

Hakone Gardens Main Gate 中門

The gate was built in 1937 by the Nishiura brothers of San Jose from a single large redwood log. The basic design of the gate followed a traditional formula developed long ago in China and exported to Japan through Imperial ties with Korea around the fifth century.

Distinguishing Features of the Gate:

Japanese gates have several unique elements that produce a distinctively graceful form and decorative details. This short description is meant to help familiarize people with the architectural vocabulary used to document and define the gate.

At the center core of the gate is an ornately-carved support structure. It's called a "Kaeru" post. Kaeru 蛙 means frog in Japanese and this word also means to return or come back. Thus the ornate carving contains a cultural nuance of physically welcoming the visitor and providing a wish for a future connection through this passageway.



Kaeru Bashira -ridge support

Gegyo & Hafu

The symbols contained within the decorative elements continue beyond the carved welcome above the entry. The ridge beam extends beyond the support posts and is capped with a curved lintel which is itself decorated with a Gegyo ornately carved in patterns which are evocative of waves on an



ocean. Originally these water symbols were in the form of fish. Gegyo literally means fish pendant. All this water-related symbology relates to the carving as a protective shield—water being the strongest protection against fire.

Carved Rooftop Ridge Cap 花瓦 Hana-gawara

Placed on each end of the built-up roof structure, these ornate carvings cap the outer curve of the shingled ridge. In Japan most roof tops are capped with high-fired tile ends. Hakone Gardens was constructed during the early 20th century, when trade was heavily restricted, for many reasons.



Hakone Gardens is therefore unique in having its roof tops capped off with carved Hana-gawara. conditions, these early carvings were replaced with either ornate copper, or more commonly, tile ridge caps from earliest times. Again the symbols used in traditional Japanese and Chinese architecture relates to the builders' skills in creating a decorative elements evocative of protection. Interestingly the symbols carved on the Hakone Main Gate are those of the peony flower and water - these particular designs were discovered decorating a Shinto roof end-gable in the rural Nara village where the Nishiura carpenters were trained in the late 19th century. The peony flower motif has a similar Buddhist connotation to that of the more commonly displayed lotus flower. The peony rising each Spring sends a message of hope and beauty.

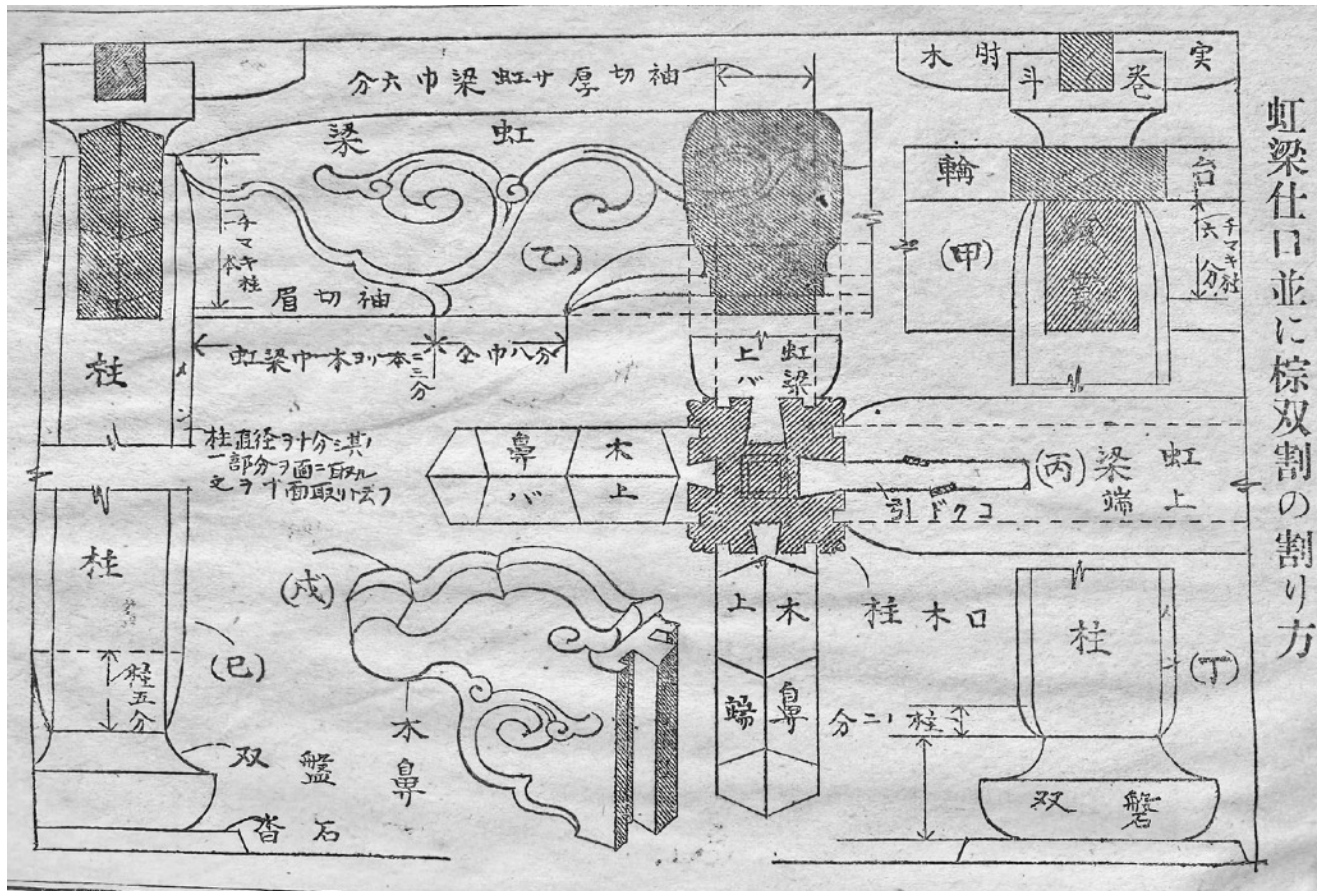
Hijiki 肘木木

A common name for the bracket arm which forms part of the bearing block and bracket complex, structural elements which support the roof load, the hijiki connects the rafter support purlins to the massive main posts.



Expanded Design Detail

Hinagata-bon 雛形本 stencil book— woodblock design book produced during the Edo period and providing necessary keys to each elements proportions.



Books containing architectural drawings of models, design techniques, and sample plans, Hinagatabon were used as a reference book and were an important part of the Nishiura family's tool kit carried to America in 1908.

The curved lines filled with symbolic meaning were included in the gate's design to imbue protection, and provide a feeling of lightness to the heavy structural members. Curves were strictly proportioned with geometric regularity, and side-notes contained in the stenciled pages identified specific mathematical ratios that allowed builders to scale the gate design into larger or smaller proportions. Every individual part sized in this way allowed the carpenters to rely on age-tested proportions to carry the heavy weights of the extended roof. This practical knowledge of weight-bearing proportions

based on mathematical ratios evolved over time. The “traditional” gate built with American materials is a faithful copy containing practical methods to extend the roof.

Tokyou 斗斗きょう Gate and Temple Roof Support Systems

In order to support large roof overhangs, stacked brackets were employed, each bracket extending a short distance from the support pillar. This design module consisting of short interlocking arms can be extended simply by adding additional pieces. This modular bracket system offers both horizontal support and structural mass to counterbalance the extended roof loads. This bracket system is also described in the stencil book, showing the same attention to ratios and proportions.



The Hakone main gate transverse members Udeki 腕木木 go through or are inserted into the posts that extend far enough beyond the horizontal axis to carry the eave purlins Dashigeta 出桁. The gate brackets Hijiki 肘木木 are positioned beneath the Udeki. Below the brackets is a heavy lintel Kabuki 冠木 that runs horizontally between the posts and forms the upper frame for the wooden gate doors.

The wide entry doors are heavy wood-framed with iron brackets made to be opened once each day. The upper portion of the swinging doors have an inserted 24” wide redwood panel. The panels have a large lotus-shaped cut out and small vertical slats to create a transparent view-port through the slats. The symbolic



shape of the lotus conveys the distinctly Buddhist design element, while allowing visitors to focus on the rustic simplicity of the redwood and bamboo. Mixed use of bamboo and vertical planks on the door is referred to as Shiorido 枝折戸.



The roofing is constructed with cedar shingles done in the Kokerabuki 柿葺 style. To secure the gate against severe weather or earthquakes, the pillars are strengthened by short secondary posts set a short interval behind the main pillars. These posts, Hikaebashira 控柱, are connected to the pillars by diagonal braces Hinuki 飛飛貫 and by lower horizontal ties, Ashimoto hikaenuki 足足元控貫.