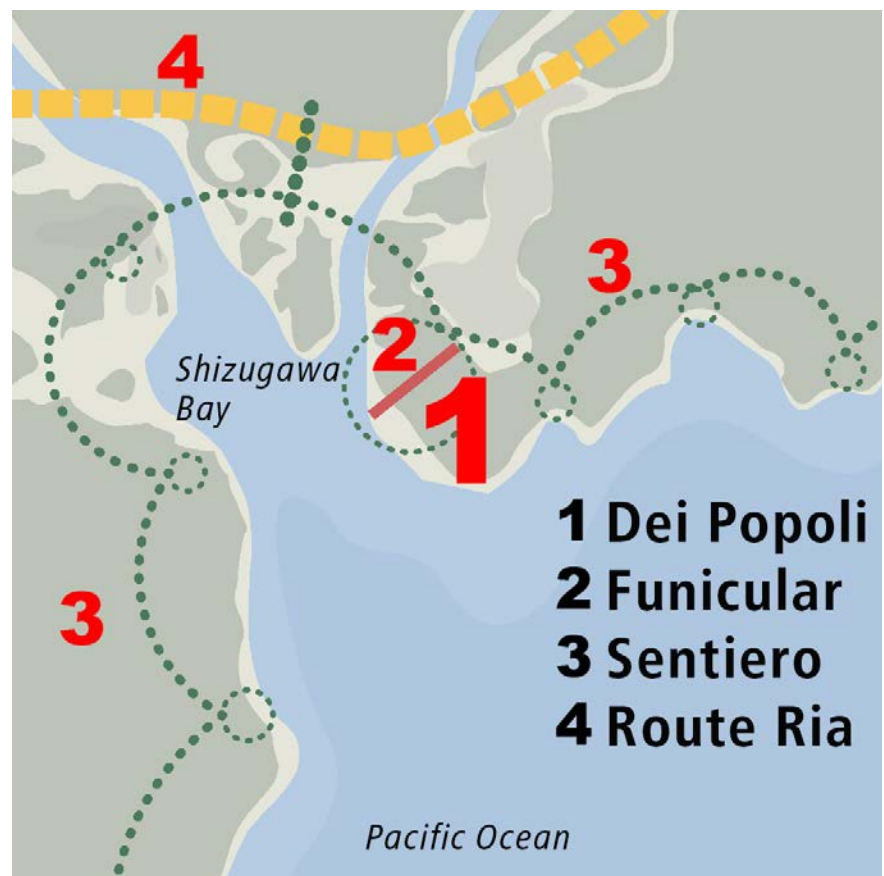
Between the roof and ground are free-standing prefabricated modules built for flexible and temporary functions. Gradually over time, a visitor center, shops, a media center, public bathhouse, daycare, and healthcare facility – all can be located under the big canopy. The Dei Popoli is strategically sited on the mountainside, 20 meter above sea level providing a unique panorama and shelter at times of disaster. On the mountain side, there are access points to the Funicular and the local country road called the *Sentiero*. Our weekly open markets and the seasonal festivals take place at this community crossing.

The fundamental concept of Dei Popoli is that it is first and foremost an *event-stage*. A particular location that is spatially available to be occupied by *performers*, who are the people of the community themselves. Karaoke literally means *empty orchestra*, a musical space to be freely filled in by the voluntary singer. Similarly, Dei Popoli is *empty stage*, a generous space accommodating all sorts of performing actors. The audience, the spectators and the guests are all attendees as well as reciprocating performers. Hence, the stage is borderless. Its boundary is porous, not sharply defined. It is physically ambiguous and welcoming. The large roof overhead simply suggests a territory, a zone of activity – a stage for all. In this way, people have come to regard Dei Popoli as an event, less as an object. Nor is it a building such as the typical community center whose walls, and closed doors restricts who and what may occur within. It may be said that Dei Popoli is an experience, an occasion in the collective life of everyone.

Our Dei Popoli is alive with activity from early morning to night, all seasons all year, bringing familiar faces together. It's easily accessible and our day-to-day needs are mostly found there. Some perhaps come to meet friends or just to stroll and wander. There is a 3.11 Memorial just below the terraced promenade. The synergic scenario is animated by the Dei Popoli being a *hub*, situated at the crossings of people, information, mercantile exchange and transportation paths. It is our market, our shopping arcade, our community forum and public gathering space. It brings our hillside residential neighborhood together to the waterfront. Friends from nearby villages and visitors from afar converge on our Dei Popoli. It has certainly become the exciting center of our community.

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Hierarchy of a Triad Mobility Paradigm ©Kanda S., K. Schierhold

Episode III Funicular, Sentiero, and Route Ria – A Triad Mobility Paradigm

At the dawn of Year 2020, this Sanriku region of Tohoku is enjoying an unprecedented new mode of mobility fundamentally different from the previous transportation paradigm. An alternative transportation strategy scaled to our demographic reality, to the geographic and topographic features of the ria landscape, and utilizing 21st century technological innovation, has been implemented. It includes the Funicular, the Sentiero, and the Route Ria. These three comprise a linked hybrid movement network demonstrating a triad mobility paradigm – a new *soft infrastructure*.

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The Funicular with a View to the Bay and Pacific Ocean Beyond

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We ride the Funicular up and down the hillside where we live. The Sentiero path connects us all to the neighboring seaside villages. These two modes of mobility have given us so much choice and freedom in how to go about our daily lives. As many of us get older and less able to drive a car, we realize the importance of having alternative access to self-reliant mobility. The on-demand and autonomous smart cars traveling on the Sentiero are so convenient that our days of isolated lifestyle are now fortunately in the past.

The Funicular is the most local transportation amenity, traveling on the hillside connecting the waterfront and the higher residential ground. To live on the slopes of Shizugawa Bay requires easy access to the hillside. And, a mobility system serving many diverse functions important to our everyday needs – shopping at Dei Popoli, commuting to school, visiting eldercare or the media center, and going to work.

We depend on the Funicular for the delivery of mail and packages, household cargo, and emergency medical services. At times of disaster, the Funicular will serve as an evacuation route and important lifeline.

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In the years following 3.11, the building of new homes began after the Funicular was completed. Residential development branched out horizontally following the hillside contours. Each funicular station became a nodal gathering place where neighbors stopped to chat and rest. We check the schedule on our smartphone and walk a few minutes from our home to the stop. There is very little climbing on the pedestrian path which has made carrying baggage easier for everyone and accessible to wheelchairs, baby carriages and the disabled. In some areas, a kids' playground or a neighborhood vegetable garden have been founded at the other end of these residential walkways to the delight and enjoyment of all.

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The Funicular is a panorama spot in motion. Views from within extend in all directions to the ocean's horizon. One cannot help to hold the sights in wonder and appreciate the uniqueness of the place where we now live. We feel this palpable sense of home, living so close to the sea. Today, with a relative visiting from Sendai, we ride the Funicular to Dei Popoli which is now the center of our community.



The Coastline Sentiero at EL 20-Meter above Sea Level ©E. Lo Gibson

The Sentiero is the second of the triad mobility paradigm. It is our country backroad used by smart cars and by people who are walking, jogging or bicycling between the neighboring villages. The elderly, school-kids and teenagers, family and friends, farmers, fisherman, slow-tourism hikers – all seem to enjoy and share the Sentiero. Located alongside the scenic coastline, the Sentiero is also a very popular nature trail.

At Minamisanriku, the Sentiero is a cornice meandering through forested slopes and furrowed valleys, hugging the cliffside where deep inlet villages and hidden bays open to the Pacific. This route is not new. There has been a footpath for a long time which connected the more than two dozen fishing and farming communities along the rugged mountainside. In combination with the JR Kesennuma railroad, these routes at one time were well-traveled familiar paths of mobility for our region.



Image of Sentiero ©Allegre Marmotte

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In post 3.11, the Sentiero had once again regained its vital role for us, particularly in strengthening the social benefits derived from locally integrated transportation. We had always felt the anonymity of Highway #45. Drivers sped by affording little face-to-face contact or exchange. In contrast, country backroads promote casual social interactions. Undisturbed by faster moving traffic and at a safe elevation above sea level, this scaled-down road has become a great asset for promoting a close-knit social fabric suited to our current downsized population.

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The Sentiero intersects the Funicular at Dei Popoli. This is the nodal crossing point between the hillside residential community to other coastline villages along the Sanriku seaboard. From here via the Funicular, one can descend to the waterfront for water transport as well, to take a ferry boat south to Ishinomaki or Rikuzentakata to the north. In another discussion, it would be interesting to consider the possibilities of a *Sentiero on water* for the region.

In this way, multiple transport systems linked at appropriate scale, managed and used by the local population, become important catalysts for building a future beyond 2020. The key to these transportation innovations lie not so much in larger top-down funding but rather from thoughtful regional strategies which over time underscore the bottom-up, reality-based improvements to our everyday lives.

Traveling by smart cars or hiking Sentiero's scenic routes, people are finding more opportunities to spend time at their own pace savoring their own experience of locality. In fact, the region's vital tourism economy is once again booming. And in turn, for the people of our region, we feel a satisfying pride of place.

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The Route Ria has replaced both Highway #45 and JR Kensennuma rail-road line which were severely destroyed by the 3.11 tsunami. Route Ria is the region-wide transportation component in the hierarchy of the triad mobility paradigm, our new highway connecting to destinations further inland from the coast. Perpendicular access roads from Sentiero branch away from the coastline to link up with Route Ria. This highway transports people, goods and services from the coast to the central exchanges of Tohoku and beyond. Safe from the reach of tsunami, this highway serves as a critical escape and disaster rescue route in the event of future catastrophe.

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Highway #45 appeared in Minamisanriku in 1972 during Japan's accelerated construction boom. Engineered highways, dams, river escarpments, seawalls and cemented cliffsides transformed our natural environment everywhere. Our Highway #45 connected regional services well but at the expense of local communities. It propagated disruptive through-traffic. The highway's presence created solid barriers cutting a town's direct access to the waterfront. For small towns along the Sanriku coast, Highway #45 introduced an out-of-scale automobile-centric society and drastically changed our daily lifestyles and physical environment.

Route Ria has now replaced Highway #45. We have learned to downsize our transportation needs by implementing a hierarchical system. A small town with a slower-paced post 3.11 lifestyle does not require a national highway running through its center. A single regional highway has been broken down to a triad mobility network. This paradigm shift introduced a scalar concept which first preserves the identity and quality of locality. The hillside Funicular demonstrates such a system. Then the Sentiero route is linked as the intermediate scale of mobility which preserves the tranquility and beauty of the mountains, valleys, and the sea surrounding us. Then finally, access to Route Ria which connects us to the rest of Tohoku and beyond. It is also our ultimate evacuation route in times of major disasters.

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©Kanda S.



©Arno Mikkor, Wikipedia



Images of Smartcars for Diverse Functions and Transportation Technology ©Kanda S.

For those of us living in the decentralized towns of regional Japan, a sustainable and resilient future for the next generations relies on an advanced transportation system but also on a renewed paradigm wisely based on appropriate scalar implementation. In this discussion of our triad mobility paradigm, let us conclude with two real-time episodes from the tragedy of 3.11. They remind all of us about the relevant and ultimate lifeline concerning transportation and community resiliency.

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Survivors of Utatsu in Minamisanriku tell the vivid story of how on the third day after the tsunami had destroyed their homes, rescue came from above. Highway #45 which was the single transport spine of the town had perished. The first responders flew in by helicopter, having seen the huge SOS marked on the ground at Heisei-no-Mori athletic field where survivors took refuge. A note scribbled on paper dropped from the sky stated in English *what do you need?*. They were pilots from a U.S. Navy aircraft carrier stationed offshore in the Pacific. A list was sent back up, and in the following days, the requested items were dropped down to those waiting below. Disaster response did not come by land but from the sky.

In the fifteen hopeless days following 3.11, the survivors of Babanakayama had taken refuge at their small community center upland from their homes, which had been swept away by the powerful tsunami. Help arrived painfully slow. Desperately lacking drinking water and food supply, they found themselves utterly stranded. Access to Highway #45 was practically impossible, their ports lay shattered, and communication was cut off. How aid supplies eventually reached the four dozen survivors was all due to a single K-truck. It was damaged but not completely, and the village leader and his son managed to repair their vehicle and start its engine. Cutting a path over inundated debris, passing by devastated sights of homes and friends who had perished, and maneuvering it as you would a 4WD all-terrain jeep, the daring son reached the town's disaster relief center, retrieved whatever could be loaded: rice, water, blankets, and other essentials. It took nearly a whole day for him to return. Until official rescue finally arrived at the scene, this single K-truck made its invaluable daily roundtrip mission where larger vans and trucks could not get through. Babanakayama had endured, thanks to the K-truck!

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Epilogue Thousands perished in the March 11, 2011 Great Tohoku Disaster. Many thousands more who survived, abandoned the coastal towns, many unwillingly, to live away from the sea. Given Japan's gradual decline in general population, we can imagine a less inhabited stretch from Ishinomaki, Miyagi ken to Miyako, Iwate ken.

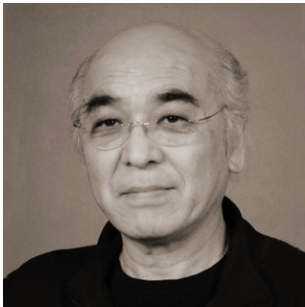
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Yet with a bold vision and disaster-resilient planning incorporating a balanced deployment of 21st century technology, ecologically robust community development, and a paradigm shift in transportation strategy, a transformed society true to its scale and locality may blossom from the people who have always found value in living in this region.

Beyond 2020_nx: Three Episodes has portrayed the image of one hypothetical reality – an attainable potential given the right mindset and concerted initiative. A small 21st century town may yet emerge. Self-reliant and dynamic, its aggregate morphology integrated to the natural landscape and sea which surrounds, characterized by an identity of a place that one can call *my native home*.

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As an architect and educator, Kanda Shun is interested in the dynamics of the nature of place, architecture, and city form – the way people build, inhabit and ultimately sustain meaningful societies. The theme of *Continuity and Transformation in Architecture & Community Form* defines his professional and academic work. He has been the Director of the MIT Japan Design Workshop since 1990, MIT Japan 3.11 Initiative (2011-2016), Veneto Experience_italia since 2004, and the ongoing international Advanced Design Workshops (i_ADW). His teaching career has spanned many years including the Massachusetts Institute of Technology (MIT, 1979-2014) and other schools in the US and Japan.

Kanda is Principal of Kanda Associates Architects Inc. of Cambridge, MA. He holds a Master of Architecture from the Harvard University Graduate School of Design. A native of Tokyo, he resides in Boston and often sojourning elsewhere on the globe.

www.etopos.org



Karin Schierhold is an architect, urban designer and community planner. As a professional she is engaged in work related to the urban public space and the architecture of commercial buildings and multi-family housing. Her experience also includes research in the area of public realm and community development. She has conducted city planning research in Mumbai, India, as a Fulbright grant recipient and has participated in the research and design of housing developments in Japan as member of the MIT Advanced Japan Design Workshop. Karin holds a Master of Architecture in Urban Design from the Harvard University Graduate School of Design. She resides in Washington, DC.

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Places **Heisei no Mori**

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Sport and recreation facility in Minamisanriku, Miyagi Prefecture. The site has a grass pitch, multi-purpose hall, gym, restaurant, and accommodation. After the 3.11 disaster it served as temporal evacuation center. 988-0423, Miyagi, Motoyoshi gun, Minamisanriku cho, Utatsu Masuzawa 28-1

[web-site](#) (Japanese)

Web-Sites **Updates from Tohoku**

Updates from Tohoku & A Night of Remembrance: A Journey to a New Life, a commemorative event on the Great East Japan Earthquake; article hosted by Fish Family Foundation in 2015

[web-site](#)

A Video Report from Tohoku / A Stage for All

This documentary, filmed by photojournalist and documentarian Jake Price, captures the spirit of collaboration in Tohoku surrounding the construction of a gathering space for local residents affected by the 3.11 triple disaster

[web-site](#)

Garden Pavillione at Babanakayama

Documentary on the construction of a temporary housing site in Minamisanriku by the MIT Japan 3/11 Initiative

[web-site](#)

MIT Japan 3/11 Initiative

Initiative established by the MIT-Japan Program at the Center for International Studies, Massachusetts Institute of Technology. University students in Tohoku and from MIT collaborate in studying and implementing disaster-resilient planning.

[web-site](#)

Minami Sanriku: An Archaeology of People and Place

Interviews conducted by Jegan Vincent de Paul and Shun Kanda with the help of Sendai-based film maker and interpreter Takaharu Saito during the MIT Japan 3/11 Initiative's summer workshop in Minamisanriku, 2011

[web-site](#)

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Glossary

Babanakayama

Small fishing village in Minamisanriku, Miyagi Prefecture. The name represents the two areas of Baba and Nakayama.

- ▶Minamisanriku
- ▶Miyagi Prefecture

Dei Popoli

Italian expression that translates to *For the People*

Funicular

Rail based mode of transportation often adopted on steep slopes using cable traction

- ▶Route Ria
- ▶Sentiero

Highway #45

National highway that runs along Japan's Pacific Coast, from Sendai, in Miyagi Prefecture to Aomori, in Aomori Prefecture

- ▶Miyagi Prefecture

Ishinomaki

Located on the coast at the head of Sendai Bay on the mouth of the Kitakami River, Ishinomaki is the second largest city in Miyagi Prefecture with a population of approximately 145,000 (as of Jan. 2019)

[web-site](#)

- ▶Miyagi Prefecture

Iwate Prefecture

One of the six prefectures making up Tohoku, most strongly affected by the 3.11 earthquake; over 5,000 lives were lost and 1,122 people are still missing (as of March 2017)

[web-site](#)

- ▶Miyako
- ▶Rikuzentakata
- ▶Tohoku

K-Truck

Type of compact all-purpose pickup vehicles with engines under 670cc, widely used all over Japan

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Glossary

Kesennuma

Coastal town in north-eastern Miyagi Prefecture with a population of approximately 64,000 (as of Jan. 2019)

[web-site](#)

- ▶Ishinomaki
- ▶Minamisanriku
- ▶Miyagi Prefecture
- ▶Sendai
- ▶Utatsu

Minamisanriku

Coastal town in north-eastern Miyagi Prefecture with a population of approximately 13,000 (as of January 2019)

[web-site](#)

- ▶Ishinomaki
- ▶Kesennuma
- ▶Miyagi Prefecture
- ▶Sendai
- ▶Utatsu

Miyagi Prefecture

One of six prefectures making up Tohoku, strongly affected by the 3.11 earthquake

[web-site](#) (Japanese)

- ▶Ishinomaki
- ▶Kesennuma
- ▶Minamisanriku

Miyako

City in Iwate Prefecture on the Sanriku Coast with a population of approximately 56,000 (as of 2015)

[web-site](#)

- ▶Iwate Prefecture
- ▶Rikuzentakata

Ria

Coastal inlet formed by the partial submergence of a river valley, often irregular in shape and indented

[web-site](#)

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Glossary

Rikuzentakata

Coastal town in south-eastern Iwate Prefecture with a population of approximately 19,000. 99.5% of 8,069 households were damaged by the 3.11 earthquake and tsunami ([web-site](#))

[web-site](#)

- ▶Iwate Prefecture
- ▶Miyako

Sendai

Capital of Miyagi Prefecture, with a population of around one million it is the largest city in Tohoku. About half out of 500,000 houses were damaged by the 3.11 earthquake and tsunami.

[web-site](#)

- ▶Miyagi Prefecture
- ▶Tohoku

Sentiero

Italian expression for *path* or *trail*

- ▶Funicular

Utatsu

Town in Miyagi Prefecture, dissolved in 2005 to create Minamisanriku along with neighboring Shizugawa

[web-site](#)

- ▶Miyagi Prefecture
- ▶Sendai

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Imprint

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