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***The Laws of Creating an Eruv***  
***Part III: Constructing the Tzurot Hapetach***

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In this chapter, we will address several issues that arise during the physical construction of an *eruv*. Before beginning to build and *eruv*, it must be determined if the area is a *reshut harabim* or merely a *karmelit*. If the area is a *karmelit*, surrounding it with *tzurot hapetach* suffices, whereas a *reshut harabim* must be enclosed by a wall, or at least by doors (*Shulchan Aruch*, O.C. 364:2, and *Mishnah Berurah* 364:8).

***Constructing Tzurot Hapetach***

Constructing a *tzurat hapetach* seems to be a simple and straightforward process. The Talmud (*Eruvin* 11b) states that a *tzurat hapetach* consists of two vertical poles with a horizontal pole directly on top of them (*kaneh mikan vekaneh mikan vekaneh al gabeihen*). However, the laws of *tzurot hapetach* are actually quite complex, particularly when constructing a community *eruv*. Community *eruvim* often use preexisting structures, which can significantly reduce the costs of building and maintaining an *eruv*. These structures, such as telephone poles, were not built for use in *eruvim* and often introduce halachic complexities.<sup>1</sup>

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1. For an explanation of how such structures may be used as *tzurot hapetach* despite the fact that they were not constructed for this purpose, see *Chazon Ish, Orach Chaim* 111:5. See *Mishnah Berurah* (362:64) for more sources on this issue.

### ***Must the Vertical Poles Extend All the Way to the Horizontal One?***

The Talmud (*Eruvin* 11b) records a dispute between Rav Nachman and Rav Sheishet about whether the vertical poles of a *tzurat hapetach* must extend all the way to the horizontal pole. The Halachah follows the opinion of Rav Nachman, that if the vertical poles are ten *tefachim* (approximately forty inches) high and are positioned precisely beneath the horizontal pole, the *tzurat hapetach* is acceptable. The horizontal pole need not touch the vertical poles and may be well above them (*Shulchan Aruch*, O.C. 362:11). The *Mishnah Berurah* (362:62) explains that the basis for this ruling is the principle of *gud asik* (literally, "stretch up"), which states that the Halachah views the vertical poles as extending upward to the horizontal pole.

### ***Gud Asik: Eyesight or Plumb Line?***

Although vertical poles of a *tzurat hapetach* need not touch the horizontal pole (or wire), they must be positioned directly underneath it. The poles cannot even be off by the slightest amount (see *Mishnah Berurah* 362:63). Halachic authorities debate how to determine the proper positioning.<sup>2</sup> Rav Yosef Dov Soloveitchik (as reported by Rav Yosef Adler) and Rav Moshe

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2. Measurements for some areas of Halachah are estimated based on what appears correct to people, while other areas require precise measurements. For example, *terumah* (the fiftieth of grain which is given to *kohanim*) must be an estimate and may not be measured to precisely equal one-fiftieth (*Terumot* 1:7). On the other hand, *techum Shabbat* (the area that one may not leave on *Shabbat*) must be measured precisely (*Eruvin* 57b, 58b). In many areas, it is unclear whether an estimate or precise measurement is required. For example, the *Chazon Ish* (*Hil. Tumat Tzaraat* 8:1) writes that measurements for the spreading of a spot of leprosy are done by estimation. He bases himself on a passage in the Ramban's commentary to the Torah (*Vayikra* 13:5). However, the *Chazon Ish* does not mention that the Rosh (*Tosafot Harosh*, *Mo'eid Katan* 7a, cited in the *Tur's* long commentary to *Vayikra* 13:5) requires the use of measuring implements to determine the leprosy spot's growth.

Feinstein (reported by Rav Elazar Meyer Teitz, from his uncle, Rav Pesach Rayman) both felt that it is sufficient to estimate the poles' positioning with one's eyes. Rav Zalman Nechemia Goldberg (personal communication) also permits using eyesight, although he requires building very wide vertical beams to allow for a wide margin of error in their positioning.

However, Rav Yitzchak Liebes, Rav J. David Bleich, Rav Hershel Schachter, Rav Feivel Cohen,<sup>3</sup> and Rav Mordechai Willig (all through personal communication) rule that a plumb line (or other device for measuring verticality) is necessary to ensure that everything lines up appropriately. The Gemara (*Eruvin* 94b) requires constructing "halachic walls" (and presumably *tzurot hapetach* as well) in the same manner that people usually build walls (*kede'avdei inshei*).<sup>4</sup> Builders and carpenters have used plumb lines for thousands of years; they appear in Amos (7:7-8) and the Mishnah (for example, *Kil'ayim* 6:9 and *Keillim* 29:3). Accordingly, a plumb line must be used in constructing a *tzurat hapetach*. Rav Shlomo Zalman Auerbach told this author that, while it is best to use a plumb line, one may rely on eyesight alone if it is "impossible" to construct the *eruv* otherwise.<sup>5</sup>

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3. Rav Cohen believes that two sets of vertical poles must be constructed, one set that appears to be under the horizontal pole and one set that has been measured to be precisely under the horizontal pole (if the position determined by sight differs from the position determined by the plumb line). It is not clear, however, that Rav Moshe and Rav Soloveitchik invalidate an *eruv* that was measured by plumb line. It may be that they also recognize such an *eruv* but add that measuring by eyesight is **also** acceptable. Rav Shlomo Miller (in his letter of approbation for *The Contemporary Eruv*) presents an argument for why constructing an *eruv* with plumb line measurements suffices according to all authorities.

4. The significance of *kede'avdei inshei* is particularly emphasized by Rav Shlomo Kluger (*Teshuvot Ha'elef Lecha Shlomo* 156, 157, 161, 170, 173, 174).

5. Of course, the definition of "impossible" is debatable. Rav Hershel Schachter (in response to what this author quoted from Rav Shlomo Zalman) insisted that it is never impossible to measure precisely, especially with the invention of devices such as laser pointers. Similar to Rav Shlomo

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Rav David Lifshitz (Rav of Suwalk immediately before World War II) told this author that a plumb line was used when constructing *tzurot hapetach* in Suwalk. Rav Ephraim Oshry (Rav of the Kovno Ghetto) told this author that in Kovno they relied on eyesight alone. Rav Yosef Singer (Rav of Pilzno prior to World War II) also reported that he believes the rabbis he knew in Europe relied on eyesight alone. Accordingly, this debate has raged for at least 60 years. Rav Meir Goldwicht informed this author that Israeli communities today also have divergent practices regarding this issue. In order to avoid this problem, many communities erect vertical poles that reach the horizontal wire or pole. This method avoids the need to estimate from afar if the pole is directly under the wire.

### ***Tachuv - A Horizontal Wire that Passes Through the Vertical Pole***

Another major area of debate in constructing *tzurot hapetach* is the status of "*tachuv*," when the horizontal pole (or wire) does not rest atop the vertical poles, but is drilled through them instead. Cases of *tachuv* frequently arise today, as many wires on utility poles, especially those used for cable television, are attached to bolts that pass into holes in the poles. The issue of *tachuv* arises dozens of times in an average community *eruv*.

The Gemara relates that, in a valid *tzurat hapetach*, the horizontal pole is placed atop the vertical poles. Furthermore, if the vertical poles are not under the horizontal one, but to its side (*tzurat hapetach min hatzad*), the *tzurat hapetach* is unacceptable (*Eruvin* 11b). The Talmud does not specifically address a situation in which the horizontal pole passes through the vertical poles.

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Zalman's ruling, the Rama (O.C. 456:3) permits estimating the measurement for separating *challah* when measuring precisely is not feasible (although he addresses a halachic impediment, rather than practical difficulty).

The *Acharonim* debate the acceptability of such a *tzurat hapetach*. The *Mishnah Berurah* (362:64) notes that the *Pri Megadim* was uncertain regarding this issue and therefore was inclined to rule strictly. On the other hand, Rav Shlomo Kluger (*Ha'elef Lecha Shlomo, Orach Chaim* 164), the *Aruch Hashulchan* (O.C. 362:32), the *Chazon Ish* (O.C. 71:9), and Rav Tzvi Pesach Frank (*Teshuvot Har Tzvi, O.C. 2:18:3*) rule that such *tzurot hapetach* may be used. They argue that, as long as the horizontal pole passes through the vertical poles at a point higher than ten *tefachim* off the ground, the portion of the vertical pole that is above the horizontal pole is ignored.<sup>6</sup> The *Chazon Ish* notes that if a horizontal pole was placed on top of a vertical pole and then another vertical pole was placed on top of the first one, the original *tzurat hapetach* remains acceptable. Similarly, a horizontal wire that passes through a hole in a vertical pole should be acceptable.

This issue has not been resolved; some rabbis rely on the lenient opinion, while others follow the strict one. Rav Dovid Feinstein has told this author that the leniency of *tachuv* should not be employed in community *eruvim*. Rav Shlomo Zalman Auerbach (*Teshuvot Minchat Shlomo 2:35:25*) writes that *tachuv* is undoubtedly acceptable. Rav Yehuda Amital told this author that the practice in Israel is to be lenient on this issue.

#### ***Obstructions Between the Vertical Pole and the Horizontal Pole***

The *Acharonim* debate whether an obstruction (and not simply an open space) between a vertical pole and a horizontal pole invalidates a *tzurat hapetach*. The *Mishnah Berurah* (363:112) cites the *Taz* as ruling that a *tzurat hapetach* is invalid if a roof interrupts between one of its vertical poles and the horizontal pole or wire. His reasoning seems to be that *gud asik* (the theoretical "stretching" of the vertical pole to reach the horizontal one) only applies when nothing obstructs between the

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6. The principle of ignoring what is unnecessary is known as *dal meibacha*. See, for example, *Sukkah* 2a.

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poles. An authority cited by the *Melamed Leho'il* (1:66) and an authority cited by the *Aruch Hashulchan* (*Orach Chaim* 363:46) disagree with the *Taz* and see no problem with a tangible separation between the poles. The *Melamed Leho'il* himself argues that obstructions between the vertical and horizontal poles are only forbidden by the *Taz* when they have a length or width greater than four *amot* (six to eight feet).<sup>7</sup> The *Melamed Leho'il* argues that if there is a smaller obstruction, no one invalidates the *tzurat hapetach*.

This question is of major importance when constructing a communal *eruv*, as telephone wires often do not pass directly over the telephone poles. In some communal *eruvim*, small beams are positioned under the desired wires and are then attached to the telephone poles. These poles often contain objects between the vertical beams or strips and the utility wire, such as boxes, campaign posters, and advertising billboards. Communities that attach wire molding to the telephone pole all the way up to the wire avoid this problem entirely.

### ***The Tapered Pole - The Chazon Ish***

Telephone and utility poles frequently have wires attached to their sides, rather than on top. It is thus important to determine whether one may use such a wire and pole as a *tzurat hapetach* without affixing additional materials to the telephone pole. One could argue that this would be acceptable, because telephone poles are often thicker on the bottom than they are on top. Therefore, a wire attached to the side of the pole on top passes directly over the extra thickness of the lower part of the pole. Perhaps this thickness constitutes a "vertical pole" of the *tzurat hapetach*. One must check, of course, that the extra thickness at the bottom sticks out under this wire for ten *tefachim* of the pole's height, for every vertical pole in a *tzurat hapetach* must be ten *tefachim* high.

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7. The *Taz's* example of an unacceptable obstruction is a roof of a building, which is typically wider than four *amot*.

Despite the above argument, the *Chazon Ish* (*Orach Chaim* 71:12) invalidates a wire on the side of a tapered pole, without explaining his reasoning. He adds that if there is an indentation cut in the pole, perhaps this pole and wire may then be used for a *tzurat hapetach*. The indentation must be ten *tefachim* above the ground. The accepted practice is to follow the *Chazon Ish's* stringency.

### ***Placing a Tzurat Hapetach in a Reshut Hayachid***

Another important issue in *eruv* construction is whether a component of a *tzurat hapetach* may be located within a *reshut hayachid* (private domain). The *Mishnah Berurah* (363:113) cites the *Mekor Chaim*, who invalidates such a *tzurat hapetach*, and the *Mishnah Berurah* accepts his ruling.

There are two possible reasons for this strict ruling. One might argue that the *tzurat hapetach* is not noticeable (*nikar*) if it is situated within a *reshut hayachid* (such as a private yard). Alternatively, one might claim that the walls or fences that encompass a *reshut hayachid* are viewed halachically as extending "all the way to the heavens" (see *Shabbat* 7a), so the airspace above a *reshut hayachid* is halachically impenetrable. For example, a horizontal wire passing through a backyard enclosed by a fence would be invalid according to this opinion, as it is halachically blocked by the "upward extension" of the fence. Rav Hershel Schachter generally instructs *eruv* designers to be strict on this matter.<sup>8</sup>

Other *Acharonim* disagree with the *Mekor Chaim's* stringency.<sup>9</sup> The *Chavatzelet Hasharon* (1:20) writes that the custom is to be lenient in this issue. He adds that his father, who was exceedingly strict concerning most halachic matters, ruled

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8. Rav Schachter discusses this issue in *Be'ikvei Hatzon* (Chapter 13).

9. The *Aruch Hashulchan* does not mention this stringency. *Teshuvot Chatam Sofer* O.C. 91 and 96 and *Teshuvot Maharsham* 1:207 rule leniently regarding this issue in certain circumstances.

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leniently concerning this issue. Rav Hershel Schachter (in a lecture at Yeshiva University) relates that Rav Mendel Zaks told him that the custom in Europe was indeed to be lenient. However, Rav Schachter strongly urges communities to be strict in this matter. This issue has not yet been resolved, and practices vary from community to community.<sup>10</sup>

### ***Flimsy and Zigzagging Wires***

The *Shulchan Aruch* (*Orach Chaim* 362:11) codifies the Talmud's (*Eruvin* 11b) requirement that the vertical poles be sufficiently strong that they could theoretically support a door made of straw.<sup>11</sup> The *Shulchan Aruch* adds that the horizontal wire connecting the vertical poles does not have to be as strong and can even be made from a very light material, such as reed-grass (*gemi*).

Nonetheless, some suggest that the string may not be so flimsy that it sways in the wind. The *Mishnah Berurah* (362:66) presents two opinions regarding this issue. One focus of the argument is whether the horizontal wire has to be sufficiently sturdy that it can withstand "conventional" winds (*omeid beruach metzuyah*). He quotes the well-known rule that for a halachic wall (*mechitzah*) to be valid, it must be sturdy enough to withstand ordinary winds. This rule undoubtedly applies to the vertical poles of a *tzurat hapetach*, but one opinion claims that it does not apply

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10. Rav Mordechai Willig once commented to this author that, in reality, all communities are lenient on this issue, because cars are considered *reshuyot hayachid*. Virtually every community *eruv* today uses *tzurot hapetach* that pass over cars, and the cars' walls should halachically block them, according to the stringent view. This point is also mentioned in *The Contemporary Eruv* (p. 79).

11. The thin strips of wire molding used in many *eruvim* today meet this requirement according to most authorities by virtue of the fact that they are attached to the utility pole, which is sufficiently strong (see *Sha'ar Hatziyun* 363:22).

to the horizontal strings (or poles). Another objection to flimsy wires is that normal doorframes are not constructed in such a manner (see *Eruvin* 94b). The *Aruch Hashulchan* (362:37) rules leniently regarding this concern, while the *Chazon Ish* (*Orach Chaim* 71:10) rules strictly.<sup>12</sup> Common practice appears to accept the lenient approach.

In a true doorframe, the horizontal beam goes straight from one vertical beam to the other. When constructing a *tzurat hapetach*, it happens sometimes that the wire will wrap around things, such as trees or poles, which it does not pass over. Consequently, the wire, which should parallel the top beam of a doorway, will zigzag between the vertical poles rather than going straight from one of them to the other. Rav Yehuda Henkin (*Bnei Banim* 1:19) suggests that the status of such a wire depends upon the same dispute as the status of a wire which is blown from side to side in the wind, for both wires move horizontally from being directly between the vertical poles. In defense of the lenient position, Rav Henkin claims that a minor zigzag is permissible, because the Gemara (*Eruvin* 11a) describes *eruv* made of grapevines, which are not completely straight. Nonetheless, Rav Henkin claims that a curve of greater than twenty-two degrees invalidates the *tzurat hapetach*. Rav Yosef Adler reports that Rav Yosef Dov Soloveitchik also espoused this position. Rav Meir Arik (*Teshuvot Imrei Yosher* 2:133) claims that the wire is only valid if it does not sway or veer more than three *tefachim* in any direction.<sup>13</sup> This author has heard that *eruv* designed by Rav Shimon Eider (such as the *eruv* in West Orange, New Jersey) allow for almost no zigzagging. For a discussion of this issue, see Rav Mordechai Willig's article in *Beit Yitzchak* (25:99).

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12. The *Chazon Ish* invalidates the wire as long as the wind can move part of it outside a straight line between the two vertical poles. Rav Nata Greenblatt told this author that he constructed the Memphis, Tennessee *eruv* with unusually wide vertical poles in order that the wires do not sway beyond the width of the vertical poles.

13. For a criticism of this position, see *The Contemporary Eruv* (pp. 74-75).

### ***Sagging Wires***

A related issue is whether the horizontal wire may sag. The *Mishkenot Yaakov* (111, cited by *Sha'ar Hatziyun* 362:56) and the *Chazon Ish* (*Orach Chaim* 71:10) rule that a sagging wire disqualifies a *tzurat hapetach*. If the wire sags, it probably sways in the wind, which is problematic according to some authorities (mentioned above). Furthermore a *tzurat hapetach* must be constructed in a manner that replicates the way people construct doorframes, and people do not manufacture doorframes that sag on top. Interestingly, Rav Yosef Dov Soloveitchik (cited in *Nefesh Harav* p. 170) recalled from his childhood that he visited his grandfather, Rav Chaim Soloveitchik, in Brisk and went with the *dayan* (rabbinic judge) of Brisk to check the community *eruv*. During that trip, the *dayan* tightened all the horizontal wires so that they would not sag, apparently following the *Mishkenot Yaakov's* opinion.

Despite these rulings, Rav Tzvi Pesach Frank (*Teshuvot Har Tzvi* 2:18:8) permits sagging, as long as a significant part of the wire (about ten inches) does not come within ten *tefachim* of the ground. In addition, the *Aruch Hashulchan* does not cite the strict ruling of the *Mishkenot Yaakov* at all. The practice of most communities in Europe reportedly was to follow the lenient opinion in this area.

Communal practices today still differ in this area. Some communities follow a compromise approach that the horizontal wire may sag up to three *tefachim* (approximately 9-12 inches),<sup>14</sup> based on the concept of *lavud*, that a gap of less than three *tefachim* is considered closed.<sup>15</sup>

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14. See Rav Shimon Eider's *Halachos of the Eruv* (p. 24).

15. Another common example of *lavud* is a chain link fence, which serves as a solid wall if the gaps between the links are less than three *tefachim* wide.

### ***Slanted Wires***

Because a *tzurat hapetach* should be built like a true doorway, a potential problem arises when one pole is taller than the other, putting the horizontal wire on a slant (even though it is taut). One could claim that this should be invalid, as most doorways are built with the horizontal beam perpendicular to the vertical beams. Nonetheless, the *Mishnah Berurah* (362:60) rules that even if the horizontal wire is slanted, the *tzurat hapetach* is acceptable. He cites (*Sha'ar Hatziyun* 362:46) the opinion of Rav Akiva Eiger, however, that an exceedingly slanted wire might disqualify the *tzurat hapetach*. Rav Aharon Kotler (cited in Rav Shimon Eider's *Halachos of the Eruv*, p. 23) rules that a slant of less than forty-five degrees is acceptable even according to Rav Akiva Eiger. One should pay particular attention to not exceeding a fifty five degree slant when building a Tzurat HaPetach on a steep hill. The *Netivot Shabbat* (19:27 note 60) claims that a slant of more than twenty-two degrees is problematic. He also expresses Halachic concerns with building Tzurot HaPetach on a steep hill due to its being a viable Halachic Mechitza.

### ***Conclusion***

We have reviewed some of the major issues concerning how to build a *tzurat hapetach*. While the laws of *eruv* are extremely complex, it is an area where laymen can make a major contribution. Vigilant laymen who know the locations of their community's *tzurot hapetach* can help ensure its validity by notifying their rabbi whenever they notice downed or sagging wires. Similarly, people can help by noticing when telephone and utility workers make changes in the structure of poles and wires.<sup>16</sup>

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16. See this author's article, "Advice for Proper Eruv Maintenance," in Yeshiva University's *Chavrusa* (April 1993, pp.5-6).