1.0. Introduction

1.1. Food and drink preparation areas may have differing design standards depending on location and the intended use. This general guidance is for new and refurbishment Design teams.

1.2. Food & drink preparation generally involves heating which introduces potential ignition sources into the workplace, which need to be controlled or mitigated but ensuring usability and functionality of the space. Food & drink preparation must therefore be confined to designated areas to reduce the risk of fire.

1.3. Food and drink consumption and preparation is not permitted in science laboratories, equipment rooms or workshops etc., where other arrangements should be place for the welfare of staff and students.

2.0. Definitions

- **Office** - a room, set of rooms (including lecture theatres, seminar rooms and teaching areas), or buildings used as a place of business for non-manual work;

- **Tea Point** - designed for the small-scale preparation of hot drinks and snacks in areas close to the workplace - it may not necessarily be a separate fire compartment or have any form of fire safety measures from the immediate area;
• **Kitchens in Departments (Small)** - designed for the small-scale preparation of hot drinks, snacks, light meals in areas close to the workplace, which forms a fire compartment and has appropriate fire safety measures, and fire detection;

• **Kitchen (Large)** - purpose built designed and managed as a room for cooking and food preparation, such as professional catering facilities with large-scale equipment, trained catering staff etc. This may include refectory or catered student halls of residence;

• **Student Residence Kitchen** - a kitchen provided for student / residents to allow self-catering food and drink preparation;

• **Student Residence Studio Flat Kitchen Area** - small food and drink preparation area provided in student / residents studio flats, to allow self-catering food and drink preparation;

### 3.0. Tea Point - Design Issues & Locations

• **Location** - a tea point may be a separated area within a common room, study room, larger office, or may form part of open plan office layout. Drink and food preparation must be carried out in clearly defined areas separated from normal workspace by a physical barrier. Where physical separation is not practical a clear space of at least 1m should be maintained between the drink and food preparation equipment and the work area;

  o **Note** - tea points & kitchens are **not permitted** with laboratory space under general lab safety requirements;

• **Fire Rated Structure** - **not required** to be enclosed in a fire rated structure (with the exception of tea points located off stair enclosures, protected or critical means of escape routes - to be agreed with UCL Fire Safety Manager);

• **Automatic Fire Detection** - there should be smoke detection (preferably, Apollo ‘Discovery’ combined smoke/heat heads) were appropriate. Detectors must be positioned away from kettles or microwaves to reduce unwanted fire alarms. In certain circumstances, a ‘Rate of Rise’ heat detector may be required due to size of room, height of ceiling or previous unwanted alarms caused by food & drink preparation;

• **Provision of numbers and types of electrical sockets** - to help manage the quantity electrical devices used, only fused spur type sockets should be provide with no sockets to plug additional devices in;

• **Ventilation** - provide suitable & effective ventilation and kitchen extraction systems;
• **Equipment Permitted** - equipment used for drink & food preparation is restricted to:
  - microwave oven;
  - electric kettles / coffee makers;
  - or similar purpose built water-heating equipment;
  - Refrigerator (ensuring that it has good supply of airflow around it);

• **Equipment Not Permitted** - equipment using naked flames or radiant elements must not be used. This includes:
  - toasters;
  - sandwich makers;
  - Electric or gas cookers of any type;
  - Use of hot rings / fat fryers / steamers / woks or similar;

### 4.0. Kitchen (Small) Design Issues

- **Location** - a small kitchen should be fire separated off a corridor, stair enclosure or office area;

- **Fire Rated Structure** - should be a fire rated structure, meeting 30 minutes Fire Resistance (FR30), including any service penetrations passing through the structure;

- **Fire Doors** - kitchen door to be fitted with 30 minute fire door complete with intumescent strips & cold smoke brush seals & self-closing with vision panel [FD30(S)SC&VP] with ‘Fire Door keep Shut’ or similar sign (See UCL Technical Note TN013 at www.ucl.ac.uk/fire/documents);

- **Automatic Fire Detection** - ‘Rate of Rise’ heat detector type;

- **Suitable and effective ventilation and kitchen extraction systems**;

- **Equipment Permitted** - equipment used for drink & food preparation is restricted to:
  - microwave ovens;
  - refrigerator (ensuring that it has good supply of airflow around it);
  - toasters and sandwich makers or similar;
- Electric kettles, coffee makers or similar purpose built water-heating equipment etc.

**Equipment Not Permitted** - equipment using naked flames **must not be used**:
- Electric or gas cookers of any type;
- Use of hot rings/ fat fryers/ steamers/ woks or similar;

### 5.0. Kitchens (Large - Industrial Refectory/Residences) Design Issues

- **Location** - a large kitchen is a purpose built room forming a fire rated structure, meeting in minimum of 30 minutes Fire Resistance (FR30), including any service penetrations passing through the structure. The locations may need to be reviewed or additional precautions designed into the structure in line with its proposed location and the building fire strategy;

- **Fire Rated Structure** - should meet a minimum of 30 minutes Fire Resistance (FR30) fire rated structure (including any service penetrations).

- **Fire Doors** - kitchen door to meet FD30(S)SC&VP with ‘Fire Door keep Shut’ sign (see TN013 at [www.ucl.ac.uk/fire/documents](http://www.ucl.ac.uk/fire/documents));

- **Ventilation** - provide suitable & effective ventilation and kitchen extraction systems;

- **Fire Suppression Systems** - for large kitchens, UCL’s and our insurance provider’s preference is as follows:
  - **Ansul R-102 Restaurant Fire Suppression System Overlapping** (see TN038 at [www.ucl.ac.uk/fire/documents](http://www.ucl.ac.uk/fire/documents));
  - Additionally this fire suppression system will need to provide, suppression in ductworks above the kitchen ranges:
    - The R-102 system is designed to protect areas associated with ventilating equipment, including hoods, ducts, plenums, and filters. It also protects auxiliary grease extraction equipment and cooking equipment such as various types of fryers, griddles, range tops, broilers, char-broilers, and woks;

- **Other Fire Precautions** - the following should be considered:
  - Fire separation shutters, enclosure or compartment that contains a localised area of high fire risk such as a cooking range within a catering area (See UCL Technical Note TN038 [www.ucl.ac.uk/fire/documents](http://www.ucl.ac.uk/fire/documents));
- Fire dampers and extraction ductwork will need to be considered and relevant design advice to reduce a fire within such ductwork;

- Gas or power isolation systems feeding cooker and cooking equipment should be provided;

- **Automatic Fire Detection** - should be an ‘Discovery’ multi-sensing detectors at specific locations as part of the design risk assessment (see TN054);

- **Equipment Permitted** - equipment used for drink and food preparation is generally unrestricted and may include - refrigerator (ensuring that it has good supply of airflow around it), equipment using naked flame, cooking ranges, grilles, brat pan deep fat fryers etc.

### 6.0. Student Residence Self-Catering Kitchen - Design Issues

- **Location** - small kitchen for students living in a cluster flat, which may be located off a corridor forming a single escape condition. It may also include a kitchen located off a corridor used by a number of residents/students located in separated cluster flats (i.e. not necessarily behind a flat front door, that has limited/controlled access to certain residents sharing one kitchen), to allow self-catering food and drink preparation;

- **Fire Rated Structure** - should be a fire rated structure meeting 30 minutes Fire Resistance (FR30), including any services penetrations passing through the structure;

- **Fire Doors** - kitchen door to meet FD30(S)SC&VP with ‘Fire Door keep Shut’ sign (see UCL Technical Note TN013 at [www.ucl.ac.uk/fire/documents](http://www.ucl.ac.uk/fire/documents));

- **Automatic Fire Detection** - ‘Rate of Rise’ heat detector type;

- **Equipment Permitted** - equipment used for drink and food preparation is generally unrestricted and may include - refrigerators / electric cookers / grilles / frying / Wok pans / toasters / sandwich makers / rice cookers, etc.

### 6.1. Seating Safety in Student Cluster Flat Kitchens

- it is recommended that where possible the positioning of cooking areas be placed at the furthest point from the room exit, preferably against an external wall for ease of ventilation; so that the student kitchen seating areas, are positioned close to the door to avoid having to escape pass any cooker fire.

- See attached plan - giving details;
7.0. Student Residence Studio Flat - Kitchen Area Design Issues

- **Location** - small self-catering food and drink preparation area provided for one / two persons living in a studio flat or suite of rooms;

- **Fire Rated Structure** - studio flats are to meet 30 minutes Fire Resistance (FR30) in construction; this includes all services penetrations to flat;

- **Fire Doors** - studio flat door to meet FD30(S)SC, fitted with ‘Fire Door keep Shut’ (see UCL Technical Note TN013 at www.ucl.ac.uk/fire/documents);

- **Automatic Fire Detection (Studio Flats)** - will be provided with smoke detection and control unit to comply BS5839-6. A Rate of Rise heat detector will be provided in all studio flats positioned with the flat within 500mm in from the door. A manual call point will be provided within 15m of the rooms;

- **Equipment Permitted** - equipment used for drink and food preparation is generally unrestricted and may include - refrigerators / electric cookers / grilles / frying / wok pans / toasters / sandwich makers / rice cookers etc. Only in the cooking area and within range of extraction hood (ensuring that is has good supply of airflow around it);

- See attached plan - giving details;

8.0. Student Residence Kitchen Area & Studio Flat Design - Recommendations

8.1. **Introduction** - general cooking activities and combustion products from cooking are by far the largest cause of unwanted fire alarm activations in UCL halls of residences. Therefore, the following systems may assist in considering design depending on location and occupant use in reducing unwanted fire alarms within both in cluster kitchens or studio flats.

8.2. **General kitchen setting out points** - it is recommended that the following systems be considered to assist in reducing unwanted fire alarms within both residence cluster kitchens or studio flats - these are system controls to help reduce cooking products activating the smoke detection outside of the kitchen through the spread of fumes or cooking smoke products.

(a). **Kitchen extraction** - efficient and low noise cooker extraction hoods should be provided.

(b). **Fire Door Control (Not Studio Flats)** - kitchen fire doors fitted with mains powered ‘door open’ warning alarms, such as Dowwatcher. This system prevents doors from being held open, other than for short periods, by sounding a local alarm (www.hoyles.com).
(c). Work area sockets - consideration should be given to providing sockets under 'over worktop cupboards', where toasters, sandwich makers and rice cookers are plugged in, has resulted in damage and potentially serious fires in these units. Radiant heat and / or flames from these items causes degradation / scorching to the underside of the cupboard units, resulting in a potential fire involving such units or other items located on kitchen surfaces nearby.

(d). Consideration should be given to using systems to switch off unattended cooking and/or devices and to assist fire doors to remain shut to kitchens. These are system controls to help reduce cooking products activating the smoke detection outside of the kitchen through the spread of fumes or cooking smoke products.

(i). Ventilation of Kitchen / Cooker Areas - provide a product called Cookermiser to engage cooker / room extractor when in use so that good ventilation is provided, to reduce false alarms caused by cooking products (www.westenergy.co.uk / www.cookermiser.co.uk).

(ii). Cooker Guard - this system automatically turns off the cooker if users walk away from the cooker for a specified period, or unintentionally leave the cooker on when finished. The system activates if the temperature gets too high or when the pre-set time has elapsed. The 'Cooker Guard' or similar systems are available from a number of suppliers (www.safetysystemsdistribution.co.uk).

(iii). SentryCook - SentryCook is a simple to use device that controls electrical and gas appliances—predominantly cookers. Its purpose is to reduce wasted energy and to prevent fires within the cooking environment (E: sentrycook@adsyst.co.uk or www.sentrycook.com).

8.3. To ensure, as far as is reasonably practicable, the safe design of student kitchens, follow safe principles as set out in UCL Fire Safety Technical Note TN050 (www.ucl.ac.uk/fire/documents).
Cooking set out on exterior walls for ease of fume extraction & not between seating and room exit (with some form of cooker fume extractor interface)

Seating set out by exit

Fire Door to meet FD30(S)SC&VP (See UCL Tech Note 013) and fitted with mains powered Dorwatcher Alarm (see www.hoyles.com) (or similar) to prevent door being left open

All walls to meet the minimum of 30 minutes Fire Resistance (FR30) including all penetrations and services
Cooker (with some form of cooker fume extractor interface) not positioned between the living area and room exit

All walls to meet the minimum of 30 minutes Fire Resistance (FR30) including all penetrations and services

BS5836-6 combined smoke & heat detector to give local warning - see TN055 / TN55B

Main building fire alarm (heat conforming (BS5839-1) see TN055 / TN55B

Fire Door to meet FD30(S)SC (See UCL Tech Note 013)

STUDENT STUDIO FLAT KITCHEN LAY OUT - FIRE SAFETY GUIDANCE FOR NEW AND REFURBISHED PROJECTS